SECTION VI: SOLAR ENERGY INSTALLATIONS

6.1 PURPOSE

The purpose of this Section is to establish a municipal review procedure and performance standards for solar energy systems and the installation or alteration of such systems.

6.2 SOLAR ENERGY TERMS

BATTERY ENERGY STORAGE: Devices that enable energy from solar energy production to be stored and then released when the power is needed.

SOLAR ARRAY: A group of multiple solar panels or modules with the purpose of harvesting solar energy.

SOLAR ENERGY: Radiant energy (direct, diffused, and/or reflected) received from the sun.

SOLAR ENERGY SYSTEM (SYSTEM): A solar photovoltaic cell, panel, module or array, or solar hot air or water collection device, including all solar related equipment, which relies on solar radiation as an energy source for collection, inversion, storage, and distribution of solar energy for electricity generation or transfer of stored heat.

SOLAR RELATED EQUIPMENT: Items including a solar photovoltaic cell, panel, module or array; solar hot air or water collection device panels; lines; pumps; batteries; inverters; transformers; switches; framing; fencing; foundations; or other structures or equipment used or intended to be used as part of a system for collection and management of solar energy.

6.3 SOLAR ENERGY SYSTEM TYPES AND SIZE

BUILDING-MOUNTED SOLAR ENERGY SYSTEM: A solar energy system that is not a plug-in, small, or roof-mounted solar energy system, as defined herein, and that is built into or mounted on the exterior of a legally-existing or permitted building or structure. The size of a building-mounted system is equal to the combined total area (in square feet) of all the solar panels installed on the same parcel of land.

PLUG-IN SOLAR ENERGY SYSTEMS: A small portable system that is designed, installed and operated in accordance with 35-A MRSA Section 3475, and that can be plugged into a standard one hundred twenty (120)-volt exterior outlet. A plug-in system shall have a combined output capacity of no more than one thousand two hundred (1,200) watts, as measured in alternating current, and is exempt from strict utility interconnection rules for larger systems.

COMBINATION SOLAR ENERGY SYSTEMS: A solar system that utilizes a combination of roof-, building-, and/or ground-mounted solar arrays as components of a

single system. The size of a combined system is the combined total area (in square feet) of the roof-, building-, or ground-mounted components, calculated in accordance with this section.

GROUND-MOUNTED SOLAR ENERGY SYSTEMS: A free-standing solar system that is not a plug-in or small solar energy system, as defined herein, and that is structurally mounted directly on or in the ground or on a pole. The size of a ground-mounted system or the ground-mounted portions of a combination system is equal to the total land area (in square feet), located within the same parcel of land, where the vegetation would be permanently removed or altered and will be maintained at less than three (3) feet above ground for purposes of construction, operation or maintenance. If removal or alteration of the existing vegetation is not required for construction, operation or maintenance, then the area is equal to the combined total area (in square feet) of all the solar panels installed on the same parcel of land.

ROOF-MOUNTED SOLAR ENERGY SYSTEMS: A solar system that is not a plug-in or small solar energy system, as defined herein, and that is mounted on the roof of a legally-existing or permitted building or structure. The size of a roof-mounted system is equal to the combined total area (in square feet) of all the solar panels installed on the same parcel of land.

SMALL SOLAR ENERGY SYSTEM: A solar system that is not a plug-in system, is not connected to a utility power grid, and is fifty (50) square feet or less in size, calculated in accordance with this section.

6.4 PERMITTING REQUIREMENTS

New solar energy systems and modifications to the size, type, or placement of existing systems shall require a permit in accordance with Table 6.4.1 and be in conformity with the applicable provisions of this and other Town ordinances in effect on the date of such action.

For purposes of this Ordinance, roof- or building-mounted systems or the roof- or building-mounted components of a combination system that do not increase the footprint of the structure on which they are mounted are not considered to be separate structures. Ground-mounted systems or the ground-mounted portions of combination systems are considered to be separate structures, and subject to the provisions of this Ordinance that are applicable to other structures.

SYMBOL	DESCRIPTION
N	Use prohibited.
Y	Use allowed without a permit, subject to all applicable standards, as found in this Ordinance.
CEO	Use allowed with a permit issued by the Code Enforcement Officer (CEO).
PB	Use allowed with an application to, review and approval by the Planning Board, followed by a permit issued by the Code Enforcement Officer.

6.4.1	SOLAR ENERGY SYSTEM TYPE	
1.	Portable plug-in solar energy systems, as defined herein	Y
2.	Small solar energy systems, as defined herein	Y
3.	Roof-mounted or building-mounted solar energy systems that do not increase the footprint of the structure on which they are mounted	CEO
4.	Roof-mounted or building-mounted solar energy systems that increase the footprint of the structure on which they are mounted and all ground-mounted systems and the ground-mounted portions of combination systems located outside the Shoreland Zone	CEO
5.	Roof-mounted or building-mounted solar energy systems that increase the footprint of the structure on which they are mounted and all ground-mounted systems and the ground-mounted portions of combination systems located inside the Shoreland Zone	PB
6.	Battery energy storage devices that are connected to a utility power grid	CEO
7.	Ground-mounted solar energy systems or the ground-mounted portions of combination systems with a size greater than ten thousand (10,000) square feet	N

6.5 PERMIT APPLICATION REQUIREMENTS

1. An application for a permit shall be made on a form prescribed by the Code Enforcement Officer or Planning Board, as applicable.

