

ORDINANCE NO. 18-3

Belvidere Township, Montcalm County, Michigan

An Ordinance to amend Ordinance No. 18, as amended, commonly referred to as the 2010 Belvidere Township Zoning Ordinance, to define and authorize solar energy systems, to establish approval procedures and standards for solar energy systems.

THE BELVIDERE TOWNSHIP BOARD ORDAINS:

SECTION 1

The 2010 Belvidere Township Zoning Ordinance is amended by the insertion of Line #7 under “Uses of a Public, Semi-Public, or Other Character” in Table 3-2 of Article 3, and the insertion of Footnote 5 at the end of such Table, each to read as follows:

	PRINCIPAL USES	ZONING DISTRICTS				
		BR = Use Permitted by Right, S = Special Land Use – = Prohibited Use				
		AR	R-1 R-2	R-3 R-4	R-MF	R- MHC
	Uses of a Public, Semi-Public, or Other Character					
7	Solar Energy Systems, Large.	S ⁵	–5	–5	–5	–5

(Footnote 5 below)

“5. See Sec. 10.31 regarding authorization of “Small” and “Medium” Solar Energy Systems including systems accessory to dwellings.”

SECTION 2

The 2010 Belvidere Township Zoning Ordinance is amended by the insertion of Line #5 under “Other Uses Not Listed Above” in Table 3-3 of Article 3, and the insertion of Footnote 3 at the end of such Table, each to read as follows:

	PRINCIPAL USES	ZONING DISTRICTS ¹		
		C-1	C-2	I-1
		BR= Use Permitted by Right S = Special Land Use, - = Prohibited Use		
	Other Uses Not Listed Above¹			
5	Solar Energy Systems, Large.	-3	-3	-3

(Footnote 3 below)

“3. See Sec. 10.31 regarding authorization of “Small” and “Medium” Solar Energy Systems including systems accessory to dwellings.”

SECTION 3

The 2010 Belvidere Township Zoning Ordinance is amended by the insertion of Section 10.31, to read as follows:

“Section 10.31 Solar Energy Systems (SES)”

A. Definitions: For the purpose of this Section, the following phrases shall have the following corresponding definitions.

1. **Solar Energy System (SES):** A roof mounted or ground mounted system consisting of a device or combination of devices, structures or parts thereof, that collect, transfer or transform solar radiant energy into thermal, chemical or electrical energy, excluding systems that substantially rely on mirrors or similar technologies to focus solar radiant energy onto a considerably smaller area and are sometimes referred to as “concentrated solar power” systems or “CSP” systems.
2. **Small Solar Energy System (Small SES):** A SES located on the same lot as the use served by the SES and which relies on roof mounted and/or ground mounted collection systems that shall not exceed 1,000 square feet in area of combined roof and/or land area, including access aisles between solar panels. A Small SES is typically intended to serve a single residential unit, agricultural operation or other business.
3. **Medium Solar Energy System (Medium SES):**
 - a. A SES located on the same lot as the use served by the SES and which relies on roof mounted and/or ground mounted collection systems that shall not exceed 1,001-5,000 square feet in area of combined roof and land area, including access aisles between solar panels. A Medium SES is typically intended to produce energy for use in association with multiple dwellings and/or businesses on a single lot.
 - b. A SES located on the same lot as the use served by the SES and which relies on roof mounted and/or ground mounted collection systems that shall not exceed 5,000-10,000 square feet in area of

combined roof and land area, including access aisles between solar panels. A Medium SES is typically intended to produce energy for use in association with multiple dwellings and/or businesses on a single lot.

4. Large Solar Energy System (Large SES): A solar energy system that relies on roof mounted and/or ground mounted collection systems that occupies more than 10,001 square feet in area of combined roof and land area, including access aisles between solar panels. A Large SES is typically intended to produce energy for use principally in association with multiple dwellings and/or businesses on a single lot on which the system is located and/or for use by off-lot properties and persons including in association with energy utility providers. A Large SES may be commonly referred to as a “solar farm.”
5. Solar Collection Panels: Panels and tiles comprised of semiconductor devices and typically referred to as photovoltaic cells, which collect and convert solar energy directly into electricity. Ground mounted solar collection panels are panels attached to the ground by a pole, metal frame or other similar support structure.

