CHAPTER 17.57[1]

AN ORDINANCE ESTABLISHING REGULATIONS AND STANDARDS FOR SOLAR INSTALLATIONS

17.57.010 Scope—This ordinance applies to all new solar installations in the City of Belen.

17.57.020 Purpose—The City of Belen has adopted this ordinance for the following purposes:

- **A. Comprehensive Plan Goals—**The city of Belen has goals set out in its 2022 Comprehensive Plan, including the health, safety, and welfare of the community by promoting the safe, effective, and efficient use of solar energy systems. The solar energy standards specifically implement the following goals from the Comprehensive Plan:
  - **i.** Establish the City of Belen as a leader in the region's transition to renewable energy resources.
  - **ii.** Expand opportunities for development of industrial, commercial, and community-scale solar projects in appropriate locations.
  - **iii.** Support the implementation of renewable technologies in the City of Belen.
- **B. 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 Belen's electric distribution infrastructure.
- **C.** **Goal -** The city of Belen has committed to reducing carbon and other greenhouse gas emissions. Solar energy is an abundant, renewable, ~~and nonpolluting~~ energy resource and its conversion to electricity or heat reduces dependence on nonrenewable energy resources.
- **D. Local Resource—**Solar energy is a~~n underused,~~ renewable local energy resource and by encouraging its use will diversify the community's energy supply portfolio assisting in reducing development carbon footprint. ~~exposure to fiscal risks associated with and dependency on fossil fuels.~~
- **E. Consistency with Carbon Emission Reduction Plans—**The City of Belen may develop future recommendations for the reduction of carbon emissions, this will be served by encouraging local solar development.
- **F. Improve Competitive Markets—**Solar energy systems offer additional energy choices to consumers and will improve competition in the electricity and natural gas markets.

17.57.030 Declaration of Solar Rights

The City of Belen ~~declares~~ recognizes that the right to use the natural resource of solar energy is a property right, declarable and the exercise of which is to be encouraged and regulated by the laws of this state. Such property right shall be known as a solar right.

17.57.040 Limitation on restrictions

1. The City of Belen shall not restrict the installation of a solar collector as defined pursuant to the Solar Rights Act [*47-3-1 to 47-3-5 NMSA 1978*], except that placement of solar collectors in historic districts may be regulated or restricted by a county or municipality. [*3-18-32 NMSA 1978 section A*]

[1] Chapter may change from chapter 17—Zoning, to chapter 15—Buildings & Construction

2. A covenant, restriction or condition contained in a deed, contract, security agreement or other instrument, effective after July 1, 1978, affecting the transfer, sale or use of, or an interest in, real property that effectively prohibits the installation or use of a solar collector is void and unenforceable. [*3-18-32 NMSA 1978 section B*]

17.57.040 Definitions.

Agrivoltaics – A solar energy system co-located on the same parcel of land as agricultural production, including crop production, grazing, apiaries, or other agricultural products or services.

Building-integrated Solar Energy Systems – 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.

Community-Scale Solar Energy System – A commercial solar energy system that converts sunlight into electricity for the primary purpose of serving electric demands off-site from the facility, either retail or wholesale. Community-scale systems are principal uses and projects typically cover less than ~~10~~ 15 acres.

Community Shared Solar – A solar energy system that provides retail electric power (or a financial proxy for retail power) to multiple community members or businesses residing or located off-site from the location of the solar energy system.

Grid-tied Solar Energy System– A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

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

Large-Scale Solar Energy System – A commercial solar energy system that converts sunlight into electricity for the primary purpose of wholesale sales of generated electricity. A large-scale solar energy system will have a project size greater than ~~10~~ 15 acres and is the principal land use for the parcel(s) on which it is located. It can include collection and feeder lines, substations, ancillary buildings, solar monitoring stations and accessory equipment or structures thereto, that capture and convert solar energy into electrical energy, primarily for use in locations other than where it is generated.

Off-grid Solar Energy System – 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 – 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 – A solar energy system that converts solar energy directly into electricity.

Pollinator-Friendly Solar Energy – A community- or large-scale solar energy system developed as a pollinator-friendly standard designed for Southwestern High-Desert eco-systems, soils, and habitat.

Renewable Energy Easement, Solar Energy Easement – 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.

Roof-Mounted – A solar energy system mounted on a rack that is fastened to or ballasted on a structure roof. Roof-mounted systems are accessory to the principal use.

