

ORDINANCE NO. ____

AN ORDINANCE to create Division 6 of Ch. 115, Art. VII of the Code of Ordinances of the City of La Crosse regarding Solar Energy Systems.

THE COMMON COUNCIL of the City of La Crosse does ordain as follows:

SECTION I: Division 6 of Article VII of Chapter 115 of the Code of Ordinances is hereby created to read as follows:

DIVISION 6. – SOLAR ENERGY SYSTEMS.

Sec. 115-611. - Definitions.

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Building-integrated Solar Energy System means a solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated systems include but are not limited to photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

Grid-intertie Solar Energy System means a photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

Ground-mount means a solar energy system mounted on a rack or pole that rests or is attached to the ground. Ground-mount systems can be either accessory or principal uses.

Off-grid Solar Energy System means a photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by an electric utility company.

Passive Solar Energy System means a solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

Photovoltaic System means a solar energy system that converts solar energy directly into electricity.

Renewable Energy Easement, Solar Energy Easement means an easement that limits the height or location, or both, of permissible development on the burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to wind or sunlight passing over the burdened land, consistent with Wis. Stats. 700.35.

Renewable Energy System means a solar energy or wind energy system. Renewable energy systems do not include passive systems that serve a dual function, such as a greenhouse or window.

Roof-mount means a solar energy system mounted on a rack that is fastened to or ballasted on a building roof. Roof-mount systems are accessory to the principal use.

Roof Pitch means the final exterior slope of a building roof calculated by the rise over the run, typically but not exclusively expressed in twelfths such as 3/12, 9/12, 12/12.

Solar Access means unobstructed access to direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

Solar Farm means a commercial facility that converts sunlight into electricity, whether by photovoltaics (PV), concentrating solar thermal devices (CST), or other conversion technology, for the primary purpose of wholesale sales of generated electricity. A solar farm is the principal land use for the parcel on which it is located.

Solar Garden means a commercial solar-electric (photovoltaic) array that provides retail electric power (or a financial proxy for retail power) to multiple households or businesses residing or located offsite from the location of the solar energy system. A community solar system may be either an accessory or a principal use.

Solar Resource means a view of the sun from a specific point on a lot or building that is not obscured by any vegetation, building, or object for a minimum of four hours between the hours of 9:00 AM and 3:00 PM Standard time on all days of the year.

Solar Collector means a device, structure or a part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.

Solar Collector Surface means any part of a solar collector that absorbs solar energy for use in the collector's energy transformation process. Collector surface does not include frames, supports and mounting hardware.

Solar Daylighting means a device specifically designed to capture and redirect the visible portion of the solar spectrum, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.

Solar Energy means radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

Solar Energy System means a device, array of devices, or structural design feature, the purpose of which is to provide for generation of electricity, the collection, storage and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating.

Solar Heat Exchanger means a component of a solar energy device that is used to transfer heat from one substance to another, either liquid or gas.

Solar Hot Air System (also referred to as *Solar Air Heat* or *Solar Furnace*) means a solar energy system that includes a solar collector to provide direct supplemental space heating by heating and recirculating conditioned building air. The most efficient performance typically uses a vertically mounted collector on a south-facing wall.

Solar Hot Water System (also referred to as *Solar Thermal*) means a system that includes a solar collector and a heat exchanger that heats or preheats water for building heating

systems or other hot water needs, including residential domestic hot water and hot water for commercial processes.

Solar Mounting Devices means racking, frames, or other devices that allow the mounting of a solar collector onto a roof surface or the ground.

Solar Storage Unit means a component of a solar energy device that is used to store solar generated electricity or heat for later use.

Sec. 115-612. - Scope.

This article applies to all solar energy installations in the City of La Crosse.

Sec. 115-613. - Purpose.

