

ARTICLE 22

SOLAR ENERGY SYSTEMS

22.01 PURPOSE

The purpose of this Article is to establish standards and procedures by which the installment and operation of Solar Energy Systems and their components shall be governed. The goals of this Article are:

1. To promote safe, effective, and efficient use of Solar Energy Systems and their components.
2. To lessen potential adverse impacts which Solar Energy Systems and their components may have on areas within the Township and land uses, through careful design, siting, noise and environmental impact awareness.
3. To avoid potential injury and/or nuisance to the public and to adjacent properties.

22.02 DEFINITIONS

As used in this Article, the following terms shall have the meanings set forth below:

1. "Solar Energy System" ("SES"): Solar collectors, panels, controls, energy storage devices, heat pumps, heat exchangers, and/or other materials, hardware or equipment necessary or desirable to the process by which solar radiation/energy is collected, converted into another form of energy, stored, protected from unnecessary dissipation, and distributed. SESs include solar thermal, photovoltaic, and concentrated solar. This definition does not include small devices or equipment such as solar powered lawn or building lights which house both the solar energy generation system and the system which uses that energy to operate.
2. "Owner": This term shall apply to the following: The owner of the land upon which the SES is situated, the lessee of the land and the operator of the SES.

22.03 SES AND SES COMPONENT REQUIREMENTS

The requirements for all SESs and SES components (except where a stricter requirement is specified by this Ordinance) are as follows:

1. Roof mounted SES for personal use. Roof mounted SESs are allowed on buildings in any zoning district, as a permitted use. The total area of any such SES shall not exceed the area of the roof. SESs comprising a larger area on any building shall require site plan review by the Planning Commission, for approval. Roof mounted SESs shall not project past the peak of the roof and shall not exceed the maximum building height limitation. SES components shall not project beyond the eaves of the roof. Wall mounted SESs are prohibited.

2. Ground Mounted SES for personal use. Ground mounted SESs and SES components less than 1,000 square feet in total area per lot or parcel are allowed as a permitted use in any zoning district. Ground mounted SESs and SES components between 1,000 square feet in total area per lot or parcel and 2,000 square feet in total area per parcel or lot are allowed in any zoning district as a Conditional Use. Ground mounted SESs and SES components that exceed 2,000 square feet in total area on a lot or parcel are only allowed as a Conditional Use within the Commercial District, Industrial District, and Agricultural District if such agriculturally zoned parcel is adjacent/contiguous to Commercial and/or Industrial districts. Parcels shall not be considered adjacent/contiguous if the parcels are separated by a public or private road right of way or easement.

3. Site Plan. An SES site plan application shall include a sketch drawing depicting all lot line setbacks and the location of components in addition to any other documents required by the Township, and also in accordance with any additional site plan instructions.

4. Total Lot Coverage. The total amount of coverage of SESs and SES components is limited to 20% of the total square footage of the parcel involved when the parcel is located in the following zoned districts: Residential, Mobile Home, or Forestry Recreational.

5. Setback. Any SES or SES component shall be set back a minimum of 50 feet from the front property line, 15 feet from the side lot lines and 25 feet from the rear lot line.

6. Height. The maximum height of a ground mounted SES device shall not exceed fourteen (14) feet above natural grade.

7. Front Yard Placement Restriction. No SES or SES component shall be located in the front yard of any zoning district, unless approved by the Planning Commission upon site plan review. In addition, no SES or SES component shall be located on the waterfront side of the property, unless approved by the Planning Commission upon site plan review.

8. Security for components. Security for SES components is the responsibility of the owner.

9. Decommissioning and Removal of SES and SES components. Following the operational life of the SES (i.e. when the SES is no longer functioning), the owner shall perform decommissioning and removal of the SES and SES components.

10. Glare. All SES and SES components shall be designed and operated to avoid glare and reflection of sunlight and other artificial lighting which may affect navigation by air, water, and roadway, or be a nuisance to neighboring properties. SES designs shall comply with Federal Aviation Administration siting requirements.

11. Noise. No SES component shall emit noise exceeding forty five (45) dBA, as measured at the parcel's property boundary and/or road right- of-way.

12. Responsibility of owner of parcel. Regardless of whether a particular provision of this Article refers to the applicant, the lessee and/or the owner of a lot or parcel, the owner of the lot or parcel shall be ultimately responsible for compliance with this Ordinance.

