

**RAISIN CHARTER TOWNSHIP  
LENAWEE COUNTY, MICHIGAN  
ARTICLE 10  
SPECIAL LAND USE**

**SECTION 10.70.27 SOLAR FARMS**

**A. PURPOSE:** To provide for the land development, installation and construction regulations for large photovoltaic solar farm facilities subject to reasonable conditions that will protect the public health, safety and welfare. These regulations establish minimum requirements and standards for the placement, construction and modification of large photovoltaic solar farm facilities.

This Article is intended to:

1. Protect Township areas from any potentially adverse effects, such as visual or noise impacts, of solar farm facilities, and related structures or devices so that the public health, safety, and welfare will not be jeopardized.
2. Provide for a land use that will provide an energy source with low associated environmental impacts.
3. Provide for the removal of abandoned or noncompliant solar farm facilities, and related structure or devices.
4. Allow as a Special Land Use for solar farm facilities, and related structures or devices in the Township districts zoned for Agricultural (A-1) and Industrial (I-1).

**B. DEFINITIONS:** In addition to Ordinance Article II definitions, the following terms and phrases shall have the meanings set forth below:

**AC Power (Alternating Current):** An electrical current whose magnitude and direction varies. It is considered the “standard” electrical power.

**Attached System:** A solar system in which solar panels are mounted directly on the building, typically the roof.

**DC Power (Direct Current):** An electrical current whose magnitude and direction stay constant. The photovoltaic cells on solar panels capture energy from sunlight in the form of DC and must be converted to AC by an inverter.

**Detached Systems:** Also known as a Ground Mounted Systems or Freestanding, a solar system that is not attached directly to a building, but is supported by a structure that is built on the ground.

**Distributed Generation:** As opposed to centralized generation, distributed generation refers to a number of small power-generating modules located at or near the point of energy consumption.

**Gigawatt:** A unit of power equal to one billion watts.

**Grid:** The infrastructure of power lines, transformers and substations that delivers electric power to buildings. The utility grid is owned and managed by electric utility companies.

**Installer:** A contractor that installs solar systems.

**Interconnection:** A link between utility company power distribution and local power generation that enables power to move in either direction.

**Inverter:** A device that converts DC power captured by the photovoltaic cells on solar panels into AC power.

**Kilowatt:** A unit of power equal to one thousand watts.

**Megawatt:** A unit of power equal to one million watts.

**Net Metering:** A policy whereby utility customers with small-scale renewable power sources, including solar, receive credit from their utility provider for electricity generated in excess of their needs (also known as “net excess generation”).

**On/Off Grid System:** A solar energy system that is interconnected with the utility grid is an on-grid or grid-tied system, while a system not interconnected is an off-grid system.

**Permitting:** The process by which a local unit of government allows for certain development, changes, and activities in their jurisdiction.

**Photovoltaic (PV):** A method of generating electrical power by converting solar radiation (sunlight) into direct current electricity using semiconductors.

**Solar Collection Devices-General:** Solar collection devices are designed to capture and utilize the energy of the sun to generate electrical power. A solar collection device is the actual material(s) used to collect solar rays and all associated ancillary and structural devices needed to support and convert/transmit the energy collected. These devices may be either freestanding or attached to a structure and are sized to meet the various user needs and/or utility requirements.

**Solar Collection Devices-Small Freestanding:** An array of freestanding (not attached to a principal or accessory structure) solar collection materials that have a manufacturer’s rating up to but not exceeding 20kW.

**Solar Collection Devices-Medium Freestanding:** An array of freestanding (not attached to a principal or accessory structure) solar collection materials that have a manufacturer’s rating of greater than 20kW, but do not occupy more than 10 acres of land.

**Solar Collection Devices-Large Freestanding:** An array of freestanding (not attached to a principal or accessory structure) utility-scale solar collection materials that have a manufacturer’s rating of greater than 20kW and occupy more than 10 acres of land.

**Solar Farms (Large Photovoltaic Solar Farm Facilities):** A utility-scale commercial facility that converts sunlight into electricity, whether by photovoltaics, or any other various solar technologies for the primary purpose of wholesale or retail sales of generated electricity off-site.

Solar Farms do not include small scale solar panels or technologies installed at individual residential or commercial locations (e.g. roof or ground mounted panels) that are used exclusively for private purposes and not utilized for any commercial resale of any energy, except for the sale of surplus electrical energy back to the electrical grid. These installations are permitted as Accessory Structures or Uses.

**Solar Photovoltaic System:** The total components and subsystems that, in combination, convert solar energy suitable for connection to utilization load.

**Time-of-Use (TOU) Rates:** A utility billing system in which the price of electricity depends upon the hour of day at which it is used. Rates are higher during the afternoon when electric demand is at its peak. Rates are lower during the night when electric demand is off peak.

### C. REQUIREMENTS FOR DEVELOPMENT AND DESIGN STANDARDS

1. **Site Plan:** In addition to those requirements of Article IX, Section 9.90 of the Zoning Ordinance, and the Site Plan Review Application, all applications for a special land use permit for a Solar Farm shall be subject to Special Land Use standards in Agricultural (A-1) and Industrial (I-1) zoned areas.
2. **Minimum Lot Size:** Large photovoltaic solar farm facilities shall not be constructed on parcels less than twenty (20) acres in size.
3. **Height Restrictions:** All photovoltaic panels located in a solar farm shall be restricted to a height of fourteen (14) feet.
4. **Setbacks:** All photovoltaic solar panels and support structures associated with such facilities (excluding perimeter security fencing) shall be a minimum of fifteen (15) feet from a side or rear property line and a minimum of thirty (30) feet from any road or highway right-of-way.
5. **Maximum Lot Coverage:** Maximum lot coverage restrictions shall not apply to photovoltaic solar panels. Any other regulated structures on the parcel are subject to maximum lot coverage restrictions.
6. **Safety/Access:** A security fence (height and material to be established through the special land use permit process) shall be placed around the perimeter of the solar power plant and electrical equipment shall be locked. Knox boxes and keys shall be provided at locked entrances for emergency personnel access. Electric fencing is not permitted.
7. **Sound Pressure Level:** No large photovoltaic solar farm facilities shall exceed sixty-five (65) dBA as measured at the property line.

8. **Landscaping:** The perimeter of large photovoltaic solar farm facilities shall also be screened and buffered by installed evergreen or native vegetative plantings whenever existing natural vegetation does not otherwise reasonably obscure the large photovoltaic solar farm facilities from any public street and/or adjacent residential structures, subject to the following requirements:
  - a. The large photovoltaic solar farm facilities shall be exempt from the landscape requirements of Article 9, Section 9.80.
  - b. The evergreen or native vegetative buffer shall be composed of native or evergreen trees that at planting shall be minimum of four (4) feet in height and shrubs two (2) feet in height. The evergreen trees shall be spaced no more than fifteen (15) feet apart on center (from the central trunk of one plant to the central trunk of the next plant), native trees shall be placed no more than thirty (30) feet apart on center and shrubs shall be spaced no more than seven (7) feet apart on center. All unhealthy (sixty (60) percent dead or greater) and dead material shall be replaced by the applicant within one (1) year, or the next appropriate planting period, whichever occurs first.
  - c. All plant materials shall be installed between March 15 and November 15. If the applicant requests a final certificate of occupancy from the Township and the applicant is unable to plant during the installation period, the applicant will provide the Township with a letter of credit, surety or corporate guarantee for an amount equal to one and one-half (1.5) times the cost of any planting deficiencies that the Township shall hold until the next planting season. After all plantings have occurred, the Township shall return the financial guarantee.
  - d. Failure to install or continuously maintain the required vegetative buffer shall constitute a violation of this Ordinance and any Special Land Use Permit may be subject to revocation.
9. **Local, State and Federal Permits:** Large photovoltaic solar farm facilities shall be required to obtain all necessary permits from the U.S. Government, State of Michigan, and Raisin Charter Township, and comply with standards of the State of Michigan adopted codes.
10. **Electrical Interconnections:** All electrical interconnection or distribution lines shall comply with all applicable codes and standard commercial large-scale utility requirements. Use of above ground transmission lines shall be prohibited within the site.
11. **Signage:** No advertising or non-project related graphics shall be on any part of the solar arrays or other components of the large photovoltaic solar farm facilities. This exclusion does not apply to entrance gate signage or notifications containing points of contact or any and all other information that may be required by authorities having jurisdiction for electrical operations and the safety and welfare of the public.
12. **Abandonment and Decommissioning:** Following the operational life of the project, the applicant shall perform decommissioning and removal of the large photovoltaic solar farm facilities and all its components. The applicant shall prepare a decommissioning plan and submit it to the Planning Commission for review and approval prior to issuance of the Special Land Use Permit.

The decommissioning plan shall state how the large photovoltaic solar farm facilities will be decommissioned, provide the estimated cost of decommissioning, the financial resources to be used to accomplish decommissioning, and the escrow agent with which the resources will be deposited. Any large photovoltaic solar farm facilities that are not operated for a continuous period of twelve (12) months shall be considered abandoned and shall be removed under the decommissioning plan.

Under this plan, all structures, concrete, piping, facilities, and other project related materials above grade and any structures up to three (3) feet below-grade shall be removed offsite for disposal. All access roads or driveways shall be removed, cleared, and graded by the applicant, unless the property owner(s) requests, in writing, a desire to maintain any access road or driveways. The Township or County will not be assumed to take ownership of any access road or driveways. The ground must be restored to its original topography or mutually agreed variation of the original topography within three hundred sixty-five (365) days of abandonment or decommissioning.