The City of La Crosse has adopted this regulation for the following purposes:

- (a) *Comprehensive Plan Goals.* To meet the goals of the Comprehensive Plan and preserve the health, safety, and welfare of the Community's citizens by promoting the safe, effective and efficient use of solar energy systems installed to reduce the on-site consumption of fossil fuels or utility-supplied electric energy. The following solar energy standards implement the following objectives from the Comprehensive Plan:
 - (1) *Objective.* Safeguard and improve environmental features as a means of promoting sustainable urban development, revitalization, and quality of life.
 - (2) *Objective.* Improve building and site design in residential, commercial, and industrial buildings to serve current and future generations.
 - (3) *Objective.* Use "Smart Growth" strategies to maintain the City's leadership role in regional economic development.
 - (4) *Objective.* Invest in system improvements strategically to ensure they are cost-effective.
 - (5) *Objective.* Establish and maintain an open, fair planning and regulatory process that is consistent with other jurisdictions.
- (b) *Greenhouse Gas Emission Goals.* The City of La Crosse has committed to reducing carbon and other greenhouse gas emissions. Solar energy is an abundant, renewable, and nonpolluting energy resource and that its conversion to electricity or heat will reduce our dependence on nonrenewable energy resources and decrease the air and water pollution that results from the use of conventional energy sources.
- (c) *Wisconsin Smart Planning.* Wisconsin Smart Planning principles must be considered when local governments make planning, zoning, development, and resource management decisions. The City of La Crosse has adopted Principle 3 – Clean, Renewable, and Efficient Energy – to encourage the promotion of clean energy use through increased access to renewable energy resources.
- (d) *Infrastructure.* Distributed solar photovoltaic systems will enhance the reliability and power quality of the power grid and make more efficient use of The City of La Crosse's electric distribution infrastructure.
- (e) *Local Resource.* Solar energy is an under used local energy resource and encouraging the use of solar energy will diversify the community's energy supply portfolio and exposure to fiscal risks associated with fossil fuels.
- (f) *Improve Competitive Markets.* Solar energy systems offer additional energy choice to consumers and will improve competition in the electricity and natural gas supply market.

Sec. 115-614. - Permitted Accessory Use.

Solar energy systems shall be allowed as an accessory use in all zoning classifications where structures of any sort are allowed, subject to certain requirements as set forth below.

- (a) Height. Solar energy systems must meet the following height requirements:
- (1) Building- or roof- mounted solar energy systems shall not exceed the maximum allowed height in any zoning district. For purposes for height measurement, solar energy systems other than building-integrated systems shall be given an equivalent exception to height standards as building-mounted mechanical devices or equipment per Sec. 115-390(1)b.
 - (2) Ground- or pole-mounted solar energy systems shall not exceed 20 feet in height when oriented at maximum tilt.
- (b) Set-back. Solar energy systems must meet the accessory structure setback for the zoning district and primary land use associated with the lot on which the system is located.
- (1) *Roof- or Building-mounted Solar Energy Systems.* In addition to the building setback and National Fire Protection Association (NFPA) roof access requirements, the collector surface and mounting devices for roof-mounted solar energy systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built, unless the collector and mounting system has been explicitly engineered to safely extend beyond the edge, and setback standards are not violated. Exterior piping for solar hot water systems shall be allowed to extend beyond the perimeter of the building on a side yard exposure. Solar collectors mounted on the sides of buildings and serving as awnings are considered to be building-integrated systems and are regulated as awnings.
 - (2) *Ground-mounted Solar Energy Systems.* Ground-mounted solar energy systems may not extend into the side-yard or rear setback when oriented at minimum design tilt and must meet the clearance requirements of the NFPA.
- (c) Visibility. Solar energy systems shall be designed to blend into the architecture of the building as described in subsection (c)(1)-(3), to the extent such provisions do not diminish solar production or increase costs, consistent with WI State Statute §66.0401.
- (1) *Building Integrated Photovoltaic Systems.* Building integrated photovoltaic solar energy systems shall be allowed, provided the building component in which the system is integrated meets all required setback, land use or performance standards for the district in which the building is located.
 - (2) *Roof Mounted Solar Energy Systems.* Solar energy systems that are flush-mounted on pitched roofs are blended with the building architecture. Non-flush mounted pitched roof systems on the front ROW shall not be higher than the roof peak, and the collector shall face the same direction as the roof on which it is mounted, to minimize wind loading and structural risks to the roof.
 - (3) *Reflectors.* All solar energy systems using a reflector to enhance solar production shall minimize reflected light from the reflector affecting adjacent or nearby properties. Measures to minimize reflected light include selective placement of the system, screening on the north side of the solar array, modifying the orientation of the system, reducing use of the reflector system, or other remedies that limit reflected light. "Screening" means a natural or manmade object that minimizes reflected light's effect on adjacent or nearby properties. "Other remedies" means remedies other than those listed above that would minimize reflected light's effect on adjacent or nearby properties.