Roof Pitch – The final exterior slope of a 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 – ~~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.~~ is the **ability of one property to continue to receive sunlight across property lines without obstruction from another's property** (buildings, foliage or other impediment).

Solar Carport – A solar energy system of any size that is installed on a carport structure that is accessory to a parking area, and which may include electric vehicle supply equipment or energy storage facilities.

Solar Collector – "Solar collector" means a device, substance or element, or a combination of devices, substances or elements, that relies upon sunshine as an energy source. The term also includes any device, substance or element that collects solar energy for use in:

(1) the heating or cooling of a structure or building;

(2) the heating or pumping of water;

(3) industrial, commercial or agricultural processes; or

(4) the generation of electricity. A solar collector may be used for purposes in addition to the collection of solar energy. These uses include, but are not limited to, serving as a structural member or part of a roof of a building or structure and serving as a window or wall. (*47-3-3 NMSA 1978*)

Solar Daylighting– Capturing and directing the visible light spectrum for use in illuminating interior building spaces in lieu of artificial lighting, usually by adding a device or design element to the building envelope.

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

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

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

Solar Hot Water System (also referred to as Solar Thermal)– 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– Racking, frames, or other devices that allow the mounting of a solar collector onto a roof surface or the ground.

Solar Resource – 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, and can be measured in annual watts per square meter.

17.57.050 Permitted Accessory Use.

Solar energy systems are a permitted accessory use in all zoning districts where structures of any sort are allowed, subject to the requirements as set forth below. Solar carports and associated electric vehicle charging equipment are a permitted accessory use on surface parking lots in all zoning districts regardless of the existence of another building. Solar energy systems that do not meet the following design standards will require a Conditional Use permit approved by the City Planning and Zoning Commission.

A. Height—Solar energy systems must meet the following height requirements:

i. Building or roof-mounted solar energy systems shall not exceed the maximum allowed height in any zoning district. For purposes of 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.

ii. Ground or pole-mounted solar energy systems shall not exceed 15 feet in height when oriented at maximum tilt.

iii. Solar carports in non-residential districts shall not exceed 15 feet in height.

B. Setback—Solar energy systems must meet the accessory structure setback for the zoning district and principal land use associated with the lot on which the system is located, as allowed below:

i. Roof or Building-mounted Solar Energy Systems—The collector surface and mounting devices for roof-mounted solar energy systems shall not extend beyond the exterior perimeter of the building on which it 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 shall be regulated as such.

ii. 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, except as otherwise allowed for building mechanical systems.

C. Visibility—Solar energy systems in residential districts shall be designed to minimize visual impacts from the public right-of-way, as described in C.*i-iii*, to the extent that doing so does not affect the cost or efficacy of the system. Visibility standards do not apply to systems in non-residential districts, except for in historic districts or buildings as described in E. below.

i. Building-integrated Photovoltaic Systems—Building-integrated photovoltaic solar energy systems shall be allowed regardless of whether the system is visible from the public right-of-way, provided the building component in which the system is integrated meets all required setback, and land use standards for the district in which the building is located. Building-integrated solar energy systems can include solar energy systems built into roofing (existing technology includes both solar shingles and solar roofing tiles), into awnings, skylights, and walls.

ii. Aesthetic restrictions—Roof-mounted or ground-mounted solar systems shall not be restricted for aesthetic reasons, if the system is not visible from the closest edge of any public right-of-way other than an alley or if the system meets the following standards:

I. Roof-mounted systems on pitched roofs that are visible from the nearest edge of the front right-of-way shall have the same finished pitch as the roof and be no more than ten (10) inches above the surface of the roof upon which the unit is placed.

II. This ordinance sets a threshold for pitched roof installations that they not be steeper than the finished roof pitch. Mounted systems steeper than the finished roof pitch change the appearance of the roof, and create additional considerations in regard to the wind and drift load on structural roof components.

III. Roof-mounted systems on flat roofs that are visible from the nearest edge of the front right-of-way shall not be more than five (5) feet above the finished roof and are exempt from any rooftop equipment or mechanical system screening. This solar unit height is exempted from the building height restriction set forth in the Zoning District the building is located within.

IV. Additional height and setback requirements are also identified in other sections of this Ordinance including Paragraph B.1 Setbacks and Paragraph E of this section and Section **17.57.060, Paragraph A.i.I.iii.**

iii. **Reflectors—**All solar energy systems using a reflector to enhance solar production shall minimize glare from the reflector affecting adjacent or nearby properties.

