Document #2

Amendments to the Town of Dover-Foxcroft Land Use Ordinance pertaining to the regulation of Solar Energy Systems

Draft: 5/12/2020

Proposed amendments are in blue and red. **Blue** is text to be added. **Red** are deletions of existing text.

Minor formatting to the tables is not shown in blue or red.

If adopted these amendments will be inserted into the Land Use Ordinance with page numbers and the table of contents adjusted to be consistent with the Ordinance layout.

ARTICLE I. GENERAL PROVISIONS

Section 1.12 Definitions

**Solar Energy System:** A complete assembly consisting of one or more solar collectors and associated mounting hardware or equipment, intended to provide for the collection, storage and distribution of solar energy for heating or cooling, electricity generation, or solar/thermal hot water systems, with a capacity of no more than 250 kilowatts and that occupies less than 9,000 square feet in area.

**Solar Energy System Definitions: (Adopted 2020)**

*Electricity Generation (production, output)*: The amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatt-hours (kWh) or megawatt-hours (MWh).

*Mounted*: The manner in which a solar PV system is affixed to the roof or ground.

*Photovoltaic (PV) System*: A Solar Energy System that produces electricity through the use of semiconductor devices, called photovoltaic cells, which generate electricity when exposed to sunlight.

*Power*: The rate at which work is performed (the rate of producing, transferring, or using energy).

*Power* is measured in watts (W), kilowatts (kW), and megawatts (MW).

*Solar Array*: Multiple solar panels combined together to create one system.

*Solar Collector*: A solar PV cell, panel, or array, or solar thermal collector device, that relies upon solar radiation as an energy source for the generation of electricity or transfer of stored heat.

*Solar Energy System*: A complete assembly of one or more solar collectors and solar-related equipment intended to provide for the collection, storage and distribution of solar energy for heating or cooling, electricity generation, or solar/thermal hot water systems. Solar Energy Systems may consist of ground-mounted, roof-mounted and building integrated solar collector devices, or other solar related equipment.

*Solar Energy System, Ground-Mounted*: A Solar Energy System that is structurally mounted to the ground, including, but not limited to a pole-mounted system or a system mounted on concrete pads, and whose physical size based on total airspace projected over the ground is equal to or
greater than 250 square feet, and a Solar Energy System that is not roof-mounted or building integrated.

*Solar Energy System, Less than 250 Square Feet:* A Solar Energy System whose physical size based on total airspace projected over the ground, building or structure is less than 250 square feet.

*Solar Energy System, Roof Mounted or Building Integrated:* A Solar Energy System in which solar panels are mounted on top of the roof of a structure either as a flush-mounted system or as modules fixed to frames which can be tilted toward the south at an optimal angle. A building integrated Solar Energy System is one that is an integral part of a building and includes, but is not limited to, photovoltaic or hot water systems that are contained within roofing materials, windows, walls, skylights and awnings. These Solar Energy Systems have a physical size based on total airspace projected over or onto a building or structure equal to or greater than 250 square feet, and are not ground-mounted Solar Energy Systems.

*Solar Energy System, (Size):*
- **Large:** A ground-mounted Solar Energy System whose physical size based on total airspace projected over the ground is equal to or greater than 3 acres, but not larger than 40 acres.
- **Medium:** A ground-mounted Solar Energy System whose physical size based on total airspace projected over the ground is equal to or greater than 1,700 square feet but less than 3 acres.
- **Small:** A ground-mounted Solar Energy System whose physical size based on total airspace projected over the ground is 250 square feet or more and less than 1,700 square feet.

*Solar Glare:* The potential for solar panels to reflect sunlight, with intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

*Solar Photovoltaic (Solar PV) System:* A Solar Energy System consisting of photovoltaic cells, made with semiconducting materials that produces electricity (in the form of direct current (DC)) when they are exposed to sunlight. A typical PV system consists of PV panels (or modules) that combine to form an array; other system components may include mounting racks and hardware, wiring for electrical connections, power conditioning equipment, such as an inverter and/or batteries.

*Solar Panel (or module):* A device for the direct conversion of sunlight into useable solar energy, such as electricity or heat.

