

## Chapter 13

# SOLAR AND GEOTHERMAL ENERGY SYSTEMS

### 10-13-1: AUTHORITY:

Pursuant to the powers granted and limitations imposed by the constitution and laws of the state of Illinois, including the statutory authority granted in 65 Illinois Compiled Statutes 5/11-13. (Ord. 2010-834, 12-7-2010)

### 10-13-2: PURPOSE AND INTENT:

- A. To establish reasonable and uniform regulations for the location, installation, operation and maintenance of solar and geothermal energy systems.
- B. To assure that any development and production of solar and geothermal energy systems is safe and to minimize any potentially adverse effects on the community.
- C. To promote the supply of sustainable and renewable energy resources, in support of national, state and local goals.
- D. To facilitate energy cost savings and economic opportunities for residents and businesses situated within the village of Wadsworth. (Ord. 2010-834, 12-7-2010)

### 10-13-3: DEFINITIONS:

**BUILDING INTEGRATED SOLAR ENERGY SYSTEM:** A type of building mounted solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural part of the building. Building integrated systems include, but are not limited to, photovoltaic or hot water systems that are contained within roofing materials, windows, skylights, shading devices and similar architectural components.

**BUILDING MOUNTED SOLAR ENERGY SYSTEM:** A solar energy system that is mounted on the facade or roof of either a principal or accessory structure. A building mounted solar energy system shall include building integrated solar energy systems and flush mounted solar energy systems.

**FLUSH MOUNTED SOLAR ENERGY SYSTEM:** A type of building mounted solar energy system that is mounted flush with a finished surface at no more than six inches (6") in height above that surface.

**GEOTHERMAL ENERGY SYSTEM:** A sealed, watertight loop of pipe buried outside of a building foundation, intended to recirculate a liquid solution through a heat exchanger. This includes, but is not limited to: vertical closed loop, horizontal closed loop and body of water closed loop systems.

**GROUND MOUNTED SOLAR ENERGY SYSTEM:** A solar energy system that is not attached to another structure and is ground mounted.

**PHOTOVOLTAIC CELL:** A semiconductor device that converts solar energy into electricity.

**SOLAR ENERGY SYSTEM:** A system for which the primary purpose is to convert solar energy into thermal, mechanical or electrical energy for storage and use. Solar energy systems include building mounted solar energy systems (building integrated and flush mounted), ground mounted solar energy systems, and utility solar energy systems.

**SOLAR PANEL:** A group of photovoltaic cells assembled on a panel or thermal collectors for air and water heating. Panels are assembled on site into solar arrays.

**UTILITY SOLAR ENERGY SYSTEM:** A solar energy system that is used in order to produce energy for commercial distribution. (Ord. 2010-834, 12-7-2010)

### 10-13-4: SOLAR ENERGY SYSTEMS:

- A. Compliance With Regulations: Solar energy systems must comply with all applicable requirements of this chapter, as well as all federal, state, county, and village laws, ordinances, and regulations. No solar energy system shall be constructed or installed without first filing an application for and being issued a permit in accordance with this chapter and the building code.
- B. Application Requirements: An application for a permit for a solar energy system must contain, at a minimum, the following information:
1. Name, address and telephone number of the applicant.
  2. Name, address and telephone number of the person, firm or corporation constructing and installing the solar energy system.
  3. Elevation drawings (and/or photographs) and site plans showing the location, size and design details of the proposed solar energy system.
  4. Manufacturer specifications of the solar collectors and devices including: wattage capacity, dimensions of collectors, mounting mechanisms and/or foundation details and structural requirements.
  5. A certificate of compliance demonstrating that the proposed solar energy system conforms to applicable industry standards including those of the American National Standards Institute (ANSI).
  6. A certificate of compliance demonstrating that the solar energy system has been tested and approved by Underwriters Laboratories (UL) or other approved independent testing agency.
  7. For ground mounted and utility solar energy systems, a property alteration permit for said installation.
  8. Any other information to show full compliance with this chapter and other applicable ordinances.
  9. For ground mounted and utility solar energy systems only, the applicant shall also submit scaled site plan drawings that include the following information:
    - a. Existing and proposed contours, at a minimum of two foot (2') intervals.
    - b. Location, setbacks, exterior dimensions and square footage of all existing and proposed structures.
    - c. Location and size of existing waterways, wetlands, 100-year floodplains, sanitary sewers, storm sewers, drain tiles and water distribution systems.
    - d. Location of any overhead or underground utilities and easements.
- C. Requirements For Building Mounted Solar Energy Systems (Including Building Integrated And Flush Mounted Solar Energy Systems):
1. Use: The primary purpose of a building mounted solar energy system is to produce energy to support the permitted uses on the lot; provided, however, that excess energy produced by a building mounted solar energy system may be sold to the local electric utility company.
  2. Location: Building mounted solar energy systems are allowed on permitted principal and accessory structures in any zoning district in the village.
  3. Setback: Building mounted solar energy systems shall comply with the setback regulations of the applicable zoning district. In addition, building mounted solar energy systems shall not extend beyond the roofline of the building on which the system is mounted or built. Only building integrated or flush mounted solar energy systems may be installed on any street yard building elevation.
  4. Height: A building mounted solar energy system shall not extend more than five feet (5') above the highest point on the roofline of the building on which it is mounted and, in no event shall the building mounted solar energy system exceed the maximum allowable height for the building on which it is mounted, as measured vertically from the lowest edge of the panel to the highest edge of the system.
- D. Requirements For Ground Mounted Solar Energy Systems:
1. Use: The primary purpose of a ground mounted solar energy system is to produce energy to support the permitted uses on the lot; provided, however, that excess energy produced by a ground mounted solar energy system may be sold to the local electric utility company.