D. **Lot Coverage—**Ground-mounted systems shall meet the existing lot coverage restrictions for the zoning district except as defined below:
   i. Ground-mounted systems shall be exempt from lot coverage or impervious surface standards if the soil under the collector is maintained in vegetation and not compacted.
   ii. Ground-mounted systems shall not count toward the maximum number of accessory structures permitted.
   iii. Solar carport in non-residential districts are exempt from lot coverage limitations.

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 from the City Historic Properties Review Board, consistent with the standards for solar energy systems on historically designated buildings published by the U.S. Department of the Interior.-- "*Solar panels installed on a historic property in a location that cannot be seen from the ground will generally meet the U.S. Secretary of the Interior's Standards for Rehabilitation. Conversely, an installation that negatively impacts the historic character of a property will not meet the Standards."*

F. **Plan Approval Required—**All solar energy systems require a building permit or other permit from the City's Development Services Department and shall provide a site plan for review.
   i. **Plan Applications.** Plan applications for solar energy systems shall be accompanied by to-scale horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building or on the property for a ground-mounted system, including the property lines.
   ii. **Plan Approvals.** Applications that meet the design requirements of this ordinance shall be granted administrative approval by the City's Development Services Department staff and shall not require Planning Commission review. Plan approval does not indicate compliance with Building or Electric Code.

G. **Approved Solar Components—**Electric solar energy system components must have an Underwriters Laboratory (UL) or equivalent listing and solar hot water systems must have a Solar Rating & Certification Corporation (SRCC) or equivalent rating.

H. **Compliance with Building Code—**All solar energy systems shall meet the approval of New Mexico Construction Industries Division (NMCID), and solar thermal systems shall comply with the HVAC-related requirements of NMCID.

I. **Compliance with NM State Electrical Code—**All photovoltaic systems shall comply with NM State Electric Code.

J. **Compliance with NM State Plumbing Code—**Solar thermal systems shall comply with applicable NM State Plumbing Code requirements.

K. **Utility Notification—**It is recommended that an interconnection application be submitted to the Public Service Company of NM (PNM) prior to applying for the required permits from the City of Belen. Grid-tied solar energy systems shall comply with interconnection requirements of PNM. Off-grid systems are exempt from this requirement.

17.57.060 Principle Uses.

The City of Belen 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. Community and large-scale systems are either conditional or permitted with site plan review by the City's Development Service Department, and are excluded elsewhere.

A. Principle Use General Standards

i. Site Design

I. Setbacks—Community- and large-scale solar arrays must meet the following setbacks:

1. Property line setback from a non-participating landowner's property line must meet the established setback for buildings or structures in the district in which the system is located, except as otherwise determined in *i.I.6* below.
2. Property line setbacks between separate parcels both of which are participating in the project may be waived upon agreement of the landowner(s).
3. Roadway setback of 50 feet from the right-of-way of State highways, and 40 feet for other roads, except as otherwise determined in *i.I.6* below.
4. For Community and Large Scale Solar arrays, housing unit setback of 150 feet from any existing dwelling unit of a non-participating landowner, except as otherwise determined in *i.I.6* below. Participating landowner housing must meet building setbacks or required yards for the district in which the project is located.
5. Setback distance should be measured from the edge of the solar energy system array, excluding security fencing, screening, or berm.
6. All setbacks can be reduced by 50%, except that un-waived setbacks cannot be less than 30 feet, if the array has a landscape buffer that screens the array at the setback point of measurement.

II. Screening—Community- and large-scale solar energy systems shall be screened from existing residential dwellings.

1. A landscape plan shall be submitted that identifies the type and extent of proposed buffer and screening. Vegetation or another type of buffer can be proposed.
2. Screening shall be consistent with the City of Belen's Landscape ordinance or standards typically applied for other land uses requiring screening.
3. Screening shall not be required along highways or roadways, except as provided in 4. below, or along property lines within the same zoning district, except where the adjoining lot has an existing residential use.
4. The City of Belen ~~Model Community~~ may require screening where it determines there is a clear community interest in maintaining a view shed.

