



## TOWN OF RIDGEFIELD

### Planning and Zoning Department

# ADOPTED AMENDMENT TO THE ZONING REGULATIONS

## 7.16 - Renewable Energy Systems

**Reasons:** Ridgefield's Zoning Regulations do not currently adequately address the topic of renewable energy installations (solar, wind or geothermal). Due to the many elements that must be taken into consideration when installing energy systems on properties, the Ridgefield Planning & Zoning Commission would like to see more specific, tailored regulations that address the multi-faceted issues of renewable energy systems. Section 7.16 will be a new stand-alone section of the zoning regulations. Section 2.2 will also be updated with new definitions pertaining to renewable energy terminology.

Prior to 2019, Ridgefield Zoning Regulations made no mention of renewable energy systems. In 2019, an increase in the number of residents interested in installing such systems led to the Commission amending Section 3.4.B.3 to include renewable energy systems under the category of "Accessory Structures," making such systems subject to the same bulk requirements as structures such as sheds, gazebos, hot tubs, etc. However, these regulations have not given sufficient unique consideration to the many complex aspects of the different types of renewable energy systems and their varying sizes, capacities or impacts.

The Commission would like to support and encourage renewable energy in Ridgefield as it both grows in popularity and becomes a necessary and important contributor to sustainability and clean energy goals. As more property owners in Town may begin to consider utilizing renewable energy, the Commission wants to ensure that proper and appropriate regulations exist to ensure that renewable energy systems are consistent with neighborhood compatibility while ensuring that renewable energy systems are consistent with neighborhood compatibility and the preservation of community character.

**Consistency with POCD:** The 2020 Plan of Conservation and Development dedicates Chapter 4 to the theme "Be Sustainable". One key chapter goal is to "reduce dependence on fossil fuels" and to do so by using "regenerative heating and cooling energy alternatives". Thus, the adoption of renewable energy regulations will be well correlated with the POCD's goals to put these sustainability concepts into action.

## **A. PURPOSE AND INTENT**

These renewable energy standards are established for the purpose of incentivizing, facilitating, and regulating the development of renewable energy, including renewable geothermal, solar and wind generating facilities in Ridgefield with the goal of protecting the public health, safety, and welfare of Ridgefield's residents by avoiding significant adverse and cumulative impacts to the public and neighboring properties, and ensuring the preservation of the Town's community character.

Renewable energy is widely considered an essential part of addressing man-made climate change by weaning the electric grid from fossil fuels. The carefully managed widespread employment of renewable energy is encouraged in the Town of Ridgefield. Connecticut General Statutes Section 8-2 allows zoning regulations that encourage the use of renewable energy systems.

The planning, zoning and permitting processes for renewable energy systems seek to address safety, aesthetics, community character, and compatibility concerns. Thus, the intent of this section is to:

- Establish standards to enable and regulate the installation and use of renewable energy systems;
- Encourage and facilitate the use of renewable forms of energy in Ridgefield.
- Ensure that renewable energy systems are consistent with neighborhood compatibility and the preservation of community character.

## **B. APPLICABILITY**

Within the Town of Ridgefield, the installation of solar, wind, and geothermal energy renewable energy systems shall be subject to these regulations.

However, large-scale solar energy systems that are tied to the grid are governed by the Connecticut Siting Council and do not fall within the jurisdiction of the Town of Ridgefield's Zoning Regulations. The Connecticut Siting Council does not regulate facilities owned and operated by a private power producer that is determined by the Connecticut Siting Council to be for the producer's own use and that has a generating capacity of 1 megawatt or less if utilizing renewable energy sources or a generating capacity of 25 megawatts or less if utilizing cogeneration technology.

## **C. ALLOWED RENEWABLE ENERGY SYSTEM TYPES**

The following renewable energy system types, as defined in Section 2.2, shall be allowed within the Town of Ridgefield as permitted below in Section 7.16.E through Section 7.16.I.