22.04 GROUND MOUNTED SES IN EXCESS OF 2,000 SQUARE FEET

This Section applies to SESs in excess of 2,000 square feet.

1. Conditional Use Permit required. A Conditional Use Permit is required for an SES in excess of 2,000 square feet, and is allowed in the Commercial District, Industrial District, and Agricultural District if such agriculturally zoned parcel is adjacent/contiguous to Commercial and/or Industrial districts. Parcels shall not be considered adjacent/contiguous if the parcels are separated by a public or private road right of way or easement. The applicant shall also comply with all applicable federal, State of Michigan, local and county requirements, in addition to other applicable Township ordinances and codes. All plans, drawings or other material submitted for an SES conditional use shall be produced by licensed professionals certified and/or licensed to produce such materials.

2. State Building Code and National Electric Code. The applicant shall comply with State of Michigan Building Code (as adopted by the Township) and the National Electric Code ("NEC"). In the event of a conflict between the State Building Code and NEC, the NEC shall prevail.

3. Approval of SES components. All SES components shall be approved by the Institute of Electrical and Electronics Engineers ("IEEE"), Solar Rating and Certification Corporation ("SRCC"), Electronic Testing Laboratories ("EIL"), or a similar certification organization.

4. Setbacks. Except for roof mounted SES, any SES component shall not be located within six hundred (600) feet of the boundary of a property where a residential use is not participating in an SES of the same or similar scale of energy production. In addition, if there is a residential use on the parcel where an SES is established, any SES and/or SES component shall not be located within 150 feet of the residence of that parcel. For all other parcels, SES and SES components shall be set back one hundred (100) feet from any property line, except that a setback from a public road right of way shall be one hundred and fifty (150) feet.

5. Height. The maximum height of a free-standing SES and/or SES components shall not exceed fourteen (14) feet above natural grade. Other SES components and buildings such as any substation and related electrical transmission equipment shall not exceed the maximum allowed height of thirty five (35) feet as measured from the natural grade at the base of the SES and/or SES component to the

tip when extended at maximum tilt. Provided further, during the construction of the SES and SES components, no grading of the property shall be allowed. In the event the inability to grade the property shall cause the SES and/or SES components to exceed fourteen (14) feet above natural grade, the Planning Commission may waive such fourteen (14) foot height restriction and allow for a greater height.

6. Screening. Where an SES is across a public or private street from, or abuts a residential use and such residential use is not screened by natural vegetation, the perimeter within 150 feet from the residence or property boundary upon the parcel housing the SES shall be screened and buffered by evergreen or native vegetative plantings, which shall be maintained throughout the life of the SES.

7. Security. Security for an SES under this Section requires a completely enclosed perimeter security fence to restrict unauthorized access. Fencing shall not exceed eight (8) feet in height, unless approved by the Planning Commission. Electric fencing or barbed-wire fencing is not permitted. Fencing in excess of eight (8) feet in height may be required to be setback further from the road right-of-way. Any substation or support structures and related electrical transmission equipment buildings shall be further secured with additional fencing and security measures, locks, and restricted access. Any public roadways or access points to the parcel shall have additional fencing and/or restricted access measures.

8. Distribution, transmission, and interconnection. All collection lines and interconnections within the SES shall be located and maintained underground, unless above ground installation is approved by the Planning Commission. This requirement excludes transmission lines and equipment meant to connect the project inverter(s) to the project substation and public utility substation off site from the SES on the property, all of which may be above ground. There shall be no battery storage utilized to store solar energy located upon the property.

9. Glare. All SES tilt components shall be designed and operated to avoid glare and reflection of sunlight and other artificial lighting which may affect navigation by air, water, and roadway, or be a nuisance to neighboring properties. SES designs shall comply with Federal Aviation Administration siting requirements.

10. Noise. No SES component shall emit noise exceeding forty five (45) dBA, as measured at the exterior parcel boundary or existing road right-of-way line.

11. Lighting. Exterior lighting for parking lots, driveways, external illumination of buildings, or the illumination of signs shall be directed away from and be shielded from adjacent properties, focused in a downward fashion, and shall be so arranged as to not adversely affect driver visibility on adjacent public roads.

12. Advertising. No advertising or non-project graphics shall be permitted on any part of the SES or SES components. This exclusion does not apply to entrance gate signage or notifications containing SES contacts, or any and all other information that may be required by authorities having jurisdiction for electrical operations. This provision shall not limit the use of signage as otherwise permitted in this Ordinance, except that

billboards advertising products or services off-premises shall not be permitted.