- (d) Coverage. Roof or building mounted solar energy systems, excluding building-integrated systems, shall allow for adequate roof access for fire-fighting purposes to the south-facing or flat roof upon which the panels are mounted. Ground-mount systems shall not exceed half the building footprint of the principal structure, and shall be exempt from impervious surface calculations if the soil under the collector is not compacted and maintained in vegetation. Foundations, gravel, or compacted soils are considered impervious and will be included in coverage limitations in order to protect water quality. Residential zoning districts must comply with area regulations of Sec. 115-390(2)c. if more restrictive than the requirements of this paragraph.
- (e) Historic Buildings. Solar energy systems on buildings within designated historic districts or on locally designated historic buildings (exclusive of State or Federal historic designation) must receive approval of the Heritage Preservation Commission, consistent with the standards for solar energy systems on historically designated buildings published by the U.S. Department of Interior.
- (f) Permit Required. All solar energy systems shall require a permit approved by the zoning administrator.
- (1) *Plan Applications.* Plan applications for solar energy systems shall be accompanied by to scale horizontal (site plan) and vertical (elevation) drawings. The drawings must show the location of the system on the building or on the property for a ground-mount system, including the property lines.
- a. *Pitched Roof Mounted Solar Energy Systems.* For all roof-mounted systems other than a flat roof the elevation must show the highest finished slope of the solar collector and the slope of the finished roof surface on which it is mounted.
- b. *Flat Roof Mounted Solar Energy Systems.* For flat roof applications a drawing shall be submitted showing the distance to the roof edge and any parapets on the building and shall identify the height of the building on the street frontage side, the shortest distance of the system from the street frontage edge of the building, and the highest finished height of the solar collector above the finished surface of the roof.
- (2) *Plan Approvals.* Applications that meet the design requirements of this ordinance shall be granted a permit approved by the zoning administrator and shall not require Planning Commission review. Permit approval does not indicate compliance with Plumbing Code, Fire Code, or Electric Code.
- (g) Approved Solar Components. Electric solar energy system components must have a UL or equivalent listing and solar hot water systems must have an SRCC rating.
- (h) Compliance with Building Code. All solar energy systems shall meet approval of local building code officials, consistent with the State of Wisconsin Building Code or the Building Code adopted by the local jurisdiction, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.
- (i) Compliance with State Electric Code. All photovoltaic systems shall comply with the Wisconsin State Electric Code.
- (j) Compliance with NFPA. All photovoltaic systems shall comply with the NFPA.
- (k) Compliance with Plumbing Code. Solar thermal systems shall comply with requirements of Chapter 103, Article V. of the City of La Crosse Code of Ordinances.
- (l) Utility Notification. All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.

The City of La Crosse encourages the development of commercial or utility scale solar energy systems where such systems present few land use conflicts with current and future development patterns. Ground-mounted solar energy systems that are the principal use on the development lot or lots are conditional uses in selected districts.

- (a) *Solar gardens.* La Crosse permits the development of community solar gardens, subject to the following standards and requirements:
 - (1) *Rooftop gardens permitted.* Rooftop community systems are permitted in all districts where buildings are permitted.
 - (2) *Ground-mount gardens conditional.* Ground-mount community solar energy systems must be less than six (6) acres in total size, and are a conditional use in all districts. Ground-mount solar developments covering more than six (6) acres shall be considered solar farms.
 - (3) *Interconnection.* An interconnection agreement must be completed with the electric utility in whose service territory the system is located.
 - (4) *Dimensional standards.* All structures must comply with setback, height, and coverage limitations for the district in which the system is located.
 - (5) *Ground cover and buffer areas.* Ground-mount solar gardens must comply with solar farm ground cover and buffer area standards, as described in subsection (b)(3).
 - (6) *Other standards.* Ground-mount systems must comply with all required standards for structures in the district in which the system is located.
- (b) *Solar farms.* Ground-mount solar energy arrays that are the primary use on the lot, designed for providing energy to off-site uses or export to the wholesale market, are permitted under the following standards:
 - (1) *Conditional use permit.* Solar farms are conditional uses in Light Industrial, Heavy Industrial, and Agricultural districts.
 - (2) *Stormwater and erosion control.* Solar farms are subject to all City of La Crosse's stormwater management and erosion control provisions requirements.
 - (3) *Ground cover and buffer areas.* **In addition to the provisions of the NFPA,** the following provisions shall be met related to the clearing of existing vegetation and establishment of vegetated ground cover. Additional requirements may apply as required by Multi-family Residential and Commercial Design Standards.
 - a. Large-scale removal of mature trees on the site is discouraged.
 - b. Top soils shall not be removed during development, unless part of a remediation effort.
 - c. Soils shall be planted and maintained for the duration of operation in perennial vegetation to prevent erosion, manage run off, and improve soil.
 - d. Seeds should include a mix of grasses and wildflowers, ideally native to the region of the project site that will result in a short stature prairie with a diversity of forbs or flowering plants that bloom throughout the growing season. Blooming shrubs may be used in buffer areas as appropriate for visual screening.
 - e. Seed mixes and maintenance practices should be consistent with recommendations made by qualified natural resource professionals such as those from the Wisconsin Department of Natural Resources, County Soil and Water Conservation District, Land and Water Conservation Department or Natural Resource Conservation Service.
 - f. Plant material must not have been treated with systemic insecticides, particularly neonicotinoids.