### **1. Solar Energy Systems**

- a. Roof-mounted Solar Energy Systems
- b. Ground-mounted/Pole-mounted Solar Energy Systems

2. Wind Energy Systems
  - a. Roof-mounted Wind Energy Systems
  - b. Ground-mounted Wind Energy Systems
3. Geothermal Energy Systems

## **D. PERMITS REQUIRED**

1. Permitted (without a Zoning Permit):
  - a. All roof-mounted solar energy systems, installed on a principal building or accessory structure in all zones.
  - b. All closed-loop geothermal energy systems in all zones.
2. Zoning Permit Required:
  - a. All ground-mounted/pole-mounted solar energy systems of no more than six (6) feet in height from the ground to the highest point of the structure in all residential zones or no more than four (4) feet in height from the ground to the highest point of the structure on lots that are less than 20,000 square feet in area, and not located in the front yard.
3. Special Permit Required:
  - a. All ground-mounted/pole-mounted solar energy systems greater than six (6) feet in height from the ground to the highest point of the structure in all residential zones or greater than four (4) feet in height from the ground to the highest point of the structure on lots that are less than 20,000 square feet in area.
  - b. All ground-mounted/pole-mounted solar energy systems in all residential zones located in the front yard.
  - c. All ground-mounted/pole-mounted solar energy systems in any business/commercial or multi-family zone.
  - d. All wind energy systems.

## **E. Requirements for All Renewable Energy Systems**

- a. Where designed to generate electricity, the system must be used to produce energy solely for consumption within buildings, structures, and uses located on the same lot as the system, except that:
  - i. When the lot receives electrical power supplied by a public utility company, excess energy generated may be supplied to the utility company or through the distribution system of the utility company to offset other usage of other electric accounts, in accordance with applicable laws such as those pertaining to net or virtual net metering.
- b. The applicant may be required to submit additional materials that indicate compliance with this section which may include but are not limited to:
  - i. An A-2 Survey and project narrative showing detailed information, including maps, plans sheets, or dimensioned sketches, showing the proposed location, including setbacks from property lines, adjacent roadways and sight line studies, distances from structures on neighboring properties, and height.
  - ii. Detailed product specifications from the manufacturer.
  - iii. Sun and shadow diagrams specific to the proposed installation (for solar energy systems).
- c. All parts of a renewable energy system shall be maintained in good working repair at all times.
- d. Renewable energy systems, when applicable, shall be subject to Sec.7.15, Stormwater Management.
- e. Renewable energy systems, when applicable, shall be subject to the provisions of the Ridgefield Noise Ordinance.

## **F. Requirements for Solar Energy Systems**

### **1. Roof-Mounted:**

- a. A roof-mounted solar energy system and any portion thereof shall be located in compliance with minimum yard setbacks applicable to structures for the zoning district in which it is located.
- b. A roof-mounted solar energy system and any portion thereof affixed to a pre-existing legal non-conforming structure, as of the effective date of this

regulation, shall not have to comply with the minimum yard setbacks applicable to structures for the zoning district in which it is located.

- c. A roof-mounted solar energy system or any portion thereof shall not extend or protrude further than any eaves, edges or outermost element.
  - d. In all zoning districts, a roof-mounted solar energy system or any portion thereof shall not exceed the allowable total building height for that zoning district.
2. Ground-Mounted/Pole-Mounted Solar Energy System as an Accessory Structure/Use:
- a. Ground-mounted/pole-mounted solar energy systems may be permitted in the side or rear yard as long as the equipment is located outside the minimum required yard setbacks.
  - b. On properties of less than 20,000 square feet in area, ground-mounted/pole-mounted solar energy systems shall cover no more than ten percent (10%) of the total lot area.
  - c. On properties of less than 20,000 square feet in area, ground-mounted/pole-mounted solar energy systems shall not exceed four (4) feet in height from the ground to the highest point of the structure
  - d. A ground-mounted/pole-mounted solar energy system and any portion thereof shall not exceed twelve (12) feet in height from the ground to the highest point of the structure when fixed or eighteen (18) feet in height from the ground to the highest point of the structure if a solar tracker is used.
  - e. Applications shall include a landscaping plan showing adequate screening from neighboring properties, where appropriate.
  - f. A ground-mounted/pole-mounted solar energy system shall conform to industry standards and shall be constructed in accordance with all applicable local, State, and Federal safety, construction, electrical, and communication requirements.
  - g. All exterior electrical and/or plumbing lines must be buried below the surface of the ground and be placed in conduit.

