Adopted June 6, 2022

ORRINGTON SOLAR ARRAY ORDINANCE

Section 1. Purpose

The purpose of this ordinance is to accomplish the following objectives with the least possible regulation.

1. To encourage the development of on-site energy production and consumption. When possible to encourage the implementation of agrivoltaic methods and practices.

2. To protect the public health and safety.

3. To promote the general welfare of the community.

4. To conserve the environment, wildlife habitat, fisheries, and unique natural areas

5. To fit these systems harmoniously into the fabric of the community by providing standards for alternative energy systems and other types of arrays, and

6. Protect the property values in the Town of Orrington.

Section 2. Authority

The Orrington Planning Board is vested with the authority to review and approve, approve with conditions, or reject any application for Solar Energy Conversion Arrays (Arrays) as defined in this Ordinance. An array shall have been approved by the Planning Board before a building permit may be issued under the Orrington's Land Use Ordinance (LUO).

1. In the event the Planning Board requires expert opinions, advice, or testimony during the course of reviewing the application to determine the impact to surrounding properties or public safety implications, or to resolve any other issues regarding the proposal, it shall first use due diligence to obtain and utilize free services from governmental or non-profit sources.

2. Should the Planning Board be unable to obtain and utilize free services, the Select Board may authorize the hiring of independent third-party consultants to review array proposals in order to determine the impact to surrounding properties or public safety implications or resolve any other issues regarding the proposal. The Planning Board shall require the applicant to pay for such services after giving notice to the applicant of the name of the expert, the area of qualification of the expert, and the purpose for which the expert is required and the approximate cost of the expert.

3. The applicant shall be provided with an opportunity to meet with the Code Enforcement Officer to arrange a schedule for payment of the costs.

4. The applicant shall have the right to request a public hearing before the Board of Appeals to determine if the experts, as indicated by the Planning Board, are necessary to a determination of any issue, and if the approximate costs of the expert are reasonable. The applicant shall request the hearing within 10days of receipt of the notice establishing the necessity and costs of any independent third-party consultant, or such time as is agreed to by the Planning Board and the applicant. It will be the applicant's burden to prove that the requested expert is unnecessary, or that the cost is not reasonable.

In addition to any other applicable provisions of this Ordinance, before granting a Solar Array Complex Plan approval, the Planning Board must find that the proposed plan will comply with the following standards as applicable.

Section 3. Exempt Arrays

The following arrays are exempt from this Ordinance:

1. Roof-mounted on any legally permitted residential or residential accessory structure that does not exceed the State of Maine minimum sizes will be exempted.

2. Ground - or pole-mounted for private use that does not exceed the State of Maine minimum sizes will be exempted.

3. Building integrated solar (i.e., shingle, hanging solar, canopy, etc.).

4. Repair or replacement of array components that do not enlarge the area of the existing array

5. Commercial buildings utilizing solar energy for on-site operational purposes only.

Section 4. Permitted Arrays

The following arrays are permitted in this Ordinance

1. **Private Residential Solar Energy Systems (PRSES):** An area of land or other area used for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power, and supply electrical or thermal power, primarily or solely for on-site residential use, and consisting of one or more free-standing ground mounted, solar arrays or modules, or solar related equipment, intended to primarily reduce on-site consumption of utility power and/or fuels. Solar arrays or modules that are flush mounted on the roof or walls of private residences shall not be subject to PRESES

performance standards or permit requirements for the same. PRESES can be up to a total of two thousand (2,000) feet in surface area, with a rated nameplate capacity of up to 20kW.

2. **Commercial Solar Energy Systems (CSES):** An area of land or other area used by a business for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power, and supply electrical or thermal power, primarily or solely for commercial use, an consisting of one or more free-standing, ground or roof mounted, solar arrays or modules, or solar related equipment, intended to primarily reduce on-site consumption of utility power and/or fuels. CSES can be up to a total of twenty thousand (20,000) square feet in surface area, with a rated nameplate capacity of up to 250 kW.

3. **Industrial Solar Energy Systems (ISES):** An area of land or other area used by a property owner and/or corporate entity for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power, and supply electrical or thermal power, primarily or solely for off-site grid use, and consisting of one or more free-standing, ground mounted, solar arrays or modules, or solar related equipment, intended to primarily reduce off-site consumption of utility power and/or fuels. ISES can be up to two hundred (200) acres in surface area, and there is no limit on the rated nameplate capacity of an ISES.

Section 5. Solar Array Complex Plan Review

All non-exempt arrays must be approved by the Orrington Planning Board through this Ordinance. The following requirements ·must be included in a Solar Energy Conversion Array application:

1. All application materials required under the Building Permit Ordinance and any applicable fee established by the Board of Selectmen.

2. A site plan showing property lines, the location of any wetlands or flood zones or vernal pools, the location of proposed panels, equipment, fencing and access roads, and the location and setback of any roads or streets.

3. A submission showing results of a Phase 1 Environmental Site Assessment (ESA) by a qualified professional from the site to establish a baseline for soil condition comparison upon decommissioning. The Town reserves the right to request additional ESA's for sites on or adjacent to former landfills or for sites where contamination is discovered during the soil testing process.

4. A decommissioning plan signed by the party responsible for decommissioning and the landowner (if different) whose minimum requirements meet the standards in Section 5 of

this Ordinance. Such plan must be filed in the Penobscot County Registry of Deeds prior to the approval of the solar array plan.

5. A Waste Stream Management Plan (WSMP) for the construction waste and debris at the site of the said Array, including but not limited to cardboard, wood, scrap metal, scrap wire, and clearing and grading wastes, from the construction site and the disposal site(s) of such waste. Information on the amount of material that is being recycled shall be included in the WSMP.

6. The Code Enforcement Officer shall conduct a final inspection to ensure compliance with the approved plan.

Section 6. Guarantee for Removal

At the time of approval of a proposed array, and prior to initiating construction of any array within the Town of Orrington, the applicant must guarantee the costs for the removal of the facility.

1. The amount of the guarantee shall be equal to 125% of the estimated removal cost, provided by the applicant and certified by a professional civil engineer licensed in Maine or a professional array construction company.

2. The owner of the facility shall provide the Planning Board with a revised removal cost estimate and structural evaluation prepared by a professional civil engineer licensed in Maine or a professional array construction company every five (5) years from the date of the Planning Board's approval of the Solar Array Complex plan.

3. If the cost has increased more than fifteen (15) percent, then the owner of the facility shall provide additional security in the amount of the increase. The applicant may also request adjustments in the guarantee.

4. Types and Contents of Guarantee - One of the following performance guarantees chosen by the applicant shall be provided on approval of the application,

a. Interest-Bearing Escrow Account - A cash contribution equal to 125% of the estimated removal cost for the establishment of an escrow account shall be made by either a certified check made out to the Town, direct deposit into a savings account, or purchase of a certificate of deposit

i. For any account opened by the applicant, the Town shall be named as owner or co- owner, and consent of the Town shall be required for withdrawal.

ii. Any interest earned on the escrow account shall be returned to the applicant unless the Town has found it necessary to draw on the account, in which case the interest earned shall be proportionately divided between the amount returned to the applicant and the amount withdrawn to complete the required work.

b. Performance Bond - A performance bond shall detail the conditions of the bond, the method for release of the entire bond or portions of the bond to the Town, and the procedures for collection by the municipality. The bond documents shall specifically reference the array facility for which approval is sought.

c. Irrevocable Letter of Credit - An irrevocable letter of credit from a bank or other lending institution shall indicate that funds have been set aside for the removal of the array facility and may not be used for any other project or loan. The letter of credit shall detail the procedures for collection by the municipality. The conditions and amount of the performance guarantee shall be determined by the Planning Board with the advice of the Town Selectmen, and/or Town Attorney, expenses paid for by the applicant.

Section 7. Decommissioning and Abandonment

The owner or operator of the facility, or the owner of the parcel if there is no separate owner or operator of the facility or if the owner/operator fails to do so, shall do the following as a minimum to decommission the project:

1. Remove all non-utility owned equipment, conduits, structures, fencing, and foundations.

2. Submit the results of Phase 1 ESA by a qualified professional to com pare to the original Phase 1 ESA taken at the time of application. If there is any contamination or pollution in the soils it shall be the responsibility of the operator of the facility to restore the soils to its original state.

3. Revegetate any cleared areas with appropriate plantings that are native to the region according to an approved Solar Array Complex plan, unless requested in writing by the owner of the real estate to not revegetate due to plans for agricultural planting or other development subject to the Planning Board's approval.

4. Fill in all holes, depressions or divots resulting from the construction of the array.

All said removal and decommissioning shall occur within 12 months of the facility ceasing to operate. Abandonment will occur as a result of any of the following conditions unless the lessee

or owner of the facility or of the parcel notifies the Code Enforcement Officer of the intent to maintain and reinstate the operation of the facility within 30 days of the following events:

1. The land lease (if applicable) ends; or

2. The system does not f unction for 12 months; or

3. The system is damaged and will not be repaired or replaced.

4. A notice submitted to the Code Enforcement Officer of the intent to maintain and reinstate the operation of the facility shall be updated every three months with a statement of the progress made towards that goal.

5. If the facility has not returned to operational condition within one year from the date of the first notice of the intent to maintain and reinstate the operation of the facility, the Code Enforcement Officer shall find the facility has been abandoned unless there is documentable evidence that the process has had significant progress and in the Code Enforcement Officer's opinion is likely to be completed in a timely manner.

Upon determination of abandonment based on the foregoing, the Code Enforcement Officer shall notify the party (or parties) responsible by certified mail or by hand delivery with signed receipt that they must remove the facility and fully restore the site in accordance with section 6 subsection (1) of this ordinance within three hundred and sixty five (365) days of notice by the Code Enforcement Officer. A copy of the notice shall be forwarded by the Code Enforcement Officer to the Board of Selectmen.

1. In the event the lessee of the facility fails to decommission the facility as outlined above, the landowner shall decommission the facility within 90 days of notice by the Code Enforcement Officer.

2. In the event the landowner fails to remove the facility as stated above, the Town of Orrington shall have the facility removed and shall reimburse the Town's costs by accessing any performance guarantee provided. Any unpaid costs associated with the removal after one year of removal shall be enforced as a special tax to be assessed against the real estate of the array site,

Section 8. General Standards for all Arrays

1. Unless otherwise specified through a written contract, lease or other agreement, a copy of which is on file with the Orrington Code Enforcement Officer, the property owner of record will be presumed to be the responsible party for owning and maintaining the array.

2. Approval under this Ordinance is conditional upon compliance with all other Orrington Ordinances, the Maine Plumbing and Electrical Codes, Natural Resources

Protection Act, Storm water Management Law or other applicable regulations and any requirements of the local utility if any array is to be connected to any existing electric grid.

3. An array shall not be constructed until the Solar Array Complex plan has been approved by the Planning Board and a Building Permit has been issued by the Code Enforcement Officer and any applicable appeal period having passed without an appeal being filed.

4. All arrays shall be operated and located such that no disruptive electromagnetic interference with signal transmission or reception is caused beyond the site. If it has been demonstrated that the system is causing disruptive interference beyond the site, the system operator shall promptly eliminate the disruptive interference or cease operation of the system.

5. All on-site electrical wires or piping associated with the system shall be installed underground except for "tie-ins" from above-ground mounted installations and to public-utility company transmission & distribution poles, towers and/or lines. This standard may be waived by the Planning Board if the project terrain is determined to be unsuitable for underground installation.

6. The array site shall not display any permanent or temporary signs, writing, symbols, logos, or any graphic representation of any kind except appropriate manufacturer's or installer's identification and warning signs.

7. Array placement must be designed to minimize or negate any solar glare onto nearby properties, or roadways.

8. If lighting is provided at the site, lighting shall be shielded and downcast such that the light does not spill onto the adjacent parcel or the night sky. Motion sensor control is preferred.

9. Any point of potential contact of people or animals with generated electric current must be secured.

10. The boundaries of any nonexempt array that borders any road or any abutting residential dwelling lot shall consist of a vegetated buffer the width of the required setback along that border, in addition to any fence that may be erected, and existing vegetation should be used to satisfy these planting requirements where possible. Berms with vegetation are encouraged as a component of any buffer and the Planning Board may allow up to 25% reduction in the required buffer width where a berm is to be constructed. The buffer shall screen the array from view by the abutting road or any nearby residences to the greatest extent practical. In the event no natural vegetation exists

a plan by a licensed arborist shall be submitted to the Planning Board for approval. The plan shall contain indigenous species of conifers or evergreens and must be maintained to adequately screen the array.

11. Arrays covering permanent parking lots and other hardscape areas approved by the Planning Board are encouraged in order to limit the amount of storm water flowage. Where the array will cover existing hardscape (impermeable surface) areas, the Planning Board may in its discretion waive the vegetated buffer requirement so long as the required setback is met.

12. If electric storage batteries are included as part of any array system, they must be installed according to all requirements set forth in the National Electric Code and State Fire Code when in operation. When no longer in operation, the batteries shall be disposed of in accordance with the laws and regulations of the Town of Orrington and any other applicable laws and regulations relating to solid, special, or hazardous waste disposal.

13. Financial gain from "Net metering' for electric power is not considered a commercial activity if used to offset energy costs of private individuals only.

14. All adjacent landowners shall be notified during the application and review process.

Section 9. Dimensional and Design Standards

1. Setbacks: All parts of the array shall be setback from all property lines a distance equal to the required minimum setback required by the Building Permit and Occupancy Ordinance.

2. Height: A ground- or pole-mounted SECA shall have a maximum height of 20 feet as measured from the ground level to the system's highest point at full tilt.

3. Roof Load: The weight of any array proposed to be roof mounted on any non-exempt structure must be calculated and the applicant must submit a determination by a registered engineer with stamped certification or finding that the load rating of the underlying structure can accommodate the additional weight of the SECA.

4. Lot Coverage: The maximum surface area of a ground - or pole - mounted panel system, regardless of the mounted angle, shall be calculated as part of the overall lot coverage or area of the structure, for the purposes of any applicable Town of Orrington ordinance.

5. Design Standards:

a. Any height limitations of this Ordinance shall not be applicable to roof-mounted solar collectors provided that such structures are erected only to such height as is reasonably necessary to accomplish the purpose for which they are intended to serve.

b. Array installations shall not obstruct solar access to neighboring properties.

c. The array structure shall be a non-reflective color that blends the system and its components into the surrounding landscape to the greatest extent possible and incorporates non-reflective surfaces to minimize any visual disruptions.

d. Severe Weather Construction Standards: The following standards shall be implemented to improve the safety and survivability of solar arrays during severe weather events. These guidelines have been developed by the U.S. Department of Energy Federal Energy Management Program (FEMP). The recommendations by FEMP may change and should be reviewed in addition to the following recommendations.

    a. All fasteners shall be properly torque fasteners rated with true-locking capability (applicable standard: DIN65151). To do so involves using calibrated torque drivers and auditing the results. Product manufacturers and consulting engineers shall specify torques levels and methods for auditing the results. The auditing process shall be a part of the commissioning process. Wedge-lock washes are an example of a highly effective class of locking hardware.

    b. FEMP recommends through-bolting modules with a locking fastener tightened to a specific torque rating as a secure method of attaching modules to the sub-framing structure.

    c. Module selection should be based on the front and back pressure strength rating. Modules should be selected based on the highest ratings or the greatest resistance to loading. ASTM E1830-15 prescribes test parameters for loading (snow and wind), as well as twist test.

    d. Module mounting on a three-frame rail system provides greater rigidity and support in order to reduce bending and twisting.

    e. Framing members should be specified by the consulting engineer designing the project to use frame elements that are sufficiently strong. In general, closed-form tubular frame elements with low drag

coefficients have been proven to be superior. The engineer should follow the latest proven design standards.

f. Perimeter fencing should be of the type to slow damaging winds that could damage or destroy the solar array.

Section 10. Retroactive Clause

Notwithstanding the provisions of 1M.R.S.A §302, and regardless of the date on which it is approved by the voters, this Ordinance shall be effective as of June 6, 2022 and shall govern any and all applications for permits or approvals required under the applicable laws of The Town of Orrington Maine that were or become pending before any officer board or agency of The Town of Orrington on or at any time after June 6, 2022.

Section 11. Conflicts; Savings Clause

Any provisions of the Town's ordinances that are inconsistent with or conflict with the provisions of this Ordinance are hereby repealed to the extent applicable. If any section or provision of this Ordinance is declared by a Court of competent jurisdiction to be invalid, such a declaration shall not invalidate any other section or provision.

Section 12. Violations and Enforcement

Violations of this Ordinance shall be subject to per-day penalties in accordance with 30-A M.R.S. § 4452 and the violator shall be assessed the Town's reasonable attorney fees and costs. The Code Enforcement Officer shall have authority to enforce this Ordinance.

Section 13. Definitions

Agrivoltaics: Agrivoltaics is co-developing the same area of land for solar energy as well as for agriculture. This new farming method combines solar electricity generation with traditional farming on a common agricultural land area.

Array: A Solar Energy Conversion Array. For the purposes of this Ordinance, any single antenna or panel greater than 5,000 square feet of surface area is included in this definition. Examples of arrays are, but are not limited to, solar heating panels, solar photovoltaic panels, concentrated solar thermal installations, and antenna arrays.

Berm: A barrier constructed of landscaped earth, four (4) feet or more in height measured from the outside base of the berm. Berms may be pierced with reasonable access ways no more than twelve (12) feet in width as approved by the Planning Board.

Solar Energy Conversion Array (SECA): The components and subsystems required to convert solar energy into electric or thermal energy suitable for use. The term applies, but is not limited to, solar photovoltaic (PV) systems, solar thermal systems, concentrated solar thermal installations, and solar hot water systems.