- g. The applicant shall submit a financial guarantee in the form of a letter of credit, cash deposit, or bond in favor of the City of La Crosse equal to one hundred twenty-five (125) percent of the costs to meet the ground cover and buffer area standard. The financial guarantee shall remain in effect until vegetation is sufficiently established.
- (4) *Foundations.* A qualified engineer shall certify that the foundation and design of the solar panels racking and support is within accepted professional standards, given local soil and climate conditions.
- (5) *Other standards and codes.* All solar farms shall be in compliance with all applicable Local, State and Federal regulatory codes, including the State of Wisconsin Uniform Building Code, as amended; and the NFPA and National Electric Code, as amended.
- (6) *Power and communication lines.* Power and communication lines running between banks of solar panels and to nearby electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines, or distance makes undergrounding infeasible, at the discretion of the zoning administrator.
- (7) *Site Plan Required.* A detailed site plan for both existing and proposed conditions must be submitted, showing location of all solar arrays, other structures, property lines, rights-of-way, service roads, floodplains, wetlands and other protected natural resources, topography, electric equipment, and all other characteristics requested by the zoning administrator. The site plan should also show all zoning districts, and overlay districts.
- (8) *Aviation Protection.* For solar farms located within 1,000 feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.
- (9) *Agricultural Protection.* Solar farms must comply with site assessment or soil identification standards that are intended to protect agricultural soils.
- (10) *Decommissioning.* A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar panels must occur in the event they are not in use for 12 consecutive months. The plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site. Disposal of structures and/or foundations shall meet the provisions of Chapter 36. - Solid Waste. The zoning administrator may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.

Sec. 115-616. - Restrictions on Solar Energy Systems Limited.

Homeowners' agreements, covenant, common interest community standards, or other contract between multiple property owners within a subdivision of La Crosse shall not restrict or limit solar energy systems.

Sec. 115-617. - Renewable Energy Condition for Certain Permits.

- (a) *Condition for Planned Unit Development (PUD) Approval.* The Planning and Development Department may require on-site renewable energy systems or

zero-net-energy (ZNE) or zero-net-carbon (ZNC) building designs as a condition for approval of a PUD permit to mitigate for:

- (1) Risk to the performance of the local electric distribution system,
 - (2) Increased emissions of greenhouse gases,
 - (3) Other risks or effects inconsistent with the Comprehensive Plan.
- (b) *Condition for Rezoning or Conditional Use Permit.* The Planning and Development Department may require on-site renewable energy systems or zero net energy construction as a condition for a rezoning or a conditional use permit.
- (1) The renewable energy or zero net energy condition may only be exercised for new construction or redevelopment projects.
 - (2) The renewable energy condition may only be exercised for sites that have sufficient on-site or district energy access to a local energy source. Local energy sources include, but are not limited to, solar energy resources, wind energy resources, biomass energy resources, and waste heat sources that can reasonably meet all performance standards and building code requirements

SECTION II: Should any portion of this ordinance be declared unconstitutional or invalid by a court of competent jurisdiction, the remainder of this division shall not be affected.

SECTION III: This ordinance shall take effect and be in force from and after its passage and publication.

Timothy Kabat, Mayor

Teri Lehrke, City Clerk

Passed:
Approved:
Published: