

AURELIUS TOWNSHIP
INGHAM COUNTY
STATE OF MICHIGAN

ORDINANCE NO. .

ADOPTED: _____

EFFECTIVE: _____

AN ORDINANCE TO AMEND AURELIUS TOWNSHIP'S ZONING ORDINANCE, NO. , CHAPTER 16, ARTICLE IV, "SUPPLEMENTAL REGULATIONS" TO ADD SECTION 16-576 "SOLAR ENERGY SYSTEMS"; AND TO REPEAL ANY ORDINANCES IN CONFLICT THEREOF; AND TO PROVIDE AN EFFECTIVE DATE HEREOF.

The Township of Aurelius Board of Trustees, Ingham County, State of Michigan, ordains:

SECTION 16-576 SOLAR ENERGY SYSTEMS

- A. **PURPOSE:** To provide for the land development, installation and construction regulations for photovoltaic Solar Energy Systems (SES) 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 Private SES and Commercial SES/Solar Farm facilities.

This section is intended to:

1. Protect Township areas from any potentially adverse effects, such as visual or noise impacts, of Solar Energy Systems, 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 of Commercial SES/Solar Farm facilities, and related structure or devices.
4. Allow as a Special Land Use for Commercial SES/Solar Farm facilities, and related structures or devices in the Township districts zoned for Agricultural (A-1) and Agricultural (A-2) and Development District (D).
5. Prohibit Commercial SES/Solar Farm facilities where not expressly permitted.
6. Require an Escrow Account to reimburse the Township for costs connected to processing an application for a Special Use Permit and Site Plan.
7. Requires the Applicant to execute a Development Agreement with the Township Board of

Trustees after the Commercial SES Special Permit is approved but before construction of the Commercial SES begins.

B. 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, shall mean any solar energy system that is directly installed in the ground and is not attached or affixed to an existing structure.

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.

Person. Person means an individual, corporation, limited liability company, partnership, limited partnership, limited liability partnership, limited liability limited partnership, trust, or other legal entity.

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

Photovoltaic System: Photovoltaic (PV) Systems shall mean a solar energy system that produces electricity by the use of semiconductor devices, called photovoltaic cells that generate electricity whenever light strikes them to convert solar energy suitable for connection to utilization load.

Professional Engineer (licensed): A licensed professional engineer must meet all of the following: (a) at least 8 years of professional experience in engineering work acceptable to the board of professional engineers, including not more than 5 years of education, (b) completion of a baccalaureate degree in engineering from an accredited program or its equivalent, as determined by the board of professional engineers, (c) pass the engineering fundamentals and professional practice examinations or provide equivalent proof of qualification to practice professional engineering acceptable to the department and the board, and (d) be of good moral character.

Rooftop and Building-Mounted Solar System: Any solar power system in which solar panels are mounted on top of the structure of a roof either as a flush-mounted system or as modules fixed to frames which can be tilted toward the south at an optimal angle

Solar Energy System (SES): Any equipment necessary to the process by which solar radiation is collected, converted into another form of energy, stored, protected from unnecessary dissipation and distributed. Solar energy systems consist primarily of solar thermal, photovoltaic and concentrated solar but may include other various experimental solar technologies. These devices may be either freestanding or attached to a structure and are sized to meet the various user needs and/or utility requirements.

- a. **Commercial SES:** Also known as *Solar Farms*, means any SES facility and accessory structures or use that is designed and built to exclusively provide electricity to the electric utility's power grid and is not accessory to any other use. The Commercial SES is a principal use of property and may occupy the same property as another principal use, subject to a special land use permit.

Commercial SES/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.

- b. **Private SES:** Any SES that is accessory to a principal use located on the same lot, and is designed and built to serve the principal use. These systems shall not be utilized for any commercial sale of energy, except for the sale of surplus electrical energy back to the electrical grid. These installations are permitted as Accessory Structures or Uses.

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. **GENERAL STANDARDS:** The following standards shall apply to all Private SES and Commercial SES/Solar Farm unless otherwise specifically noted:

1. **Commercial SES/Solar Farms.** Commercial SES/Solar Farms are only permitted in Township districts zoned as Agricultural (A-1) and Agricultural (A-2) and Development District (D), subject to a special land use permit.
2. **Private SES.** Private SES is a permitted use in all Zoning Districts Classifications.
3. **Design Safety Certification.** The safety of the design of all Private and Commercial SES shall be certified by a licensed Professional Engineer acceptable to the Zoning Administrator. The standard for certification shall be included with the application for development.
4. **Electrical and Building Codes.** All electrical compartments, storage facilities, wire conduit, interconnections with utility companies and interconnections with private structures will conform to national and local electrical codes. All SES shall comply with local building permit requirements.
5. **Compliance with Township Ordinances.** Private SES and Commercial SES shall be in compliance with all Township Ordinance requirements and other applicable ordinances, rules and regulations.
6. **Site Plan:** In addition to those requirements of Chapter 16, Articles 11, and 111, of the Zoning Ordinance, and the Site Plan Review Application, all applications for a special land use permit for a Commercial SES/Solar Farm shall be subject to Special Land Use standards in Agricultural (A-1) and Agricultural (A-2) and Development District (D), except as where noted in this section. All applications must also include the following:
 - a. Equipment and unit renderings;
 - b. Elevation drawings;
 - c. Setbacks from property lines and adjacent structures, and height of proposed structures;
 - d. Notarized written permission from the property owner authorizing the Solar Energy System;
 - e. All additional plans and requirements set forth in this Section and the Planning Commission.
7. **Minimum Lot Size:**
 - a. Commercial SES/Solar Farm shall not be constructed on parcels less than twenty (20) acres in size.
 - b. Private SES shall not be constructed on parcels less than two (2) acres in size.

8. Height Restrictions:

- a. All photovoltaic panels located in a Commercial SES/Solar Farm shall be restricted to a height of maximum eighteen (18) feet measured from the natural grade below the unit to the highest point of the unit at full tilt.
- b. All photovoltaic panels located in a Private SES shall be restricted to a height of maximum twenty-three (23) feet measured from the natural grade below the unit to the highest point of the unit at full tilt.

9. Setbacks: All photovoltaic solar panels and support structures associated with such Commercial SES/Solar Farm (excluding perimeter security fencing) shall be a minimum of forty (40) feet from a side or rear property line, and a minimum of fifty (50) feet from any road right-of-way.

10. Maximum Lot Coverage: Maximum lot coverage restrictions shall not apply to Commercial SES/Solar Farm facilities. Private SES and any other regulated structures on the parcel are subject to maximum lot coverage restrictions.

11. Safety/Access: A six (6) foot in height security fence (construction materials to be established through the special land use permit process) shall be placed around the perimeter of the Commercial SES/Solar Farm photovoltaic solar panels, solar powerplant, 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.

12. Sound - Noise Level: The sound - noise generated from an SES shall not exceed forty (40) dB(A) at the exterior of any habitable structure, also measured at the closest property line to the SES. This sound pressure level may be exceeded during short-term events such as utility shortages or severe wind storm. If the ambient sound pressure level exceeds forty (40) dB(A), the standard shall be the ambient dB(A) plus five (5) dB(A).

13. Glare and reflection. SES facilities shall be located or placed so that concentrated solar glare shall not be directed toward or onto nearby properties or roadways at any time of the day or located so that sunlight or glare is reflected into neighboring dwellings or onto adjacent roadways or private roads.

14. Installation Certification. A licensed Professional Engineer shall certify that the construction and installation of the Commercial SES/Solar farm project meets or exceeds the manufacturer's construction and installation standards.

15. Fire Risk. All Private SES and Commercial SES/Solar Farm facilities must adhere to all applicable electrical codes and standards, remove fuel sources, such as vegetation, from the immediate vicinity of electrical equipment and connections.

16. Waste. All solid wastes, whether generated from supplies, equipment parts,

packaging, operation or maintenance of the Private SES or Commercial SES/Solar Farm facilities shall be removed from the site and disposed of in an appropriate manner. All hazardous waste generated by the operation and maintenance of the improvement shall be removed from the site immediately and disposed of in a manner consistent with all local, state, and federal rules and regulations.

17. Liability Insurance. The owner or operator of the Private SES or Commercial SES/Solar Farm shall maintain a current insurance policy with a bond rating acceptable to the Township to cover installation and operation. The amount of the policy shall be established as a condition of special use permit approval. For a Private SES accessory to a principal structure, proof of insurance with specific coverage for the SES shall satisfy this requirement.

18. Landscaping: The perimeter of a Commercial SES/Solar Farm facilities shall be screened and buffered by installed evergreen or native vegetative plantings whenever existing natural vegetation does not otherwise reasonably obscure the Commercial SES/Solar Farm facilities from any public street and/or adjacent, residential structures, subject to the following requirements:

- a. The Commercial SES/Solar Farm facilities shall be subject to the requirements of this Ordinance and exempt from the landscape requirements of Article VII. - Landscaping and Buffering and subject to the requirements of this section.
- 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.