B. Authorization, Review and Approval Procedures

1. Small SES: Small SES are permitted as accessory uses and structures only and are authorized in all districts. Small SES require a zoning permit and shall be subject to Zoning Administrator approval. An application for a Small SES shall be accompanied by a plot plan prepared according to Section 2.4(B), including the delineation of all SES structures and equipment.
2. Medium SES: Medium SES are permitted as accessory uses and structures only and are authorized in all districts provided the principal use of the lot is not residential. Medium SES require a zoning permit and shall be subject to site plan approval according to Article 14 except that if the principal use constitutes a special land use, the approval process for the Medium SES shall be subject to the special land use review and approval provisions of Article 15.
3. Large SES: Large SES are permitted as accessory and principal uses and structures. Large SES require a zoning permit, constitute a special land use, and are subject to the special land use review and approval provisions of Article 15 including site plan review according to Article 14. See Tables 3-2 and 3-3 of Article 3 regarding in what districts Large SES are authorized.

C. General Standards

1. Buildings: Unless provided elsewhere in this Section, all buildings part of a SES shall comply with the standards of Table 3-4 of Article 3 unless the approving body determines the building functions in an accessory manner, in which case the standards of Section 20.10 shall apply.
2. Structures: Unless provided elsewhere in this Section, all structures that do not constitute buildings shall comply with the accessory structure standards of Section 20.10,
3. Glare/Radiation: SES collection panels shall be designed and placed such that concentrated solar radiation or solar glare shall not be directed onto nearby properties and public roads. The applicant shall submit documentation to verify compliance with this section. When deemed necessary, the reviewing body may require a report from a registered civil engineer or other professional deemed qualified by the Zoning Administrator, attesting to the glare and radiation impact on nearby properties and public roads.
4. Panel Setbacks and Heights:
 - a. Ground-mounted panels that are part of a Small SES shall be set back a minimum of twenty-five (25) feet from lot lines, shall not exceed 1,000 square feet in area, and shall not exceed twelve (12) feet in height as measured from the ground below to the top of the panel when in its most vertical position.
 - b. Ground-mounted panels that are part of a Medium SES and 1,001-5,000 square feet in area shall be set back a minimum of one hundred fifty (150) feet from lot lines, and shall not exceed twelve (12) feet in height as measured from the ground below to the top of the panel when in its most vertical position.
 - c. Ground-mounted panels that are part of a Medium SES and 5,001-10,000 square feet in area shall be set back a minimum of two hundred (200) feet from lot lines, and shall not exceed twelve (12) feet in height as measured from the ground below to the top of the panel when in its most vertical position.

- d. Ground-mounted panels that are part of a Large SES and exceed 10,001 square feet in area shall be set back a minimum of three hundred (300) feet from lot lines, and shall not exceed twelve (12) feet in height as measured from the ground below to the top of the panel when in its most vertical position.
 - e. A SES located on the same lot as the use served by the SES and which relies on roof mounted and/or ground mounted collection systems that shall not exceed 1,001-5,000 square feet in area of combined roof and land area, including access aisles between solar panels. A Medium SES is typically intended to produce energy for use in association with multiple dwellings and/or businesses on a single lot.
5. Maximum Lot Coverage: Maximum lot coverage restrictions shall not apply to solar collection panels. Any other structures on the lot are subject to maximum lot coverage restrictions.
 6. Yard Restrictions: No ground mounted SES panels, and support equipment that exceeds fifty (50) sq. ft. in area or six (6) feet in height, shall be located in a front yard unless such panels and equipment are set back a minimum distance of fifty (50) feet from the front lot line and screening is provided according to the landscape screening height and spacing provisions of subsection (8)(a) – (c). In the case of a lot that does not include a building not otherwise part of the SES, the front yard shall be construed to extend from the front lot line to a distance of seventy-five (75) feet.
 7. Lighting: No SES exterior lighting shall be erected except upon satisfactory evidence that such lighting is necessary for the proper operation or security of the facility. No light may adversely affect adjacent lots. All lighting shall be shielded from adjoining lots, and light poles are restricted to eight (8) feet in height from the ground except upon satisfactory evidence that a greater height is necessary, no reasonable alternatives are available, and the greater height shall not create nuisance conditions.
 8. Fencing: In the case of Medium SES and Large SES, a fence of a minimum eight (8) feet in height shall be erected to prevent access by the public to any solar panels and other facility equipment, with locked gates, and shall include “danger” signage in both English and Spanish.
 9. Screening: The perimeter of Medium and Large Solar Energy Systems shall be screened and buffered by installed evergreen vegetative plantings whenever existing natural vegetation does not obscure the large photovoltaic other solar farm facilities from a public street and/or adjacent residential structures, subject to the following requirements:
 - 2 The design of the landscape screening shall use materials, colors, textures, and landscaping that will blend into the natural setting and existing environment without adverse visual impact on the natural features or neighborhood character of surrounding area.
 - 3 The evergreen planting shall be comprised of 3 rows
 - i Row 1 and 3 aligned
 - ii Row 2 50% offset spacing to row 1 and 3
 - iii Trees shall be 8 feet tall for 12 feet panels and 6 feet tall for 10 feet panels
 - iv Each row requires trees to be 14 feet on center
 - v Each row shall be 14 feet apart
 - 4 In the case of Medium and Large SES ground mounted solar collection panel(s) located on a lot that is adjacent to a lot in an Agricultural or Residential District, the panels shall be screened from view from such lot.
 - 5 The approving body may permit a maximum fifty percent (50%) reduction in the number and size of tree plantings where the adjacent property is vacant and not likely to be developed within the next three (3) years based on nearby development trends during the preceding three (3) years, where natural features are present that serve to assist in the screening of the panel(s) such as existing topographic or vegetative conditions, where existing structures will assist in the screening of the panels, and/or where other conditions may be present that make the normally required screening requirements ineffective or otherwise unnecessary.
 - 6 The screening requirements of this Section shall replace the screening provisions of Article 8, except as the approving body may determine otherwise appropriate.
 10. Sound Levels: Sound levels measured along a property line of a parcel adjacent to but not part of a commercial SES shall not exceed fifty-five (55) decibels on the dB(A) scale.
 11. Roof-Mounted Systems: Roof-mounted SES may exceed the maximum height standard for the structure to which it is attached according to the District in which it is to be located, but no portion of the system shall extend more than three (3) feet above the roof surface to which it is attached directly below.
 12. Environmental Impact: The application shall include a report that demonstrates that the proposal shall not