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

*Structure:* Anything constructed or erected, the use of which requires a fixed location on or in the ground or in the water, or an attachment to something having a fixed location on the ground, including buildings, driveways, parking lots, wind turbines, ground-mounted Solar Energy Systems, outdoor wood boilers, water towers, swimming pools, silos, gas or liquid storage tanks that are principally above ground, signs, commercial park rides and games, carports, porches, decks, and other building features. “Structure” does not include sidewalks, fences, field or garden walls or embankment retaining walls, flagpoles, poles and wiring and other aerial equipment normally associated with service drops, including guy wires and guy anchors; subsurface waste water disposal systems as defined in Title 30-A, section 4201, subsection 5, as amended; geothermal heat exchange wells as defined in Title 32, section 4700-E, subsection 3-C, as amended; or wells or water wells as defined in Title 32, section 4700-E, subsection 8, as amended. *(Amended 2020)*

**ARTICLE II. LAND USE DISTRICTS**
Table 2.5.1 Land Uses by District (Page 7) *(Amended 2020)*

<table>
<thead>
<tr>
<th>Industrial Uses Category</th>
<th>Growth Districts</th>
<th>Rural Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Village</td>
<td>Light Industrial</td>
</tr>
<tr>
<td>18</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>Other Uses Category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Public transportation facility</td>
<td>S/CEO</td>
</tr>
<tr>
<td>4</td>
<td>Signs</td>
<td>P/CEO</td>
</tr>
<tr>
<td>6</td>
<td>Solar energy system, less than 250 square feet</td>
<td>YES</td>
</tr>
<tr>
<td>67</td>
<td>Solar energy system, roof-mounted and building integrated, and small ground-mounted</td>
<td>P/CEO</td>
</tr>
<tr>
<td>8</td>
<td>Solar energy system, medium ground-mounted</td>
<td>S/PB</td>
</tr>
<tr>
<td>9</td>
<td>Solar energy system, large ground-mounted</td>
<td>S/PB*</td>
</tr>
<tr>
<td>10</td>
<td>Utility facility, large</td>
<td>NO</td>
</tr>
<tr>
<td>11</td>
<td>Utility facility, small</td>
<td>YES</td>
</tr>
<tr>
<td>12</td>
<td>Wind energy system</td>
<td>P/CEO</td>
</tr>
</tbody>
</table>

*Note: Within the Village District a large ground-mounted Solar Energy System shall not be located on a parcel of land or combined adjacent parcels of land under the same ownership of less than 30 acres in size.*
Notes to Table 2.6.1 Dimensional Requirements

5 Lot Coverage is the percentage of the lot area covered by buildings, parking areas, driveways, sidewalks, patios, and other impervious areas as defined in Article I, Section 1.12 (Definitions). Only the paved or otherwise impervious areas of sites on which ground-mounted Solar Energy Systems are installed shall be counted in the lot coverage calculation. (Amended 2020)

4 Structure Setbacks from Lot Lines:

f. Exceptions for Accessory Buildings and small ground-mounted Solar Energy Systems:

1) When located beyond the rear of the principal building, an accessory building no larger than 150 square feet in floor area or a small ground-mounted Solar Energy System with a footprint of no more than 150 square feet may be located closer to the property line than the required minimum side or rear lot line setbacks in Table 2.6.1, but in no case shall the accessory building or small ground-mounted Solar Energy System be located less than 5 feet from a side or rear lot line; 2) When located within the Village District, Hamlet District, or the Downtown District, a single story, accessory building of up to 576 square feet (e.g., 24’ x 24’, 2-car garage, carport) or ground-mounted Solar Energy System with a footprint of no more than 576 square feet may be located closer to the property line than the required minimum side or rear lot line setbacks in Table 2.6.1, but in no case shall the accessory building or ground-mounted Solar Energy System be located less than 5 feet from a side or rear lot line. (Amended 2020)

6 Building/Structure Height:

a. The Planning Board permitting authority may allow structures to be taller than the maximum heights in Table 2.6.1 where the increased height is essential to the use and will not create a public health or safety hazard. In no case shall the increased height (e.g., story of the building) be used for human habitation or as a daily work space. Examples of structures that might require more height include: wind turbines and telecommunications towers (see also note 4. i, above); agricultural silos; industrial processing structures; roof-mounted Solar Energy Systems; water towers and other structures associated with utilities. The Board-permitting authority shall seek input from the Fire Chief, Building Code Inspector, and other Town officials, as appropriate in making this determination. Structure heights may also be limited by the Federal Aviation Administration, if located in the vicinity of an airport.

