

## ARTICLE 23A. SOLAR ENERGY SYSTEMS

**23A-1. Purpose.** The purpose of this Article 23A is to establish reasonable and uniform regulations for the location, installation, operation and maintenance of Solar Energy Systems; to assure that any development and production of Solar Energy Systems is safe and to minimize any potentially adverse effects on the community; to promote the supply of sustainable and renewable energy resources, in support of national, state and local goals; and to facilitate energy cost savings and economic opportunities for residents and businesses situated within the City of Effingham, Illinois.

**23A-2. Small Solar Energy System—General Regulations.** Small Solar Energy Systems may be erected or installed in accordance with this Article 23A, as well as all applicable City, County, State and Federal laws and regulations, as amended from time to time, concerning the use and operation of said Small Solar Energy System, and shall be further subject to the following standards:

- a) Except as authorized by the City Council for public utility and/or public infrastructure purposes, Small Solar Energy Systems shall only be permitted if accessory to a principal building and/or principal use.
- b) Any person seeking to erect, construct, install, or maintain a Small Solar Energy System on property located within the corporate limits and/or extraterritorial jurisdiction of the City of Effingham, Illinois, shall obtain such Building Permit, Electrical Permit and/or Zoning/Subdivision Certificate as applicable prior to installation. The person seeking to erect, construct, install, or maintain a Small Solar Energy System shall also submit a written narrative and/or graphic form, which includes all of the items listed below:
  1. Name, address, and telephone number of property owner and leaseholder, if applicable;
  2. Name, address, and telephone number of the installer of the Small Solar Energy System;
  3. Description of the proposed Small Solar Energy System indicating the following:
    - i. Plan showing the proposed location of the Small Solar Energy System;
    - ii. System dimensions and specifications;
    - iii. Evidence showing compliance with all applicable setback requirements;
    - iv. Evidence showing compliance with applicable setback and/or height regulations;
    - v. Distance to any roads or overhead utility lines; and,
    - vi. Compliance with each regulation contained in this Article 23A-2;
  4. A professional engineer, licensed in the State of Illinois, shall stamp all plans and specifications for the proposed Small Solar Energy System; and,
  5. Utility Notification: A copy of the notification to the utility company of the intent to install an interconnected customer-owned solar energy system shall be provided. Off-grid systems are exempt from this requirement.
- c) For systems installed within the City of Effingham, the City of Effingham Fire Department, Fire Prevention Bureau shall review the application to verify that adequate roof access will be allowed for emergency personnel in the case of an emergency.
- d) Small Solar Energy Systems shall be installed according to manufacturer specifications and in accordance with all applicable building codes, electrical codes, fire codes, and other ordinances, codes, rules, and regulations pertaining to Small Solar Energy Systems.
- e) Electric solar energy system components must have a UL listing.
- f) All Small Solar Energy Systems shall have a lockable, utility accessible, load breaking, manual disconnect switch, which can be utilized to connect and/or disconnect all electric solar energy system components. The manual disconnect switch shall be located not more than four (4) feet from the building's Electric Service Meter. The manual disconnect switch shall not be obstructed from access in any manner, including, but not limited to, landscaping, shrubs, trees, terraces, fencing, etc.
- g) All Small Solar Energy Systems shall have the following caution labels installed and/or placed on said Small Solar Energy System:
  1. A "Caution Solar Electric System" label shall be installed and/or placed adjacent to the manual disconnect switch;
  2. "Caution Solar Circuit" directional labels shall be placed on any and all DC raceways and equipment and shall depict the direction of the electrical flow inside said raceway and/or other equipment. Said "Caution Solar Circuit" directional labels shall be located and spaced out not more than every ten (10) feet along said raceway; and,
  3. All caution labels shall be weather resistant and reflective, with a red background and white lettering with a minimum of 3/8 inch lettering.
- h) Reflection angles from Solar Collector surfaces shall be oriented away from residential buildings.
- i) Type Permitted and Maximum Area
  1. Building Integrated Solar Energy Systems and/or Flush Mounted Solar Energy Systems are permitted to be installed on any roof area;
  2. Non-Flush Mounted Solar Energy Systems are permitted on a flat roof if the Solar Collector is completely screened from view to an observer five (5) feet above the ground at any point along an abutting property line;
  3. Non-Flush Mounted Solar Energy Systems are prohibited on any roof that is adjacent to the front yard and both front yards on a corner lot;
  4. The Solar Collector Surface area shall not cover more than 60% of the portion of the roof area upon which the Solar Collectors are mounted, and shall be set back on the roof as follows:
    - i. Set back from the roof lower eaves a minimum of four (4) feet;
    - ii. Set back from the roof top edge (ridge) a minimum of four (4) feet;
    - iii. Set back from the side rake a minimum of four (4) feet; and,
    - iv. Set back from any roof equipment and/or other obstructions (examples: skylights, chimneys, exhaust fans, vents, etc.) a minimum of four (4) feet;
    - v. For systems installed within the City of Effingham, the City of Effingham Fire Chief or his designee shall have the authority to reduce the required roof set back in this Section 4.
  5. A roof mounted Solar Collector with a surface area greater than 60% of the entire roof area, requires a Variance per Article 29 of this Appendix B;
  6. Ground Mounted Small Solar Energy Systems are allowed as an accessory use in any Zoning District except any R District or a PRD, Planned Residence District and shall not be placed in any front yard or within the side and/or rear yard setbacks. A Variance per Article 29 of this Appendix B is required if a Solar Collector Surface Area:
    - i. is greater than 60% of the roof area of the principal building(s), or
    - ii. greater than 50,000 square feet but does not exceed 100,000 square feet if the parcel is larger than 5 acres.
  7. Ground Mounted Small Solar Energy Systems with a Solar Collector Surface greater than 100,000 square feet are only allowed in a NU, Non-Urban District, M-1, Light Industrial District, or M-2, Heavy Industrial District with a Special Use Permit in accordance with Article 23A-3;
  8. Ground Mounted Small Solar Energy Systems are not permitted in any R District or PRD, Planned Residence District; and,
  9. Ground Mounted Small Solar Energy Systems shall be enclosed with a chain link fence eight (8) feet in height, except a fence visible from a public road or adjacent to an R District or a PRD, Planned Residence District shall be a solid pvc/vinyl or wood stockade style fence.