19. Local, State and Federal Permits: All Private and Commercial SES/Solar Farm facilities shall be required to obtain all necessary permits from the U.S. Government, State of Michigan, and Aurelius Township, and comply with standards of the State of Michigan adopted codes.

20. 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.

21. Signage: No advertising or non-project related graphics shall be on any part of the solar arrays or other components of the Commercial SES/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.

22. Abandonment and Decommissioning: Commercial SES/Solar Farm facilities considered under this Section must contain a Decommissioning Plan acceptable to the Planning Commission to ensure that structures and appurtenances are properly decommissioned upon the end of their operational life, inoperability or improvement abandonment.

- a. A Decommissioning Plan shall be submitted for review and approval detailing the expected duration of the project, how the improvements will be decommissioned, a licensed Professional Engineer's estimated cost of decommissioning, the financial resources to be used to accomplish decommissioning, and the surety bond holder with which the financial resources shall be deposited. The estimated costs of decommissioning for the purposes of financial security shall include actual labor and materials, including attorney and professional service fees, permit fees and other fees necessary for decommissioning ("Actual Costs") and shall not use or incorporate the salvage value or other potential cost savings. The Applicant shall provide proof of financial security covering the actual costs of the Decommissioning Plan to the Planning Commission. Every three (3) years after Special Use Permit approval and Site Plan approval, whichever is later, the Applicant shall provide an updated estimate of the Actual Costs of the Decommissioning Plan to the Township, subject to the approval of the Planning Commission. The Applicant shall provide the Township proof of financial security covering the Actual Costs of the Decommissioning Plan to the Planning Commission. Failure to provide an updated actual cost estimate acceptable to the Planning Commission for the Decommissioning Plan shall be considered a violation of this Ordinance subject to enforcement as provided by law and may result in revocation of the Special Use Permit.
- b. Any Commercial SES/Solar Farm facility or any portion thereof, including but not limited to panels or accessory structures, that is not operated or found to be inoperable due to disrepair for a continuous period of twelve (12) months shall be considered abandoned. If it is found that a Commercial SES/Solar Farm is abandoned, the Planning Commission upon notice by the Aurelius Township Zoning Administrator, or their assign, shall provide written notice to the applicant/owner/operator of a hearing before the Planning Commission to hear evidence that the Commercial SES/Solar Farm

should not be decommissioned. Furthermore, it shall constitute abandonment or non-use of any portion of individual panels or accessory structures or any portion are no operated for twelve (12) consecutive months and necessitate decommissioning of said portion.

- c. If a Commercial SES/Solar Farm is repaired, a licensed Professional Engineer (hired at the expense of the owner or operator) shall certify the Commercial SES/Solar Farm's safety prior to the resumption of operation.
- d. Within ninety (90) days of the hearing where the Planning Commission has determined that a Commercial SES/Solar Farm is abandoned or inoperable, the owner/operator shall obtain a demolition permit to remove any Commercial SES/Solar Farm.
 - i. Failure to obtain a demolition permit within the 90-day period provided in this subsection shall be grounds for the Township to remove the Commercial SES/Solar Farm at the Owner's expense.
- e. Decommissioning shall include removal of all equipment associated with the Commercial SES/Solar Farm including all materials above and below ground, up to four (4) feet in depth. The site shall be restored to a condition that reflects the specific character of the site including topography, vegetation, soils, drainage, and any unique environmental features.
 - i. The restoration shall include: road repair and hazardous waste cleanup, if any, all regrading, soil stabilization, and re-vegetation necessary to return the subject property to a stable condition consistent with conditions existing prior to establishment of the Commercial SES/Solar Farm.
 - ii. The restoration process shall comply with all state, county, or local erosion control, soil stabilization and/or runoff requirements or ordinances and shall be completed within one (1) year.
 - iii. Extensions may be granted upon request to the Planning Commission prior to that expiration of the one (1) year requirement for completed decommissioning.
- f. The Decommissioning Plan shall also include an agreement between the applicant and the Township that includes, but is not limited to the following conditions: The financial resources for decommissioning shall be in the form of a surety bond with a replenishment obligation and shall be deposited by a bonding agent acceptable to Aurelius Township.
 - i. The financial resources for decommissioning shall be 125% of the estimated removal and restoration cost. The Planning Commission shall require independent verification of the adequacy of this amount from a licensed Professional Engineer.
 - ii. The Planning Commission shall annually review the amounts deposited for removal, site restoration, and administration costs are adequate for these purposes. If the Planning Commission

determines that these amounts are not adequate, the Township shall require the owner/operator to make additional deposits to increase the amount of the surety bond to cure such inadequacy.