## **G. Requirements for Wind Energy Systems**

- 1. Roof-mounted:

- a. A roof-mounted wind energy system and any portion thereof shall be located in compliance with minimum yard setbacks applicable to structures for the zoning district in which it is located.
  - b. A roof-mounted wind energy system and any portion thereof affixed to a pre-existing legal non-conforming structure, as of the effective date of this regulation shall not have to comply with the minimum yard setbacks applicable to structures for the zoning district in which it is located.
  - c. In no case shall a roof-mounted wind energy system and any portion thereof extend more than 10 feet above the total building height for the zoning district in which it is located.
  - d. When a wind energy system is proposed in the Central Business District, approval shall first be granted by the Village District Consultants (pursuant to Section 8.3).
2. Ground-Mounted Wind Energy System as an Accessory Structure/Use:
- a. Ground-mounted wind energy systems in the RAA and RAAA residential zones shall not exceed 80 feet in height from the average grade.
  - b. Ground-mounted wind energy systems shall not be located in any front yard.
  - c. In permitted residential zones, ground-mounted wind energy systems shall be set back from all lot lines a distance at least equal to the height of the wind energy apparatus.
  - d. In all permitted business/commercial zones, ground-mounted wind energy systems shall comply with minimum setbacks for the specific zone.
  - e. When a wind energy system is proposed in the Central Business District, the design shall first be reviewed by the Village District Consultants (pursuant to Section 8.3).
  - f. When a wind energy system is proposed in any other business/commercial zone, review shall be undertaken according to Zoning Regulations by the Architectural Advisory Council.

## **H. Requirements for Geothermal Energy System**

1. All transmission lines to any other building or structure shall be located underground to the extent feasible, and shall not involve access to the street right-of-way or cross any street lines.
2. All closed-loop geothermal systems shall be installed according to manufacturer specifications, the requirements of any applicable utility company interconnected agreements, where applicable, and any applicable codes including the Connecticut Building Code.
3. The design and installation of geothermal systems and related boreholes for geothermal heat pump systems shall conform to applicable industry standards.
4. Only non-toxic, biodegradable circulating fluids such as food grade propylene glycol shall be permitted.
5. Wellheads located above ground shall be labeled clearly to identify that they are part of a closed loop geothermal system and not a source of potable water.

## **I. Other Approvals May Be Required**

An approval under this Section does not relieve any person of the requirement to obtain other necessary permit approvals if applicable, if the proposed work may include:

1. A regulated activity in a wetland or watercourse area;
2. An activity within a floodplain area; or
3. An activity regulated by a local, state, or federal agency.

## **Definitions: 2.2 Renewable Energy related-terms**

**Renewable Energy:** Energy that is collected from natural sources that are not depleted when used including but not limited to sunlight, wind, rain, waves and geothermal heat.

**Geothermal Energy System:** An energy system that utilizes the production of energy from underneath the Earth's surface to generate heating and cooling for buildings through the use of ground source heat pumps and underground closed loop piping systems.

**Solar Energy System:** Any solar collector, module, or other solar energy device, or any structural design feature, mounted on a building or on the ground, and whose primary purpose is to provide for the collection, storage, and distribution of solar energy for space heating or cooling, water heating, or electricity.

**Solar Energy System, Roof-Mounted:** A solar energy system that is installed upon, or is part of, the roof of a building or structure. This shall include systems that are integrated as awnings or attached to the roofs of porches, sheds, carports, and covered parking structures and which consist of solar panels, shingles or tiles.

**Solar Energy System, Ground-Mounted:** A solar energy system that is mounted on the ground to hold solar panels up at affixed angle as well as systems that enable tracking of the sun via manual or automatic methods.

**Solar Energy System, Pole-Mounted:** A solar energy system that elevates solar panels higher off of the ground than traditional ground-mounted solar energy systems. Pole-mounted systems may include tracking systems to manually or automatically tilt the solar panels to capture optimal amounts of sunshine.

**Wind Energy System:** A system of blades, slats, vanes, etc. and associated mechanical and electrical conversion components whose purpose is to convert kinetic energy of the wind into rotational energy used to generate electricity.

**Wind Energy System, Ground-Mounted:** A wind energy system mounted on a pole, tower or other device that is connected to the ground.

**Wind Energy System, Roof-Mounted:** A wind energy system mounted to the roof of a building or structure.

**Impervious Surfaces** –Typically artificial surfaces that do not allow the penetration or infiltration of precipitation, such as concrete, asphalt (bituminous concrete), brick, stone, or lattice pavers, etc., including, but not limited to, pools, roof tops, paved and gravel driveways, paved and gravel parking areas, tennis courts, sport courts, basketball courts, decks (with less than a 1/8"



gap between planks or located over an impervious surface), ground- or pole-mounted solar arrays, and all other surfacing that is considered impenetrable to precipitation (see also definition for Pervious Surfaces, including permeable, pervious, or porous).