



Solar Energy Systems Ordinance

Adopted Date: August 15, 2023

Certified By: _____ Date: _____

Revision-002: Amended _____

Affix Town Seal:

*****NOTE*****

THIS IS A REFERENCE COPY. ALL ORIGINAL, SIGNED, DATED AND SEALED DOCUMENTS ARE AVAILABLE AT THE LIVERMORE FALLS TOWN OFFICE.

Town of Livermore Falls
Solar Energy Systems Ordinance

TABLE OF CONTENTS

Section 1: Title	3
Section 2: Purpose	3
Section 3: Applicability	3
Section 4: Definitions	4
Section 5: Application Fees	5
Section 6: Specific Application Requirements	6
Section 7: Standards for Approval	8
Section 8: Decommissioning and Removal	13
Section 9: Modifications	14
Section 10: Authority	14.
Section 11: Effective Date and Duration	14.
Section 12: Enforcement Violations and Penalties	15.

Section 1. Title

This Ordinance shall be known and may be cited as the “Solar Energy Systems Ordinance”.

Section 2. Purpose

The purpose of this ordinance is to establish a municipal review procedure and performance standards for Solar Energy Systems (SES). These standards are intended to:

- a. Establish clear guidelines, standards and time frames for the Town to regulate Solar Energy Systems;
- b. Permit the Town to fairly and responsibly protect public health, safety and welfare;
- c. Minimize any potential adverse effect of solar development on surrounding land use;
- d. Provide for the decommissioning/removal of panels and associated utility structures that are no longer being used for energy generation and transmission purposes; and
- e. Support the goals and policies of the Comprehensive Plan, including orderly development, efficient use of infrastructure, and protection of natural, scenic, and agricultural resources.

Section 3. Applicability

Solar Energy Systems (SES) may be subject to a Planning Board site review, as in the table below. A Solar Energy System approved for construction prior to the effective date of this Ordinance shall not be required to meet the terms and conditions of this Ordinance. Any physical modification to any existing SES, whether or not existing prior to the effective date of this Ordinance that expands or relocates the footprint of the SES, shall require approval under this Ordinance. Routine maintenance or replacements do not require a permit.

SES	Commercial	Industrial	Residential	Rural Residential	Rural Farm & Forest	Natural Resource Protection
Principal Use						
SES, Medium Scale	Y	Y	SPR	SPR	SPR	N
SES, Large Scale	SPR	SPR	SPR	SPR	SPR	N
Accessory Use						
Rooftop SES	Y	Y	Y	Y	Y	Y
SES, Small Scale – Ground Mounted	Y	Y	Y	Y	Y	SPR
SES, Medium Scale –Ground Mounted	Y	Y	Y	SPR	SPR	SPR

Y=Allowed: N=Prohibited: CU=Conditional Use: SPR=Site Plan Review

Section 4. Definitions

Solar Energy System (SES): a solar photovoltaic cell, module, or array, or solar hot air or water collector device, including all Solar Related Equipment, which relies upon solar radiation as an energy source for collection, inversion, storage, and distribution of solar energy for electricity generation or transfer of stored heat.

Solar Energy System, Ground-Mounted: A Solar Energy System that is structurally mounted to the ground and is not roof-mounted; may be of any size (small, medium, or largescale).

Solar Energy System, Roof-Mounted: A Solar Energy System that is mounted on the roof of a building or structure; may be of any size (small, medium, or large-scale).

Solar Energy System, Large-Scale: A Solar Energy System whose physical size based on total airspace projected over the ground is equal to or greater than 4 acres (174,240 square feet), and/or that generates a rated nameplate capacity of 1 MW or greater.

Solar Energy System, Medium-Scale: A Solar Energy System whose physical size based on total airspace projected over the ground is equal to or greater than 3,000 square feet but less than 4 acres (174,240 square feet), and/or that generates a rated nameplate capacity of 20 kW up to, but not including, 1 MW.

Solar Energy System, Small-Scale: A Solar Energy System whose physical size based on total airspace projected over the ground is less than 3,000 square feet and/or that generates a rated nameplate capacity of less than 20 kW. Such a system may consist of one (1) or more freestanding ground, or roof mounted, solar arrays, or solar related equipment, and is intended to primarily reduce on-site consumption of utility power or fuels.

Kilowatt (kW): a unit for measuring power that is equivalent to 1,000 watts.