b. Ground-mounted Solar Energy Systems located in the Downtown, Village, Hamlet or Rural Residential Districts shall not exceed 12 feet in height when oriented at maximum tilt, except that the maximum height is 22 feet for systems set back at least 30 feet from any property line.
ARTICLE VI. SITE PLAN REVIEW

<table>
<thead>
<tr>
<th>Impact or Use Criteria (New and Expanded Uses)</th>
<th>Land Use District</th>
<th>Use or Threshold</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Mobile Home Park New or Expanded</td>
<td>All Districts where allowed.</td>
<td>3 to 8 units</td>
<td>Minor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 8 units</td>
<td>Major</td>
</tr>
<tr>
<td>8. New or Expanded Adult Business Establishment</td>
<td>All Districts where allowed.</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td>9. New or Expanded Bulk Storage of Chemicals and Petroleum Products, Principal Use</td>
<td>All Districts where allowed.</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td>10. New or Expanded Manufacturing, Light</td>
<td>Village, Commercial, Rural Residential, Farm and Forest Light Industrial, Industrial</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All such uses</td>
<td>Minor</td>
</tr>
<tr>
<td>11. New or Expanded Manufacturing, Heavy</td>
<td>All Districts where allowed.</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td>12. New or Expanded Sawmill, Permanent</td>
<td>All Districts where allowed.</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td>13. New or Expanded Slaughterhouse</td>
<td>All Districts where allowed.</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td>14. New or Expanded Air Transportation Use</td>
<td>All Districts where allowed.</td>
<td>All such uses</td>
<td>Major</td>
</tr>
<tr>
<td>15. New or Expanded Extractive Industry</td>
<td>All Districts where allowed.</td>
<td>Up to 30,000 sq.ft. of disturbed area</td>
<td>Minor</td>
</tr>
<tr>
<td>16. New or Expanded Extractive Industry</td>
<td>All Districts where allowed.</td>
<td>30,000 sq. ft. or more of disturbed area</td>
<td>Major</td>
</tr>
<tr>
<td>16.18. Reserved Solar Energy System, Large Ground-Mounted</td>
<td>All Districts where allowed.</td>
<td>Large</td>
<td>Major</td>
</tr>
<tr>
<td>19. Reserved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Reserved</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Where there are conflicts in the classification of uses as “minor” or “major”, the “major” classification shall apply, unless specifically specified otherwise in this Ordinance.
2. Table 6.2 (Classification Criteria for Site Plan Review Projects - Page 2) shall be amended to include reference to any Mega Projects, upon the adoption of Land Use Ordinances Pertaining to Mega Projects.
ARTICLE VIII. SPECIAL ACTIVITY OR DISTRICT PERFORMANCE AND DESIGN STANDARDS

Section 8.11 Solar Energy Systems (Adopted 2020)

8.11.1 Applicability. Section 8.11 is applicable to the following:

A. All roof-mounted and building integrated Solar Energy Systems, and all small, medium, and large ground-mounted Solar Energy Systems, modified or installed after the enactment of Section 8.11.

B. Any upgrade, modification or structural change that materially alters the size, placement or output of an existing applicable Solar Energy System shall comply with the provisions of Section 8.11.

8.11.2 Basic Standards for All Solar Energy Systems.

A. Solar Energy Systems and equipment shall not present any unreasonable safety risks, including, but not limited to, the following: 1) weight load; 2) wind resistance; 3) ingress or egress in the event of fire or other emergency; or 4) proximity of a ground-mounted system relative to buildings.

B. All Solar Energy Systems shall be designed, erected, installed and operated in accordance with all applicable building, electrical and fire codes, and any other applicable regulations and standards.

C. Prior to operation, electrical connections must be inspected and approved by a licensed electrician in accordance with the National Electrical Code (NFPA 70), as applicable in the Town of Dover-Foxcroft.

D. Any connection to a public utility grid must be approved by the appropriate public utility.

E. A Solar Energy System or any of its components shall not be placed within any legal easement or right-of-way location, or be placed within any stormwater conveyance system, or in any other manner that would alter or impede stormwater runoff from collecting in a constructed stormwater conveyance system.