2. Location: Ground mounted solar energy systems are allowed in any zoning district in the village.
3. Setback: Ground mounted solar energy systems shall comply with the setback regulations of the applicable zoning district. No ground mounted solar energy system shall be located in any front or corner side yard in a residential zoning district.
4. Height: A ground mounted solar energy system shall not exceed the maximum allowable height for accessory structures in the applicable zoning district, as measured from adjoining grade at the base of the ground mounted solar energy system to the highest elevation of the ground mounted solar energy system.
5. Lot Coverage: The total solar panel surface area shall be included in calculating the maximum allowable lot coverage under the applicable zoning district regulations.

#### E. Requirements For Utility Solar Energy Systems:

1. Use: The primary purpose of a utility solar energy system shall be to produce energy for commercial distribution. A utility solar energy system shall be classified as a principal use on a lot.
2. Location: Utility solar energy systems are only allowed on lots zoned in the LI, LI-1 and LI-2 zoning districts, subject to issuance of a conditional use permit. Utility solar energy systems are not permitted on lots in any other village zoning district.
3. Setback: Utility solar energy systems shall comply with the setback regulations of the applicable zoning district.
4. Height: A utility solar energy system shall not exceed twenty feet (20') in height, as measured from adjoining grade at the base of the utility solar energy system to the highest elevation of the utility solar energy system.
5. Lot Coverage: The total solar panel surface area shall be included in calculating the maximum allowable lot coverage under the applicable zoning district regulations.
6. Fencing Required: Utility solar energy systems shall be enclosed with a fence that restricts direct access to the public. Such fencing shall, at a minimum, encompass the entire systems facility, contain a locking mechanism, and comply with the village's fence regulations. The fencing requirement may be waived at the sole discretion of the zoning administrator if it is determined that such fencing would result in reduced security or is not necessary. (Ord. 2010-834, 12-7-2010)

### **10-13-5: GEOTHERMAL ENERGY SYSTEMS:**

- A. Compliance With Regulations: Geothermal energy systems must comply with all applicable requirements of this chapter, as well as all federal, state, county, and village laws, ordinances, and regulations. No geothermal energy system shall be constructed or installed without first filing an application for and being issued a permit as required by this chapter and the building code.
- B. Application Requirements: An application for permit for all geothermal energy systems shall contain the following information:
1. Name, address and telephone number of the applicant.
  2. Name, address and telephone number of the person, firm or corporation installing and constructing the geothermal energy system.
  3. Project summary including site plan and manufacturer information with specifications of materials and devices.
  4. A certificate of compliance demonstrating that the proposed geothermal energy system conforms to applicable industry standards including those of the American National Standards Institute (ANSI).
  5. A certificate of compliance demonstrating that the geothermal energy system has been tested and approved by Underwriters Laboratories (UL) or other approved independent testing agency.
  6. A property alteration permit issued by the Lake County health department for said installation.
  7. Any other information to show full compliance with this chapter and other applicable ordinances.
- C. Requirements For Geothermal Energy Systems:
1. Use: The primary purpose of a geothermal energy system is to produce energy to support the permitted uses on the lot.
  2. Location: Geothermal energy systems are allowed in any zoning district in the village.

3. Setback: Aboveground equipment or facilities related to a geothermal energy system shall comply with the setback regulations of the applicable zoning district. No equipment, piping, or facilities related to a geothermal energy system shall be located in any easement or right of way. (Ord. 2010-834, 12-7-2010)