Megawatt (MW): a unit for measuring power that is equivalent to one million watts, or 1,000 kilowatts.

Rated Nameplate Capacity: The maximum rated output of electric power production of the photovoltaic system in watts of Direct Current (DC).

Solar Energy: Radiant energy (direct, diffuse and/or reflective) received from the sun.

Solar Array: A grouping of multiple solar modules with the purpose of harvesting solar energy.

Solar Related Equipment: Items including a solar photovoltaic cell, module, or array, or solar hot air or water collector device panels, lines, pumps, batteries, mounting brackets, framing, fencing, foundations or other structures used or intended to be used for collection and management of solar energy.

Pure Tone: The simplest periodic sound: a constant sound created as a pressure disturbance that fluctuates sinusoidal as a fixed frequency.

Section 5. Application Fee

Application fees for all Solar Energy Systems shall be as set forth in the Town of Livermore Falls Fee Schedule, which may be amended by the Select Board from time to time without public hearing.

Section 6. Specific Application Requirements

A permit application for a Large- or Medium-Scale Solar Energy System must include the following, at the cost of the applicant:

- 1 A description of the owner of the SES, the operator if different, and detail of qualifications and track record to run the facility.
- 2 Documents evidencing the applicant's sufficient right, title or interest in the proposed location of the SES, and if the operator will be leasing the land, a copy of the agreement (minus financial compensation) clearly outlining the relationship inclusive of the rights and responsibilities of the operator, landowner and any other responsible party with regard to the SES and the life of the agreement.
- 3 A copy of the agreement and schematic details of the connection arrangement with the transmission system (most likely Central Maine Power), clearly indicating which party is responsible for various requirements and how they will be operated and maintained.
- 4 A certification that the layout, design and installation of the SES will conform to applicable industry standards, such as those of the American National Standards (ANSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), Institute of Electrical and Electronics Engineers (IEEE), Solar Rating and Certification Corporation (SRCC), Electrical Testing Laboratory(ETL), Florida Solar Energy Center (FSEC) or other similar certifying organizations, and shall comply with local ordinances, and with all other applicable fire and life safety requirements defined by the National Fire Protection Association (NFPA).
- 5 The manufacturer specifications for the key components of the SES.
- 6 A description of the panels to be installed, including make and model, and associated major system components.
- 7 A construction plan and timeline, identifying known contractors, site control and anticipated on-line date.
- 8 An operations and maintenance plan, including site control and the projected operating life of the system; such a plan shall include measures for maintaining safe access to the installation, stormwater controls, as well as general procedures for operational maintenance of the installation. Additionally, such plans shall include efforts to promote beneficial flora and fauna (e.g., honeybees, butterflies, etc.) as well as a commitment not to use pest-control substances (e.g., pesticides, herbicides, fungicides, and/or insecticides).

- 9 An emergency management plan for all anticipated hazards.
- 10 A storm water management plan, certified by a licensed Maine engineer that demonstrates storm water from the SES will infiltrate into the ground beneath the SES at a rate equal to or better than that of the infiltration rate prior to the placement of the system.
- 11 A background noise measurement for the site location as performed by a qualified professional.
- 12 Proof of financial capacity to construct and operate the proposed facility.
- 13 A decommissioning plan, including:
 - a. A description of the trigger for implementing the decommissioning plan. There is a rebuttable presumption that decommissioning is required if 10% or less of the rated nameplate capacity of electricity is generated for a continuous period of at least twelve (12) months. The Applicant may rebut the presumption by providing evidence, such as a force majeure event that interrupts the generation of electricity, that although the project has not generated electricity for a continuous period of 12 months, the project has not been abandoned and should not be decommissioned. The determination as to whether decommissioning is required shall be made by the Code Enforcement Officer.
 - b. A description of the work required to physically remove all Solar Energy System and Solar Related Components, including associated foundations, buildings, cabling, electrical components, and any other associated facilities to the extent they are not otherwise in or proposed to be placed into productive use. All earth disturbed during decommissioning must be graded and re-seeded, unless the owner of the affected land requests otherwise in writing to the Planning Board.
 - c. At the time of decommissioning, the Applicant may provide evidence of plans for continued beneficial use of any or all of the components of the Solar Energy System. Any changes to the approved decommissioning plan shall be subject to review and approval by the Planning Board.
 - d. An estimate prepared by a Professional Engineer of the total cost of decommissioning value of the equipment and itemization of the estimated major expenses, including the projected costs of measures taken to minimize or prevent adverse effects on the environment during implementation of the decommissioning plan. The itemization of major costs may include, but is not limited to, the cost of the following activities: panel removal, panel foundation removal and permanent stabilization, building removal and permanent stabilization, transmission corridor removal and permanent stabilization and road infrastructure removal and permanent stabilization.
 - e. Demonstration in the form of a performance bond, surety bond, letter of credit, or other form of financial assurance as may be acceptable to the Planning Board that upon the end of the useful life of the Solar Energy System the Applicant will have the