F. Solar panel placement should be designed to minimize or negate any solar glare onto nearby properties or roadways, to the greatest extent practicable.

G. Each Solar Energy System shall be maintained as necessary to ensure that it is operating safely and as designed over its useful lifetime.

H. If a Solar Energy System ceases to perform its originally intended function for more than 12 consecutive months, the owner or operator shall remove the collector, mount and associated equipment by no later than 90 days after the end of the twelve-month period, unless the permitting authority grants an extension due to extenuating circumstances.

I. The Town shall revoke any approvals and/or pursue removal of the Solar Energy System at the owner or operator’s expense in any of the following circumstances:

1. The Solar Energy System is not installed and functioning within 12-months from the date of approval under this Ordinance.

2. The Solar Energy System is at any time left in an unsafe condition in respect to federal, state or local safety standards (as determined by the Town).

3. The Solar Energy System has not been brought back to a safe condition/operation or removed from the site within the required timeframe.

4. The Solar Energy System is defective or abandoned and has not been removed from the site within required timeframe.
8.11.3 Additional Standards for Medium and Large Ground-Mounted Solar Energy Systems. In addition to the standards in Section 8.11.2, medium and large Solar Energy Systems shall comply with the following:

A. Utility connections - Overhead or pole-mounted electrical wire shall be avoided to the extent possible within the facility.

B. Solar Energy Systems shall be designed to minimize visual impacts to the greatest extent practicable while still allowing for efficient performance. This can be accomplished by preserving natural vegetation, screening abutting properties and public roads, and other measures in accordance with Section 7.11 of this Ordinance.

C. Solar Energy Systems shall be designed to prevent unauthorized access to the conductors and other electrical components as required in the NFPA 70, National Electric Code, most current edition, to include, but not be limited to, fencing around the facility. Where fencing is used, fences should be elevated by a minimum of 5 inches to allow for passage of small terrestrial animals.

D. Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of ground-mounted Solar Energy Systems. Mowing and the use of herbicides and pesticides shall be minimized to the extent practicable. Native, pollinator-friendly seed mixtures shall be used to the extent possible. No prime agricultural soil or significant volume of topsoil shall be removed from the site for installation of the system.

E. Signs on Solar Energy Systems shall identify the owner/operator and provide a 24-hour emergency contact phone number. Clearly visible warning signs informing individuals of potential voltage hazards shall be placed at potentially hazardous locations and on any required fencing surrounding the Solar Energy System.

F. The Solar Energy System owner/operator shall provide a copy of the project summary, electrical schematic, and site plan to the Dover-Foxcroft Code Enforcement Officer and Fire Department. The Solar Energy System owner/operator shall cooperate with the Fire Department in developing an emergency response plan. All means of shutting down the system shall be clearly marked. The owner/operator shall provide to the Code Enforcement Officer the name and contact information of a responsible person for public inquiries throughout the life of the installation.

G. The Solar Energy System owner/operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to the Code Enforcement Officer and the Fire Department. The owner/operator shall be responsible for the cost of maintaining the Solar Energy System and any access road(s), unless the road is accepted by the Town as a public way.

8.11.4 Supplemental Submissions for Medium and Large Ground-Mounted Solar Energy Systems. In addition to the submissions required in other articles of this Ordinance, applicants for medium and large ground-mounted systems must submit the following:

A. Name, address, and contact information of the proposed system installer, the project proponent, project proponent agent, and all co-proponents or property owners, if any.

B. Plan drawings of the Solar Energy System signed by a professional engineer licensed to practice in the State of Maine showing the proposed layout of the system, any potential shading from nearby structures, the distance between proposed solar collector and all property lines and existing on-site buildings and structures, the tallest finished height of the Solar Energy System, proposed permanent access roads, proposed overhead and underground utilities, disturbed area
and impermeable area estimates, proposed erosion control, and if required by the Maine Department of Environmental Protection (DEP), a construction erosion and sedimentation control plan that is in compliance with DEP requirements.

C. Documentation of the major Solar Energy System components to be used, including the panels, mounting systems, and inverters.

D. For grid-intertie photovoltaic systems, evidence of meeting the applicable electric utility’s transmission and distribution interconnection requirements for generation. This can be a condition of approval if evidence is provided that the necessary application has been accepted for review by the utility.