j) Maximum Permitted Height & Building Projection/Extension:

1. Flush Mounted Solar Energy Systems shall conform to the height regulations of the zoning district of the property where the Small Solar Energy System is to be installed, mounted, built or located;
2. Non-Flush Mounted Solar Energy Systems shall not extend above the highest point on the roof line or a parapet wall;
3. Small Solar Energy Systems shall not project/extend beyond the exterior wall of any building on which said Small Solar Energy System has been installed, mounted, or built;
4. Ground Mounted Solar Energy Systems meeting all the requirements of a Small Solar Energy System as defined in Article 1 and this Article 23A-2 shall not exceed twenty (20) feet in height; and,
5. Ground Mounted Small Solar Energy Systems are not permitted in any R District or PRD, Planned Residence District.

k) Self-Contained Solar Energy Systems: The provisions of this Article 23A-2 shall not apply to a Self-Contained Solar Energy System in Article 1 of this Appendix B, provided, however, that a Self-Contained Solar Energy System(s) shall be limited to an aggregate Solar Collector Surface area of less than or equal to 6 square feet.

l) Record Drawings and Certification: Upon completion of the installation and construction of the Solar Energy System, a set of as-built drawings shall be provided and shall include a Certification signed by the owner of the system and signed and sealed by the engineer, certifying all installation and construction conform to the plans, specification and requirements noting any exceptions or deviations.

**23A-3. Large Solar Energy Systems – General Requirements.** Large Solar Energy Systems may be erected or installed in accordance with this Article 23A Solar Energy Systems, Article 26 Special Use Regulations as well as all applicable City, County, State and Federal laws and regulations, as amended from time to time, concerning the use and operation of said Large Solar Energy System, and shall be further subject to the following:

a) General Requirements

1. May be the principal use of a property;
2. May only be a Ground Mounted Solar Energy System;
3. The site shall be enclosed with a chain link fence eight (8) feet in height;
4. Zoning Districts, Maximum Area and Height:
  - i. Permitted only on properties zoned NU, Non-Urban District, M-1, Light Industrial District, or M-2, Heavy Industrial District with a Special Use Permit per paragraph 43 of Article 26-1;
  - ii. Shall be located on a lot, parcel or tract of not less than ten (10) acres;
  - iii. Solar collectors and components, aboveground improvements and outside storage shall be setback from all property lines a minimum of fifty (50) feet and when the site is adjacent to a residential building, an R (residential) District or PRD, Planned Residence District, the setback shall be a minimum of 150 feet; and,
  - iv. Solar collectors and components, aboveground improvements and outside storage shall not exceed twenty-five (25) feet in height.
5. A Type B Buffer per Appendix B is required when the site is adjacent to a residential building, an R (residential) District or PRD, Planned Residence District except the fence shall be solid pvc/vinyl or wood stockade style and shall be eight (8) feet in height.
6. A Large Solar Energy System shall be installed according to manufacturer specifications and in accordance with all applicable building codes, electrical codes, fire codes, and other ordinances, codes, rules, and in addition to the regulations pertaining to Solar Energy Systems.
7. Any equipment necessary to the regulation, storage or control of electricity shall be enclosed in a building or structure, unless otherwise required to be exposed to view for purposes of compliance with applicable code provisions or by interconnection or metering requirements imposed by any public utility.
8. Cleaning chemicals and solvents used during the operation or maintenance of the Large Solar Energy System facility shall consist of biodegradable products and shall be low in volatile organic compounds.
9. Any change to equipment and/or increase in overall peak electrical capacity shall require a revised or amended special use permit if the cumulative increase in overall peak electrical capacity or number of solar collectors as compared to the original amount is greater than 20 percent.
10. If the Large Solar Energy System is out of service or not producing electrical energy for a period of 90 days, the City shall provide Notice to operator/owner [that] the facility is deemed nonoperational and in violation of the Special Use Permit. And further, decommissioning and removal of the facility shall commence according to the decommissioning plan and completed within six (6) months of the Notice.
11. If the Large Solar Energy System operator/owner fails to proceed with decommissioning, the City, upon providing proper Notice to the operator, owner and the bonding company, shall commence the decommissioning work with proceeds from the bond.

b) Special Use Permit/Site Plan Requirements. Any person seeking to erect, construct, install, or maintain a Large Solar Energy System or a Small Solar Energy System larger than 100,000 square feet (**23A-2.i.7**) on property located within the corporate limits and/or extraterritorial jurisdiction of the City of Effingham, Illinois, shall obtain a Special Use Permit per paragraph 43 of Article 26-1 prior to the installation of a Large Solar Energy System. As part of the Special Use Permit application, a person seeking to erect, construct, install, or maintain a Large Solar Energy System shall submit a Site Plan per Article 27-2, Drainage Study per Article 27-5, General Requirements in Article 23A-3.a) and the requirements listed below:

1. Application fee of \$500 payable at the time of application;
2. Name, address, and telephone number of the property owner if not the Large Solar Energy System operator/owner;
3. Name, address, and telephone number of Large Solar Energy System operator/owner;
4. Copy of the rental or lease agreement if the operator/owner of the Large Solar Energy System is not the owner of the property;
5. Name, address, and telephone number of the utility company and draft of the electric utility interconnection agreement;
6. Boundary and legal description of the real estate for the Large Solar Energy System. Boundary lines shall be labelled with distance and direction;
7. Power Transmission Plan which details the point where electricity generated on the site connects to electric utility lines/facilities (and any related easements);
8. System layout including size and height of panels, buildings and structures;
9. Dimensions showing distances from solar system components to property lines, lease lines, between buildings and buildings on adjacent real estate;
10. If any portion of the proposed site is within 1000 feet of the Effingham County Memorial Airport, any other airport, or is located within an identified Runway Protection Zone (RPZ), a Solar Glare Hazard Analysis Tool (SGHAT) report consistent with the FAA's then-current policy on solar energy projects is required. The report along with the site plan shall be submitted to the FAA, IDOT Division of Aeronautics, Airport Board or airport owner for review and comment;
11. Certification that reflection angles, for both fixed position and pivoting solar collectors and taking into account seasonal changes to sun angles, are oriented such that they do not direct glare toward residential areas;