- iii. The Township shall have access to the surety bond funds for the expressed purpose of completing decommissioning. If decommissioning is not completed by the applicant within one (1) year of the end of project life, inoperability of Commercial SES/Solar Farm facility or facility abandonment. Surety bond funds may be used for administrative fees and costs associated with decommissioning.
- iv. The Township is granted the right of entry onto the site, pursuant to reasonable notice, to effect or complete decommissioning.
- v. The Township is granted the right to file a municipal civil infraction for violation any provision of this ordinance and may obtain a order of compliance to compel compliance to the provisions of this ordinance, may seek injunctive relief to effect or complete decommissioning, as well as the Township's right to seek reimbursement from the applicant or applicant's successor for decommissioning costs in excess of the surety bond amount 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. The Township may take any other action as provided by law to enforce the provisions of this Ordinance. Any State regulatory compliance orders, Township obtained injunctions, or other court orders/orders of compliance shall not affect the time calculation of abandonment of non-operability as described herein.
- vi. An abandoned or inoperable Commercial SES/Solar Farm, as determined by the Planning Commission, is a nuisance per se. The Township may seek injunctive relief or other legal measures as provided by law against persons alleged to be in violation of this section, and such other relief as may be provided by law.

23. 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 Commercial SES/Solar Farm 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 Commercial SES/Solar Farm facilities to ensure compliance with the Occupational Safety and Health Administration (OSHA), NESC and all other applicable safety guidelines.

24. Maintenance and Repair: Each Commercial SES/Solar Farm facility must be kept and maintained in good repair and condition at all times. If the Township Building Official

determines that a Commercial SES/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 Commercial SES/Solar Farm facility and not operate, start or restart the Commercial SES/Solar Farm 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 Commercial SES/Solar Farm facility neat, clean and free of refuse, waste or unsightly, hazardous or unsanitary conditions.

Violation of this section is a nuisance per se. The Township may seek injunctive relief or other legal measures as provided by law against persons alleged to be in violation of this section, and such other relief as may be provided by law.

- 25. Roads:** Any material damages to a public road located within the Township resulting from the construction, maintenance or operation of a Commercial SES/Solar Farm facility shall be repaired at the applicant's or the Commercial SES/Solar Farm'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 Commercial SES/Solar Farm facilities in addition to Section C, General 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. **Escrow Fee Account:** An escrow account shall be deposited with the Township by the Applicant when the Applicant applies for a Special Land Use Permit for a Commercial SES. The monetary amount deposited by the Applicant in escrow with the Township shall be the amount of \$10,000, to cover all reasonable costs and expenses associated with the Special Use review and approval process, which costs shall include, but are not limited to, reasonable fees of the Township Attorney, Township Planner and Township Engineer, as well as costs for any reports or studies that are reasonably related to the zoning review process for the application. Such escrow amount shall be in addition to any filing or application fees established by resolution. At any point during the Special Use review process, the Township may require that the Applicant place additional funds into escrow with the Township if the existing escrow amount deposited by the Applicant is deemed insufficient by the Township. If the escrow account needs replenishing and the Applicant refuses to do so within thirty (30) days, the Special Use process shall cease unless and until the Applicant makes the required additional escrow deposit. Any applicable zoning escrow Resolutions or other Ordinances adopted by the Township must also be complied with by the Applicant. The Township shall provide a summary of all account activity to the Applicant within a timely manner upon request. Any funds remaining within the escrow after approval of the Conditional Use shall be returned in a timely manner to the Applicant.

G. **Development Agreement.** Approval of the Special Land Use Permit for a Commercial SES and approval of final Site Plan for a Commercial SES shall not be in effect until a Development Agreement is signed by the Township. The Applicant shall be required to execute a Development Agreement that is acceptable to the Aurelius Township Board of

Trustees if the Commercial SES application is approved. The Development Agreement with the Township is intended to incorporate the terms and conditions of final Site Plan approval, to ensure proper completion of the plan, which may include but not limited to the Township's oversight fees during construction, and record the same in the Office of the Register of Deeds for Ingham County.

- H. **REPEAL:** Any ordinances or parts thereof in conflict with the provisions of this Ordinance are hereby repealed to the extent of such conflict.
- I. **EFFECTIVE DATE:** This Ordinance shall become effective fifteen (15) days after its publication following final adoption or as required by law.

Larry Silsby, Supervisor

Tracy Ayres, Clerk

I, Tracy Ayres, Clerk of the Township of Aurelius, do hereby certify that the above is a true action taken by the Township Board of Trustees on the ____ day of ____ 2021.

Tracy Ayres, Clerk