E. A one-line or three-line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods.

F. An operations and maintenance plan for the Solar Energy System, which shall include measures for maintaining safe access to the installation, stormwater controls, vegetation management, as well as other general procedures for operational maintenance of the installation.

G. Evidence that all other required approvals have been obtained, such as, but not limited to, a Maine Department of Environmental Protection Stormwater Permit and/or Site Location of Development Permit, and approval from the Maine Public Utilities Commission. At the discretion of the permitting authority, these approvals may be conditions of the Town’s approval.

H. A decommissioning and site restoration plan to include at a minimum:
   1. The trigger for implementing the decommissioning plan;
   2. The anticipated operational life of the project;
   3. A detailed estimate of the costs for decommissioning the entire project including costs associated with restoring the project area;
   4. Documentation of financial assurance demonstrating that the decommissioning and restoration costs will be fully funded prior to the start of construction pursuant to Section 8.11.4. The permitting authority may waive Section 8.11.4, H, 5 and Sections 8.11.5, 2 and 3 for a medium ground-mounted Solar Energy System whose physical size based on total airspace projected over the ground is less than 20,000 square feet.

8.11.5 Abandonment and Decommissioning of Medium and Large-scale Ground Mounted Solar Energy Systems.

A. Definition: Abandonment: The date at which any part of a Solar Energy System has been out of service for a continuous period of 12 months.

B. The owner or operator of the Solar Energy System, at their expense, shall be responsible for decommissioning and site restoration when the Solar Energy System has reached the end of its useful life, or is otherwise determined to be abandoned, unless an extension is granted by the Planning Board. The owner or operator shall notify the Code Enforcement Officer by certified mail of the proposed date of discontinued operations and plans for removal. Removal and site restoration shall consist of the following:
   1. Physical removal of all ground-mounted Solar Energy Systems including solar photovoltaic installations, miscellaneous man-made structures, equipment, security barriers and transmission lines from the site.
   2. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.
3. Stabilization or re-vegetation of the site as necessary to minimize erosion. The CEO, in conformance with applicable regulations, may allow the owner or operator to leave existing landscaping or specifically designated below-grade foundations in place in order to minimize erosion and disruption to vegetation.

C. Financial Surety. Before the start of construction, the owner or operator of a Solar Energy System shall provide a form of surety, either though escrow account, performance bond or letter of credit from a creditable financial institution, in an amount sufficient to cover the cost of decommissioning in the event the Town determines the Solar Energy System to be abandoned in accordance with Section 8.11.5,A above. The financial guarantee shall include a provision granting and guaranteeing the Town the authority to access the funds and property and perform the decommissioning should the facility be abandoned and the owner or operator fails to meet their obligations to remove the Solar Energy System. This amount shall be based upon a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer, and submitted to the Planning Board at the time of application. The amount shall include a mechanism for calculating increasing removal costs due to inflation.

D. If the owner or operator of the Solar Energy System fails to remove the installation in accordance with requirements of this section within 6 months of abandonment of the end of the useful life or date of abandonment, the Town retains the right to use the performance guarantee and all other available means to cause an abandoned, hazardous or decommissioned Solar Energy System to be removed.

E. The owner may apply to the Planning Board for release of the guarantee at such time that it or its assigns remove the system and associated abandoned structures, and such completed removal is found to be satisfactory by the Dover-Foxcroft Town Manager.
SUMMARY
Proposed Amendments to the Town of Dover-Foxcroft Land Use Ordinance Pertaining to the Regulation of Solar Energy Systems Draft 5/12/2020

What is the purpose of the amendments?

- The proposed amendments will allow and regulate solar energy systems in Dover-Foxcroft.
- The demand for solar energy is increasing rapidly in Maine and beyond.
- People want solar energy systems for their homes and businesses.
- Developers are looking for places to build solar energy systems so they can sell power to utility companies serving the electrical grid.

What are the proposed amendments?

- Small-scale solar energy systems (less than 1,700 sq. ft.) and roof top/building-integrated systems (any size) would require a building permit from the Code Enforcement Officer.
- Medium-scale (1,700 sq. ft. to 3 acres) and large-scale systems (3 acres to 40 acres) would have to meet specific standards and would only be allowed in certain land use districts.
- Solar energy systems larger than 40 acres would not be allowed in Dover-Foxcroft.