13. Roads/access driveways. Access driveways from public roads shall be subject to the Muskegon County Road Commission review and approval. Any material damages to a public road located within the Township resulting from the construction, maintenance, and/or operation of an SES shall be repaired at the owner's expense. In addition, the applicant shall submit to the appropriate county agency a description of the routes to be used by construction and delivery vehicles; and any road improvement that will be necessary to accommodate construction vehicles, equipment or other deliveries. The applicant shall abide by all County requirements regarding the use and/or repair of County roads. The Township may require that the applicant and/or owner post a surety bond with the Township to cover estimated costs related to anticipated road damage or repairs, as recommended by the Muskegon County Road Commission.

14. Additional requirements. In addition to the general requirements of a Conditional Use application, an SES conditional use application shall include the following:

A. Pollinator habitat plan. A pollinator plan shall include but not be limited to:

i. Native plants shall be established and maintained for the life of the SES to support native and managed bees, butterflies, birds and/or other wildlife. Deviation from establishing native plants in these areas shall require approval of the Township Board. The areas to be established with native plants shall be:

(1) Under and between rows of solar panels shall be low growing grasses, clovers or other appropriate vegetation;

(2) Vacant area within the perimeter fence;

(3) Leased vacant area outside the perimeter fence.

ii. The Township shall appoint a specialist in pollinator habitat creation in Michigan to consult the owner with their plan for native plant establishment and maintenance, the cost for which the owner shall reimburse the Township. The plan shall follow current Best Maintenance Practices of Pollinator Habitat Installation and Maintenance for SES installations as found through Michigan State University Extension and Michigan State University Pollinator Initiative Program. The plan will meet or exceed a score of 85 using the Michigan Solar Site Pollinator Habitat Planning Form established by the Michigan State University Extension. A Pollinator Habitat plan and schedule shall be submitted for approval to the Township Board. The plan shall include pollinator habitat establishment milestones. Future deviation from the plan shall require Township Board approval. The SES installation site shall be monitored annually, at the expense of the owner, by a Township appointed consultant for pollinator habitat progress. A progress report shall then be submitted to the Township Board. Any deviation from the plan milestones shall be promptly addressed by the owner.

B. Landscaping plan. A landscaping plan, which shall be maintained for the life of the SES, shall include but not be limited to:

- i. Evergreen trees, a minimum of four (4) feet in height;
- ii. Deciduous trees, a minimum of 1 ¼ inch in diameter;
- iii. Shrubs, a minimum of two (2) feet in height;
- iv. The mix of trees and shrubs shall be site appropriate as determined by the Planning Commission and Township Board. The Planning Commission and/or Township Board, at the expense of the applicant and/or owner, shall have the right to consult a professional landscaper;
- v. In the event an SES abuts a public road and/or residence(s), the Planning Commission and Township Board shall determine the appropriate screening density;
- vi. No earthen berms shall be allowed as part of the visual screening requirement;
- vii. Climbing vines may be allowed as part of the landscaping plan;
- viii. Initial plantings and replacement plantings shall be installed between March and October.

C. Environmental Studies. At the Township's request, the applicant and/or owner shall fund an environmental assessment or impact study and/or other relevant report(s) or studies (including, but not limited to, assessing the potential impact on endangered species, eagles, birds, and/or other wildlife/insect life/plant life) as required by the Township for review by the Township regarding the area or surrounding areas where the SES will be placed. Each such study or report shall be provided to the Township prior to the time when the Planning Commission makes its formal recommendation regarding the Conditional Use request to the Township Board. Failure to timely provide such studies may delay the Planning Commission's formal recommendation to the Township Board.

D. Site Plan. A detailed site plan shall be provided by the applicant and/or owner, which clearly and accurately depicts the property boundary surveys, setbacks, installation, and location of all devices and supporting building structures.

E. Topographic depiction of neighboring parcels. The owner shall provide a USGS based topographic depiction of all adjacent and neighboring property parcels showing the location and type of all buildings within 300 feet of the proposed SES. This depiction shall include the locations and elevations of all proposed SES/SES components.

F. Construction Waste Management Plan. The applicant and/or owner shall

submit a Construction Waste Management Plan describing the methods of waste disposal of the large quantities of cardboard, wood, scrap metal, and scrap wire. The Township may require an interim Waste Management bond or other security to insure that the site(s) are clean after initial construction.