necessary financial assurance in place for 150% of the estimated total cost of decommissioning, subject to a review of such cost by the Code Enforcement Officer. The financial assurance shall include a provision granting the Town the ability to access the funds and property and perform the decommissioning if the facility is abandoned or the Applicant or subsequent responsible party fails to meet their obligations after reasonable notice, to be defined in the agreement and approved by the Planning Board. For a Medium Scaled SES, the Applicant may propose securing the necessary financial assurance in phases, if the total required financial assurance is in place a minimum of 5 years prior to the expected end of the useful life of the Solar Energy System.

- f. The applicant may apply to the Code Enforcement Officer for release of the guarantee at such time that it or its assignees remove the system and associated abandoned structures, and such completed removal is found to be satisfactory by the Code Enforcement Officer.

Section 7. Standard for Approval

In addition to the standards set forth in the Site Plan Review Ordinance, the following standards must also be met:

Large and Medium- Scaled Ground-Mounted Solar Energy Systems:

1. Maximum Land Coverage-The maximum area a solar energy system may cover is fifteen (15) acres, including any structures, security fencing, screening and setback space requirements. All SES should be designed and located to ensure solar and physical access without reliance on and/or interference to/from adjacent properties.
2. Legal Responsibilities - The Applicant must provide proof that it has sufficient right, title or interest to construct, use and maintain the property and any required access drive for the life of the project and including the decommissioning of the project. The roles and responsibilities of the system owner, operator, landowner and any other party involved in the project must be clear and meet the satisfaction of the Planning Board that the public interest is protected. The owner or operator of a Ground Mounted Solar Energy System shall build and maintain it in compliance with all relevant Federal, State and Local Laws, Regulations, and Ordinances.
3. Deed Registration – Any Large or Medium Scaled system shall be incorporated into the description of the real property in the lot/property deed and registered with the Androscoggin County Registry of Deeds as a condition of Planning Board approval.

4. Setback - Structures within a SES, including all solar photovoltaic cells or arrays, shall be set back a minimum of 100 feet from all lot lines. Any solar photovoltaic cells or arrays shall be subject to a maximum height of 10 feet above the ground surface. Any structures accessory to the SES shall be subject to the maximum height regulations specified for principal and accessory buildings within the applicable zoning district.
5. Prohibited Locations – Components of a ground mounted SES shall not be placed within any legal easement or right-of-way location, or be placed within any storm water conveyance system, or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.
6. Utility Notification - No grid-intertied photovoltaic system shall be installed until evidence has been given to the Planning Board that the applicant has an agreement with the utility to accept the power. Off-grid systems are exempt from this requirement.
7. Fence - Ground Mounted Solar Energy Systems shall be fully enclosed by a perimeter fence. Perimeter fences shall be a minimum of ninety-six (96”) inches in height and maintain a continuous boundary with securely gated points of access for personnel, vehicles and maintenance equipment access/egress. Such fences shall allow for small wildlife passage and movement.
8. Signage - A sign shall be required at all points of entry/egress and everyone hundred (100) feet around the perimeter to identify the owner/operator and provide a 24-hour emergency contact phone number. All signage shall be mounted at an elevation no greater than seventy-two (72”) inches and no less than sixty (60”) inches above final grade. Solar Energy Systems shall not be used for displaying any advertising. A clearly visible warning sign shall be placed at the base of all pad-mounted transformers and substations and on the any fence surrounding the SES informing individuals of potential voltage hazards.
9. Screening - Lots on which Ground Mounted Solar Energy Systems are located shall utilize buffers / screening from roads and residences by plantings, berms, and natural topographical features. Ground mounted SES shall be screened from view to the greatest extent practical of any adjacent property that is residentially zoned or used for residential purposes, as well as any public way. The screen shall consist of a tall vegetative barrier which provides a visual screen. In lieu of a vegetative screen, a fence that provides visual screening may be allowed only if a vegetative screen is deemed impractical by the Planning Board.
10. Glare – All SES shall be situated to eliminate concentrated glare onto nearby structures or roadways.