have a significant adverse effect on area avian, bat and other wildlife and wildlife habitats including wetlands and nesting, migratory and feeding patterns, and shall identify all proposed mitigation measures to minimize potential impacts. The report shall be a separately bound document prepared by a certified wildlife biologist and the report shall document such certification and pertinent expertise of all persons contributing to the report and the procedures followed for documenting nesting, migratory and feeding patterns.

- a. The above-referenced report shall include documentation regarding the proposal's compliance with the federal Endangered Species Act of 1973 and the Michigan Natural Resources and Environmental Protection Act (1994 PA 451, MCL 324.101 et seq.), including but not limited to:
 - i Part 31 Water Resources Protection (MCL 324.3101 et seq.),
 - ii Part 91 Soil Erosion and Sedimentation Control (MCL 324.9101 et seq.),
 - iii Part 301 Inland Lakes and Streams (MCL 324.30101 et seq.),
 - iv Part 303 Wetlands (MCL 324.3030 1 et seq.),
 - v Part 365 Michigan Endangered Species Protection (MCL. 324.36501 et seq.),
13. Communication Interferences Certification: The applicant shall submit documentation that the commercial SES shall not produce interference with signal transmission or reception in association with radio, television, or wireless phone or other personal communication systems.
14. Installation Instructions: A copy of the manufacturer's installation instructions and blueprints shall be provided to the Township. Included as part of or as an attachment to the installation instructions shall be standard drawings of the structural components of the commercial SES and support structures, including base and footings provided along with engineering data and calculations to demonstrate compliance with the structural design provisions of the Building Code as adopted by the Township. Drawings and engineering calculations shall be certified by a registered engineer licensed in the State of Michigan.
15. Proof of Liability Insurance: The applicant shall submit proof of liability insurance including the levels of coverage per incident and cumulatively.
16. Lease Agreements: The applicant shall submit copies of those portions of executed lease agreements for participating parcels that document the landowners granting authority to erect a test tower or establish a commercial SES.
17. Performance Guarantee Requirements
 - a. Prior to the issuance of a commercial SES permit, the applicant shall engage a licensed professional engineer to estimate the total cost of decommissioning the SES and reclamation efforts to return affected land back to its physical condition prior to commercial SES construction. The applicant shall pay for the costs of obtaining such an estimate. Said estimates shall be submitted to the Township for review.
 - b. Prior to the issuance of a commercial SES permit, the owner(s) and/or operator of the SES shall post a performance guarantee, in a form acceptable to the Township, equal to one hundred percent (100%) of the total estimated decommissioning and reclamation costs. Decommissioning and reclamation costs shall be re-evaluated, and the value of the bond shall be adjusted accordingly every five (5) years.
 - c. Said performance guarantee shall be posted and maintained with a bonding company licensed in the State of Michigan or Federal or State chartered lending institution chosen by the owner(s) or operators and acceptable to the Township.
 - d. An applicant shall maintain the approved performance guarantee for the duration of the commercial SES, until decommissioning and removal is complete. The performance guarantee documents shall prohibit the applicant from terminating or withholding renewal of the performance guarantee except upon written approval from the Township Clerk. The termination or non-renewal of a performance guarantee without the Township's approval shall be a violation of this Ordinance and the Township may revoke approval of the SES, require its removal, and/or exercise any other authority permitted by law.
 - e. The performance guarantee provisions of Section 2.6 shall apply except where otherwise modified by this subsection.
18. Decommissioning/Reclamation.