G. Maintenance Plan. The applicant and/or owner shall provide a written description of the maintenance program to be used for and during the operation of the SES. The description shall include typical maintenance schedules, the types of maintenance to be performed, and the removal procedures and schedules should SES components become obsolete and/or abandoned. Also included in the maintenance plan shall be the written description of how any pollinators, landscaping and/or required vegetation will be maintained. Provided further, the Township shall require the applicant and/or owner to post with the Township a monetary guarantee in the form of a letter of credit, surety bond, or similar monetary guaranty for an amount necessary to accomplish landscaping maintenance, including the cost of replacement plantings, as agreed upon by the Township and the applicant and/or owner. The amount shall be reasonably sufficient to maintain the landscaping and cover the cost of replacement plantings. Said amount shall be reviewed annually, and reduced (i.e. refunded to the owner) as the plantings/landscaping matures and annual replacements become less likely.

H. Decommissioning Plan. The applicant and/or owner shall provide a Decommissioning Plan with the application which will describe the proposed process for decommissioning the site and restoring the property to its previous condition prior to the installation of the SESs and SES components. It shall state the estimated usable life of the SES and conditions for decommissioning; the estimated costs in current dollars; and, the process and timeframe to remove all components and structures from the site. The Decommissioning Plan, as approved by the Township, shall be recorded with the Muskegon County Register of Deeds on all properties developed for an SES as a conditional use.

I. Emergency personnel. The applicant shall provide informational materials up to and including training for responding local emergency and fire department services, and all fire departments that provide mutual aid, prior to the start of any commercial-scale SES operations. On-site emergency access and contacts and equipment protocols shall be provided to local emergency services and fire departments in the event of a fire or other emergency. Local emergency service and fire department training or materials will be held or provided thereafter at the expense of the owner, as requested by the emergency services and/or fire department(s) not more than once per calendar year or as reasonably necessary. If specific firefighting chemicals or materials are needed to extinguish commercial-scale SES equipment fires, local emergency services and the fire department shall be provided with the proper training to handle, contain, and clean-up the chemicals and/or materials by the applicant.

J. Fees. The application shall be accompanied with the applicable fees and escrow/bond as may be established by the Township Board, from time to time. Provided further, that the schedule of fees shall be deemed a minimum or base fee, and in addition the Township may charge the owner its actual costs and expenses incurred in the review of such applications, which costs may include but not be limited to: Publication fees,

professional engineering or site plan review fees by such professionals as the Township may deem necessary to engage, and actual attorney fees incurred by the Township in advising the Township and in reviewing and drafting documents necessary to the review or grant of any application submitted to the Township under this Ordinance. No permit, certificate, or conditional use approval shall be issued until such costs, charges, fees, or expenses have been paid in full, nor shall any action be taken on proceedings before the Planning Commission until preliminary charges and fees have been paid in full. Fees now provided in other existing Ordinances of the Township shall remain in effect until amended by the Township Board. No part of any fee shall be refundable. In the event any fees requested by the Township to be paid by the owner, are not paid to the Township by the owner, the Township may rescind the Conditional Use permit.

15. Inspection. The Township shall have the right, upon approving any SES conditional use, to inspect the premises on which the SES is located at all reasonable times, with prior 24-hour notice to owner. The Township may hire a consultant to assist with any inspections at the owner's expense.

16. Escrows and Security Bond. An escrow and/or security bond shall be required as follows:

A. Monetary guaranty. Prior to the start of construction or installation of an SES, the Township shall require the applicant and/or owner to post with the Township a Decommissioning Security in the form of a letter of credit, surety bond, or similar monetary guaranty for an amount necessary to accomplish the work specified in the Decommissioning Plan, as agreed upon by the Township and the applicant and/or owner. The amount shall be reasonably sufficient to restore the property to its previous condition prior to the initial construction and operation of the SES. The amount necessary to cover the cost of decommissioning and reclamation shall be presumed to be the greater of (i) the net salvage value calculated at 125% of the cost to decommission the project less the salvage value or (ii) an amount equal to \$20/kw AC at the time of construction; \$40/kw AC at the end of year ten; \$80/kw AC at the end of year 20. At the expense of the owner, the net salvage value calculation shall be performed by a third-party professional engineer every 5 years during operations and 12 months prior to the expiration of the project's power purchase agreements and/or lease with the owner. An escalation factor for inflation may be included for determining the amount of the estimated cost of decommissioning.