12. Vegetation and weed control plan, which includes details of landscaping and how frequently the site will be mowed, shall be provided that protects against the creation of a prey habitat and/or negative aesthetic impacts;
  13. Draft copy of the Agricultural Impact Mitigation Agreement ("AIMA") with the Illinois Department of Agriculture;
  14. Draft Decommissioning Plan for the facility. The Decommissioning Plan shall be updated every ten years from the date of approval and submitted to the City. The Decommissioning Plan shall include and provide the following:
    - i. Removal of all solar collectors and components, aboveground improvements and outside storage;
    - ii. Foundations, pads and underground electrical wires and reclaim the site to a depth of four feet below the surface of the ground;
    - iii. Removal of any hazardous material from the property and disposal of the same in accordance with federal and state law;
    - iv. A restoration plan for the site;
    - v. A cost estimate for the decommissioning of the facility prepared by a professional engineer or contractor who has expertise in the removal of a Large Solar Energy System. The decommissioning cost estimate shall explicitly detail the cost before any projected salvage value of any equipment or other salvageable items;
    - vi. An authorization allowing the City to enter the property for the purpose of decommissioning the facility if the operator/owner refuses or is unable to complete the decommissioning; 15. A professional engineer, licensed in the State of Illinois, shall stamp the site plan and all plans and specifications for the proposed Large Solar Energy System.
- c) Building Permit, Electrical Permit and/or Zoning/Subdivision Certificate. Required prior to commencement of construction.
1. Electrical Permit Fee (in City Limits) shall be in accordance with established Permit Fees except the minimum fee shall be \$250. Building Permit Fee (if applicable and in City Limits) shall be \$250. In the extraterritorial jurisdiction of the City of Effingham, a Zoning/Subdivision Certificate is required but with no fee.
  2. Copy of the approved site plan, signed and sealed by the engineer, as approved by the Plan Commission. All conditions of approval, if any, shall be addressed.
  3. The following items shall be submitted with the application:
    - i. Certificate of Insurance - general liability policy covering bodily injury and property damage and name the City of Effingham as an additional insured, on a primary non-contributory basis, with limits of at least \$3,000,000.00 per occurrence and \$5,000,000.00 in the aggregate with a deductible of no more than \$5,000.00;
    - ii. Certification [of] the Large Solar Energy System conforms to industry standards and complies with all applicable codes for the electrical, mechanical and structural components of the facility. All documents provided shall be stamped and signed by a professional engineer. All solar collection system panels shall be certified by the Solar Collector and Certification Corporation (SRCC);
    - iii. Certification: all components have a UL listing and solar panels are designed with an antireflective coating;
    - iv. Comments on the Solar Glare Hazard Analysis Tool (SGHAT) report by the FAA, IDOT Division of Aeronautics, Airport Board or airport owner;
    - v. An Environmental Impact Study with consultation with both the Illinois Historic Preservation Agency (IHPA) and the Illinois Department of Natural Resources (IDNR). This may be through the online Eco Cat Program or equivalent review process;
    - vi. Final Agricultural Impact Mitigation Agreement ("AIMA") with the Illinois Department of Agriculture;
    - vii. Final Decommissioning Plan as approved by the Director of Public Works or their designee including the following:
      - a. A cash deposit, surety bond or irrevocable letter of credit to the City from the operator/owner of Large Solar Energy System for the full cost of decommissioning; and,
      - b. An authorization allowing the City to enter the property for the purpose of decommissioning the facility if the operator/owner refuses or is unable to complete the decommissioning.
  4. Safety Review and Safety Requirements: The application shall be reviewed by City of Effingham personnel and personnel of appropriate local government entities having jurisdiction to verify that the applicable requirements for general safety, adequate access for emergency personnel, Fire and Life Safety Code requirements, including, but not limited to, applicable code(s) for proper electrical grounding and bonding and other appropriate safety measures are included with the system;
    - i. The System shall have a lockable, utility accessible, load breaking, manual disconnect switch, which can be utilized to connect and/or disconnect all electric solar energy system components. The manual disconnect switch shall be located not more than four (4) feet from the Electric Service Meter. The manual disconnect switch shall not be obstructed from access in any manner, including, but not limited to, landscaping, shrubs, trees, terraces, fencing, etc;
    - ii. Shall have caution labels installed and/or placed in the following locations at a Large Solar Energy System facility:
      - a. A "Caution Solar Electric System" label shall be installed and/or placed adjacent to the manual disconnect switch;
      - b. "Caution Solar Electric System" signs shall be installed and/or placed at all entry points to the facility;
      - c. "Caution Solar Circuit" directional labels shall be placed on any and all DC raceways and equipment and shall depict the direction of the electrical flow inside said raceway and/or other equipment. Said "Caution Solar Circuit" directional labels shall be located and spaced out not more than every ten (10) feet along said raceway; and,
      - d. All caution labels shall be weather resistant and reflective, with a red background and white lettering with a minimum of 3/8 inch lettering.
- d) Record Drawings and Certification: Upon completion of the installation and construction of the Solar Energy System, a set of as-built drawings shall be provided and shall include a Certification signed by the owner of the system and signed and sealed by the engineer, certifying all installation and construction conform to the plans and specifications, approved site plan, permits and requirements noting any exceptions or deviations.