A commercial SES application shall include a decommissioning and reclamation plan that shall address, at a minimum, the anticipated life of the project, the manner in which all structures and equipment shall be disassembled and removed from the participating parcels, and the manner in which the participating parcel shall be returned to its pre-existing state including revegetation. The decommissioning/reclamation plan shall also address the following:

- a. When a commercial SES is decommissioned, all items shall be removed from the subject property, including electrical components, structure foundation, or other associated components to a depth not less than ten (10) feet below the ground surface.
 - b. Any material left more than ten (10) feet below the ground surface shall be documented and recorded upon a certified survey and recorded within the County Register of Deeds.
19. Register of Deeds Filings. No construction shall be initiated for any portion of a Commercial SES prior to the applicant filing with the Montcalm County Register of Deeds, for each participating parcel, the lease agreements and easements to which the respective participating parcel is subject.

D. Minor Accessory Solar Energy Systems: Solar energy systems that do not exceed four (4) square feet in total solar collector panel area, intended to provide energy to operate a device to which such panel is attached such as in the case of a solar panel powering an exterior light or an attic fan, are permitted in all districts and may be erected without the issuance of a zoning permit.

1. Setbacks: Self-contained solar energy systems shall not be subject to setback restrictions except that no self-contained solar energy system greater than two (2) sq. ft. in area shall be located within twenty (20) feet of a front lot line.
2. Heights: Self-contained solar energy systems shall comply with the height restrictions applicable to accessory structures in the respective District except that in the case of a roof-mounted system, no portion of the system attached to the roof shall exceed three (3) feet above the roof surface directly below.

E. Exempt Solar Energy Systems: The following shall not be subject to the issuance of a zoning permit but shall comply with the requirements and standards of this Section.

1. Self-contained solar energy systems.
2. Roof-mounted solar energy systems that function as shingles, or are otherwise shingle-like in general character, and roof-mounted systems that lay flat against the roof and at the same angle of the roof.

F. Additional Submittal Requirements for Medium and Large SES: In the case of an application for a Medium or Large SES, the following information shall be provided in addition to the information required by Article 14 for site plan review and Article 15 for special land use applications.

1. Project Description and Rationale: 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 possible future expansions.
2. Operator's Agreement: The operator's agreement, which shall set forth the operations parameters, the name and contact information of the certified operator, inspection protocol, emergency proceedings and general safety documentation.
3. Analysis of Traffic: An assessment of anticipated traffic to the SES during construction phases and once the SES is operational, including the anticipated daily vehicles by frequency and type during construction and after construction.
4. Visual Impacts: A presentation of the visual impact using photos or renditions of the project with consideration given to the tree plantings and setback requirements.
5. Wildlife: A review of the real and potential impacts on wildlife on the site and in the surrounding area.
6. Lighting: Indicate the extent of exterior lighting to be installed including locations, heights, fixture specifications, light levels along property lines, and the frequency of lights to be illuminated.

7. Transportation Plan: An access plan during construction and operational phases including the proposed SES service road system and ingress and egress onto public roads.
8. Public Safety: A description of the public health and safety risks the SES may present and measures to address such risks including emergency and standard shutdown procedures, and any security measures that may be employed to manage access to the facility by the general public.
9. Telecommunications Interference: Provide a description of the extent to which the SES may interfere with wireless communications within one (1) mile of the SES, or otherwise alter electromagnetic field conditions.
10. Power: Identify how the SES will connect to the power grid.
11. Glare: Provide a report prepared by a qualified person with documented training, certification and/or licensing in glare associated with SES including training in the use of computer software designed to assess glare potential, attesting to the glare and radiation impact on nearby properties and public roads and verifying compliance with this Section.
12. Project Duration, Decommissioning, and Reclamation: Provide a detailed decommissioning plan addressing the project's estimated duration period, the manner in which all SES features shall be removed, and the manner in which the site shall be reclaimed to its former condition. The decommissioning plan shall include a detailed description of the financial security guaranteeing removal of the system, and which shall be posted at the time of receiving a construction permit for the facility. The security shall be in a form as required by Section 2.6. The amount of such a guarantee shall be no less than the estimated cost of removal and may include a provision for inflationary cost adjustments. The estimate shall be prepared by the engineer for the developer, shall present a detailed basis for the estimate including estimated hours and costs for labor and equipment, and shall be subject to approval by the Township.”
13. Location of inverter: The location of the inverter must be identified on the site plan.