The decommissioning plan shall also include an agreement between the applicant and the Township that:

- A. Prior to the issuance of the permit, the applicant shall furnish to the Township a performance guarantee in an amount equal to or greater than the estimated cost of decommissioning. The guarantee shall be in the form of either a surety bond or cash deposit into an escrow account with an escrow agent acceptable to the Township.
  - B. The Township shall have access to the escrow account funds for the expressed purpose of completing decommissioning if decommissioning is not completed by the applicant within three hundred sixty-five (365) days of the end of project life or facility abandonment.
  - C. The Township is granted the right of entry onto the site, pursuant to reasonable notice, to effect or complete decommissioning.
  - D. The Township is granted the right to seek injunctive relief to effect or complete decommissioning, as well as the Township's right to seek reimbursement from applicant or applicant successor for decommissioning costs in excess of the amount deposited in escrow and to file a lien against any real estate owned by applicant or applicant's successor, or in which they have an interest, for the amount of the excess, and to take all steps allowed by law to enforce said lien. Financial provisions shall not exceed reasonable anticipated decommissioning costs.
13. **Inspection:** The Township shall have the right at any reasonable time, to provide same-day notice to the applicant to inspect the premises on which any large photovoltaic solar farm facilities is located. The Township may hire one or more consultants, with approval from the applicant (which shall not be unreasonably withheld), to assist with inspections at the applicant's or project owner's expense. Inspections must be coordinated with, and escorted by, the applicant's operations staff at the large photovoltaic solar farm facilities to ensure compliance with the Occupational Safety and Health Administration (OSHA), NESC and all other applicable safety guidelines.

14. **Maintenance and Repair:** Each large photovoltaic solar farm facility must be kept and maintained in good repair and condition at all times. If the Township Building Official determines that a large photovoltaic solar farm facility fails to meet the requirements of this ordinance and the Special Land Use Permit, or that it poses a safety hazard, the Building Official, or his or her designee, shall provide notice to the applicant of the safety hazard. If, after a reasonable cure period (not to exceed seven (7) days), the safety hazards are not corrected, the applicant shall immediately shut down the large photovoltaic solar facility and not operate, start or restart the large photovoltaic solar facility until the issues have been resolved. Applicant shall keep a maintenance log on the solar array(s), which shall be available for the Township's review within 48 hours of such request. Applicant shall keep all sites within the large photovoltaic solar farm facility neat, clean and free of refuse, waste or unsightly, hazardous or unsanitary conditions.
15. **Roads:** Any material damages to a public road located within the Township resulting from the construction, maintenance or operation of a large photovoltaic solar farm facility shall be repaired at the applicant's expense. In addition, the applicant shall submit to the appropriate State or County agency a description of the routes to be used by construction and delivery vehicles; and road improvements that will be necessary to accommodate construction vehicles, equipment or other deliveries. The applicant shall abide by all State or County requirements regarding the use and/or repair of the roads.

#### **D. ADDITIONAL SPECIAL LAND USE CRITERIA**

The following topics shall be addressed in a Special Land Use application for such large photovoltaic solar farm facilities in addition to Section C, Requirements for the Development and Design Standards.

1. **Project description and rationale:** Identify the type, size, rated power output, performance, safety and noise characteristics of the system, including the name and address of the manufacturer, and model. Identify time frame, project life, development phases, likely markets for the generated energy, and possibly future expansions.
2. **Analysis of onsite traffic:** Estimated construction jobs, estimated permanent jobs associated with the development.
3. **Visual impacts:** Review and demonstrate the visual impact using photos or renditions of the project or similar projects with consideration given to tree plantings given to tree plantings and setback requirements.
4. **Wildlife:** Review potential impact on wildlife on the site.
5. **Environmental analysis:** Identify impact analysis on the water quality and water supply in the area, and dust from project activities.
6. **Waste:** Identify solid waste or hazardous waste generated by the project.
7. **Lighting:** Provide lighting plans showing all lighting within the facility. No light may adversely affect adjacent parcels. All lighting must be shielded from adjoining parcels, and light poles are restricted to eighteen (18) feet in height.

8. **Transportation plan:** Provide access plan during construction and operation phases. Show proposed project service road ingress and egress access onto primary and secondary routes, layout of the plant service road system. Due to infrequent access to such facilities after construction is completed, it is not required to pave or curb solar panel access drives. It will be necessary to pave and curb driveway and parking lots used for occupied offices that are located on site.
  9. **Public safety:** Identify emergency and normal shutdown procedures. Identify potential hazards to adjacent properties, public roadways, and to the community in general that may be created.
  10. **Sound limitations and review:** Identify noise levels at the property line of the project boundary when completed.
  11. **Telecommunications interference:** Identify electromagnetic fields and communications interference generated by the project.
- E. SEVERABILITY:** The provisions of this Ordinance are hereby declared to be severable and if any provision, section or part of this Ordinance is declared invalid or unconstitutional by a court of competent jurisdiction, such decision shall only affect the particular provisions, section or part involved in such decision and shall not affect or invalidate the remainder of such Ordinance, which shall continue in full force and effect.
- F. EFFECTIVE DATE:** This Ordinance shall become effective fifteen (15) days after its publication following final adoption or as required by law.
- G. REPEAL:** All Ordinances or parts of Ordinances in conflict with this ordinance are hereby repealed.