B. Length of monetary guaranty/Township as the beneficiary. Such financial security shall be kept in full force and effect during the entire time that the SES exists or is in place, and such financial security shall be irrevocable and non-cancelable by the owner. The Township shall be named as a beneficiary on such financial security documents. Where the applicant takes out the security, it may be assigned to the owner with notice to the Township.

C. Reassessment of monetary guaranty. On, or prior to, the end of a period of five (5) years of the operation of an SES, the estimated costs of decommissioning less the amounts reserved, if any, will be reassessed by the Township and an amount equal to the balance of such updated estimated cost of decommissioning, if any, will be reserved for

decommissioning and site restoration.

D. Failure to maintain monetary guaranty. Failure to maintain any required financial security in full force and effect at all times while the SES exists, or is in place, shall constitute a material and significant violation of the conditional use approval and this Ordinance, and subject the applicant and/or owner to all remedies available to the Township, including any enforcement action, civil action, request for injunctive relief, and/or revocation of the conditional use approval.

E. Release of monetary guaranty. The financial security will be released to the owner when the Township has determined that it is no longer required.

17. Maintenance and Repair. The following are requirements for maintenance and repair of SES and SES components, in addition to the requirements set forth in this Article:

A. Industry standards. The SES shall be maintained in good repair and condition, in accordance with industry standards, at all times. The owner has the responsibility to perform the maintenance and repairs in accordance with the Maintenance Plan and the prescribed schedules in a timely manner. All sites with a SES shall be kept free of refuse, waste, or hazardous or unsanitary conditions.

B. Time to repair/maintain. If the Zoning Administrator/Compliance Officer and/or Building official or electrical inspector determines that an SES fails to meet the requirements of this Ordinance and the Conditional Use approval, or that it poses a safety hazard or condition, the Zoning Administrator/Compliance Officer and/or Building official or electrical inspector shall provide notice to the owner of the safety hazard or condition. If the maintenance, repair, or safety hazard(s) are not corrected after a reasonable period (not to exceed 30 days; which may be reduced depending upon the immediacy of the problem or extended as documented by active corrections as determined by the Zoning Administrator/Compliance Officer and/or Building official or electrical inspector), the Township may take such actions as it deems appropriate, including making appropriate repairs (and charging the costs back to the owner). Where public safety or emergency conditions warrant, the Township may shut down the SES or portions thereof until the correction is made.

C. Costs to repair/maintain. The Township may assess all costs to the owner for such enforcement actions and use a portion of any security bond or escrow being held for such enforcement actions.

D. Broken SES components. At all times, while any of the SES components are present on the property, broken SES components shall be promptly repaired or removed from the site. There shall be no on-site storage of broken or malfunctioning SES components.

18. Abandonment and/or Decommissioning. The following are requirements for abandonment and/or decommissioning of an SES and SES components:

A. Updated decommissioning plan. Prior to decommissioning an SES, owner

shall submit an updated Decommissioning Plan to the Zoning Administrator/Compliance Officer, electrical inspector and/or Building inspector for review and approval. Under this plan all structures, concrete, piping, facilities and other project related materials above grade and any structures below grade shall be removed offsite and properly disposed. Access drives and roadbeds shall be removed at the option of the real property owner. The Township Board shall determine whether to allow certain aspects of a former commercial SES to remain, such as roadways or building structures. **Said updated Decommissioning Plan shall be recorded at the Muskegon County Register of Deeds.**

B. One year decommissioning time period. The decommissioning shall be complete, and the ground restored, within one (1) year from the date of abandonment, which time may be extended by the Zoning Administrator/Compliance Officer for up to one (1) additional year, provided substantial progress in being made, in the opinion of the Zoning Administrator/Compliance Officer.

C. Failure of complete removal and reclamation. Failure by the owner to complete removal and reclamation within the one (1) year time period (or after a time extension as described above) may result in the Township hiring a contractor to complete decommissioning and reclamation, with all of the expenses thereof charged to the owner and becoming a lien against the property. That shall be in addition to all of the other remedies available to the Township at law and in equity. In the event the Township enforces its rights under this section, the Township shall be entitled to recover from the owner its actual costs and actual attorney fees.

19. Abandonment. Any SES that is not operated for a continuous period of twelve (12) consecutive months shall be considered abandoned and the conditional use approval revoked.