11. Noise – No noise generated by the SES or Solar Related Equipment shall be more than 10 decibels (dB) greater than the preconstruction / existing background level, nor generate a Pure Tone. The background noise limit will be based on background noise during the quietest period of the night, typically 3:00 am.
12. Lighting - Lighting for the SES shall be limited to that required for safety and operational purposes and shall be shielded from interference with abutting properties. Lighting of the SES shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution. Other than lighting required for safety and operational purposes, lighting shall not be illuminated between 9pm and 7am, unless for emergency or temporary maintenance purposes.
13. Utility Connections – The SES owner or operator shall make commercially reasonable efforts, as determined by the Planning Board, to place all utility connections from the solar photovoltaic installation underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

Emergency Services – The SES owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the Fire Chief for his approval. The National Fire Protection Association (NFPA) has guidelines for solar panels, including setback requirements and electrical code compliance. Upon request, the owner or operator shall coordinate with local emergency services in developing an emergency response plan. A KNOX-BOX, or agreed equivalent, shall be provided and installed by the operator to be used to allow emergency service personnel continuous access to the SES. All means of shutting down the SES shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation. In Maine, solar panel installations must also comply with the National Electrical Code (NEC).

Electrical code compliance

- All wiring must comply with the photovoltaic systems standards in the latest edition of the NEC (NFPA 70).
 - The 120% Rule must be followed to prevent overloading the electrical panel. This rule states that the main breaker rating plus the solar system's breaker rating cannot exceed 120% of the busbar's rating.
 - Photovoltaic panels and modules must be listed and labeled by an approved agency.
14. Maintenance Conditions - The SES owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, vegetative screening, fences, landscaping and plantings, and integrity of security measures. The SES must be properly maintained and be kept free from all hazards, including, but not limited to, faulty wiring, loose fastenings, being in an unsafe condition

or detrimental to public health, safety or general welfare. Site access shall be maintained to a level acceptable to the Fire Chief for emergency response. The owner or operator shall be responsible for the cost of maintaining the SES and any access road(s), including regular snow plowing, salting and/or sanding to maintain road access.

15. Satisfaction with All Aspects of Capacity and Plans Submitted -- The Planning Board must find that the Applicant has the financial and technical capacity to finance, safely operate and decommission the SES.
16. Removal - When any portion of a ground mounted SES is removed, any earth disturbance must be graded and re-seeded, unless authorized for another developed use.
17. Preservation of Town's Character - All reasonable efforts, as determined by the Planning Board, shall be made to ensure any SES is consistent with the character of the community via visual consistency with local neighborhood area, maintenance of scenic views, maintenance of open space land and farms, and the Town Comprehensive Plan, and associated Town planning documents.

Small-Scaled Ground-Mounted Solar Energy Systems:

18. Lots - SES shall not exceed 10% coverage of a lot area without a variance. Lot coverage shall be calculated based on the total SES airspace projected over the ground. All SES should be designed and located to ensure solar and physical access without reliance on and/or interference to/from adjacent properties.
19. Setback - Structures within a SES, including all solar photovoltaic cells or arrays, shall be setback a minimum of 50 feet from the side and rear property lines and meet the front setback requirements for structures within the zoning district. Any solar photovoltaic cells or arrays shall be subject to a maximum height of 10 feet above the ground surface. Any structures accessory to the SES shall be subject to the maximum height regulations specified for principal and accessory buildings within the applicable zoning district.
20. Prohibited Locations – Components of a ground mounted SES shall not be placed within any legal easement or right-of-way location, or be placed within any storm water conveyance system, or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.
21. Signage - Solar energy systems shall not be used for displaying any advertising.
22. Screening - Lots on which Ground Mounted Solar Energy Systems are located shall utilize buffers / screening from roads and residences by plantings, berms, and natural

topographical features. Ground mounted SES shall be screened from view of any adjacent property that is residentially zoned or used for residential purposes, as well as any public way. The screen shall consist of a vegetative barrier which provides a visual screen. In lieu of a vegetative screen, a fence that provides visual screening may be allowed only if a vegetative screen is deemed impractical by the Planning Board.