2. Applications for construction of all ground-mounted and the ground-mounted portions of combination solar energy systems with a size greater than two thousand (2,000) square feet shall contain an erosion control and stormwater runoff plan.
    a) Appropriate erosion control measures shall be installed during construction and removed after construction is complete and any disturbed soils are permanently stabilized.
    b) The plan shall show the permanent revegetation or other stabilization measures to be completed after construction and the area, including the land area calculation in square feet, where vegetation will be permanently maintained at less than three (3) feet above ground.
    c) All construction debris shall be disposed of offsite in accordance with Subsection 6.8.4., below.

3. Reasonable efforts shall be taken, as determined by the reviewing entity listed in Table 6.4.1, to minimize visual impacts by preserving natural vegetation, screening abutting properties, and protecting scenic resources. Applications for construction of all ground-mounted and the ground-mounted portions of combination solar energy systems with a size greater than two thousand (2,000) square feet shall contain a visual screening plan.
    a) The plan shall provide for a visual buffer between the above ground portions of the system and:

i. views from non-compatible abutting properties;
ii. views of and from scenic resources as identified either in the comprehensive plan or by a State or Federal agency, a public outdoor recreation or conservation area, public waters, and other public areas; and
iii. views from public roadways.

b) When natural features such as topography, gullies, stands of existing trees, shrubbery, or rock outcrops do not exist or are insufficient to provide a visual buffer, other supplemental buffers shall be provided.

c) Wherever possible, supplemental vegetative buffers are preferred over other kinds of visual screening. When vegetative screening is proposed, the plan shall provide descriptive information and a drawing showing the amount, type, size and location of proposed plantings. Proposed plantings shall consist of native, non-invasive species.

4. Battery energy storage devices that are connected to a utility grid may be housed in businesses, residences, or accessory structures. Lithium, lithium iron phosphate and lead-acid batteries used for energy storage require fire department notification and a floor plan to be submitted showing the location of the battery energy storage within the structure.

6.6 PERFORMANCE STANDARDS

1. All components of a solar energy system shall be installed in accordance with standards set forth by the manufacturer, solar industry, UL LLC (formerly known as Underwriters Laboratory), National Electric Code (NEC), and National Fire Protection Association (NFPA).

2. No component of a roof-mounted or building-mounted solar energy system shall restrict access to any point of egress, including second floor egress windows.

3. Solar panel placement shall be prioritized to minimize or negate solar glare onto nearby properties or scenic or public resources as defined in Subsection 6.5.3, above, without unduly impacting the functionality or efficiency of the system.

4. Access Entrance requirements: All ground-mounted and the ground-mounted portions of combination solar energy systems with a size greater than two thousand (2,000) square feet shall provide for emergency vehicle access in accordance with the applicable requirements of Section 5.2.3. of this Ordinance.

5. Setback requirements: Ground-mounted and the ground-mounted portions of combination solar energy systems are subject to structure setback and dimensional requirements set forth in Section 5.1 of this Ordinance and, as applicable, Section 15.B of the Town of Bremen Shoreland Zoning Ordinance.

6. Immediate action shall be taken shall be taken to contain any potential contamination of the environment and to prevent harm to people, property, or the environment from solar panels and/or battery energy storage devices that are damaged due to inclement/severe weather and or other outside forces or prior to repair, replacement or removal. Such panels shall be repaired, replaced or removed within one hundred twenty (120) days of damage. Disposal of damaged or removed materials shall be in accordance with the State of Maine Solid and Hazardous Waste Management Rules, as applicable.

6.7 ABANDONMENT

Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, a system shall be considered abandoned upon failing to generate or utilize generated electricity for more than twelve (12) continuous months without first having obtained the written consent of the CEO that abandonment has not occurred. Final determination of abandonment shall be made by the CEO.

6.8 DECOMMISSIONING

A solar energy system, including any battery energy storage device, located in the Town of Bremen that has reached the end of its useful life or has been abandoned consistent with Section 6.7 of this Ordinance shall be removed. The owner or operator shall take the following steps within twelve (12) consecutive months of the discontinuation of operation or within six (6) continuous months of the date of abandonment:

1. Depowering: As applicable, the solar energy system shall be fully disconnected from the electrical grid by a licensed professional.

2. Component Removal: Panels, inverters, racking, wiring and batteries shall be removed from the property.

3. Reuse/Recycling: Reuse/recycling of system components as much as possible is encouraged. Some functioning panels can be salvaged or repurposed by local solar companies. Recycling of solar panels shall be through a facility and process approved by the Maine Department of Environmental Protection.

4. Disposal: Photovoltaic equipment and materials, including batteries, shall not be put in with household trash. Disposal of all materials shall be in accordance with the State of Maine Solid and Hazardous Waste Management Rules, as applicable.

5. Site Remediation: Stabilization or revegetation of the site shall be completed, as necessary, to minimize erosion.