23. Glare – All SES shall be situated to eliminate concentrated glare onto nearby structures or roadways.
24. Lighting - Lighting for the SES shall be limited to that required for safety and operational purposes and shall be shielded from interference with abutting properties. Lighting of the SES shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution. Other than lighting required for safety and operational purposes, lighting shall not be illuminated between 9pm and 7am, unless for emergency or temporary maintenance purposes.

Roof-Mounted Solar Energy Systems:

1. The owner of a Roof-Mounted SES shall provide evidence certified by an appropriately licensed professional that the roof is capable of supporting the collateral load of the SES.
2. A Roof-Mounted SES shall be subject to the maximum height regulations specified for principal and accessory buildings within the applicable zoning district.
3. Glare – A Roof-Mounted SES shall be situated to eliminate concentrated glare onto nearby structures or roadways.
4. For firefighter access, a minimum three (3) foot buffer zone is required from the ridge and one (1) edge of the roof or parapet.

Setback requirements

- Solar panels must be set back from the roof's ridge line to allow for ventilation.
- The setback amount depends on the percentage of the roof covered by the panels.
- For panels covering 33% or less of the roof, the setback is at least 18 in (457 mm).
- For panels covering more than 33% of the roof, the setback is at least 36 in (914 mm).

Section 8. Decommissioning and Removal

1. Any Ground-Mounted Solar Energy System that has reached the end of its useful life, ceases to generate power or has been abandoned shall be removed pursuant to a plan

approved by the Planning Board during the application process. The landowner, or SES owner or operator shall physically remove the installation no more than 180 days after the date of discontinued operations. The owner or operator shall notify the Code Enforcement Officer by certified mail, return receipt requested, of the proposed date of the discontinued operations and plans for removal.

2. For purposes of this Ordinance, “Decommissioning” shall consist of all activities described in 35-A M.R.S. §3491(1), as may be amended or recodified, and shall further consist of:
 - a. Physical removal of all solar energy systems, structures, equipment, security barriers and transmission lines from the site.
 - b. Disposal of all solid and hazardous waste in accordance with Local, State and Federal waste disposal regulations; and
 - c. Stabilize or re-vegetation of the site as necessary to minimize erosion. The Code Enforcement Officer may allow the owner or operator to leave landscaping or designated below-grade foundations to minimize erosion and disruptions to vegetation.
3. Absent a notice of a proposed date of decommissioning or written notice of extenuating circumstances, a Ground Mounted Solar Energy System shall be considered abandoned when it fails to generate at least 10% of the rated nameplate capacity of electricity for a continuous period of twelve (12) months without having first obtained the written consent of the Code Enforcement Officer. Determination of abandonment shall be made by the Code Enforcement Officer.
4. If the owner or operator of a Ground-Mounted Solar Energy System fails to remove the installation in accordance with the requirements of this section within 180 days of abandonment or the proposed date of decommissioning, the Town of Livermore Falls retains the right to use the performance guarantee and any and all legal or available means necessary to cause an abandoned, hazardous or decommissioned solar energy system to be removed at the expense of the owner or operator.

Section 9. Modifications

1. Any physical modification to any existing SES, whether or not existing prior to the effective date of this Ordinance, shall require review and approval under this Ordinance. Any modifications to a Medium-or Large-Scale Ground-Mounted Solar Energy System

made after issuance of the required town permit(s) shall require approval by the Planning Board.

2. Any modifications to a Small-Scaled Ground-Mounted Solar Energy System made after issuance of the required town permit(s) shall require approval by the Code Enforcement Officer.
3. Application fees for modifications shall be as set forth in the Town of Livermore Falls Fee Schedule.
4. Permit fees for modifications shall be as set forth in the Town of Livermore Falls Fee Schedule.

Section 10. Authority

1. This Ordinance is adopted pursuant to the home rule authority enabling provisions of Article VIII, Part 2, Section 1 of the Maine Constitution and, 30-A, M.R.S. § 3001. To the extent that any provision of this Ordinance is deemed invalid by a court of competent jurisdiction, such provision shall be removed from the Ordinance and the balance of the Ordinance shall remain valid.

Section 11. Effective Date and Duration

This Ordinance shall take effect upon enactment by the Town of Livermore Falls unless otherwise provided and shall remain in effect until it is amended or repealed.

Section 12. Enforcement Violations and Penalties

This Ordinance shall be enforced by the municipal officers or their designee. Violation of this Ordinance shall be subject to the enforcement and penalty provisions of 30-A, M.R.S. § 4452.