III. Height—Large- and community-scale solar energy systems shall not exceed 20 feet.

IV. Ground Cover and Buffer Areas—Community- or large-scale ground-mounted solar energy systems are required to adhere to the following

standards. Additional site-specific conditions may apply as required by the City of Belen

i. Ground around and under solar panels and in project site buffer areas shall be planted, established, and maintained for the life of the solar project in perennial vegetated ground cover.

ii. To the maximum extent feasible for site conditions, perennial vegetation ground cover shall be based on a diverse seed mix of native or low water consumption species.

iii. The owner/operator shall demonstrate site maintenance that is intended to remove invasive or noxious species.

iv. No insecticide use is permitted on the site. This provision does not apply to insecticide use in on-site buildings, in and around electrical boxes, spot control of noxious weeds, or as otherwise may be deemed necessary to protect public health and safety and eliminate cases of infestations. In such cases, such use shall require approval by the city Development Services Department.

v. Plant material must not have been treated with systemic insecticides.

V. **Foundations–** A qualified engineer shall certify, prior to application for building permits, that the foundation and design of the solar panel racking and support is within accepted professional standards, given local soil and climate conditions.

VI. **Power and communication lines–**

i. 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 by Development Services 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 Development Services Director or their designee.

ii. Power and communication lines between the project and the point of interconnection with the transmission system can be overhead.

VII. **Fencing –** Perimeter fencing for the site shall not include barbed wire or woven wire designs that could pose threat of harm to wildlife and shall preferably use wildlife-friendly fencing standards that include clearance at the bottom. Security features are allowed at the top of fences (including razor wire). Fencing plans must be reviewed by and receive a construction permit from the Development Services Department. Alternative fencing can be used if the site is incorporating agrivoltaics or if otherwise approved by the Development Services Department.

VIII. **Other standards and codes –** All large- and community-scale solar projects shall be in compliance with all applicable local, state and federal regulatory codes, including the State of New Mexico Uniform Building Code, as amended; and the National Electric Code, as amended.

IX. **Site Plan Required –** The applicant shall submit a detailed site plan for both existing and proposed conditions, showing locations of all solar arrays, other nearby structures, property lines, rights-of-way, service roads, floodplains,

wetlands, and any protected natural Site area as may be determined necessary by the Development Services Department. Solar farm developers should provide a site plan similar to that required by the community for any other type of development. Refer to your existing city ordinances to guide site plan submittal requirements including identifying structures, topography, electric equipment, and all other characteristics requested by the City of Belen Development Services Department. The site plan should show all zoning districts and overlay districts governing development of the site.

X. **Aviation Protection –** For large- and community-scale solar projects located within 500 feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of a glare analysis through a qualitative analysis of potential impact, field test demonstration, or geometric analysis of ocular impact in consultation with the Federal Aviation Administration (FAA) Office of Airports, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.

XI. **Decommissioning –** A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life.

1. Decommissioning of the system must occur in the event the project does not produce power for 12 consecutive months. An owner may petition for an extension of this period upon showing of reasonable circumstances that have caused the delay in the start of decommissioning.
2. The plan shall include provisions for removal of all structures and foundations to a depth of 48", restoration of soil and vegetation and assurances that financial resources will be available to fully decommission the site.
3. The City of Belen may require the posting of a bond, letter of credit, a parent guarantee, or other financial surety to ensure proper decommissioning.
4. The value of the decommission bond or letter of credit should consider the salvage value of the solar equipment.

B. **Community-Scale Solar –** The City of Belen permits the development of community-scale solar, subject to the following standards and requirements:

1. **Rooftop shared solar systems permitted –** Rooftop systems are permitted in all districts where buildings are permitted.
2. **Community-scale uses –** Ground-mounted community- scale solar energy systems must cover no more than fifteen ~~ten~~ acres (project boundaries), and are a permitted use in industrial and agricultural districts, and permitted with standards or conditional in all other ~~non-residential~~ districts. Ground-mounted solar developments covering more than fifteen ~~ten~~ acres shall be considered large-scale solar.
3. **Dimensional standards -** All structures must comply with setback and height standards for the district in which the system is located.
4. **Other standards -** Ground-mounted systems must comply with all required standards for structures in the district in which the system is located.

C. **Large-Scale Solar –** Ground-mounted solar energy arrays that are the principal use on the lot are permitted under the following standards:

1. **Conditional use permit–** Large- and community-scale solar projects are conditional uses permits in agricultural districts, industrial districts, and floodplain overlay districts, airport safety zones, and in the brownfield sites that have completed remediation.

17.57.070 Use Type Chart

Use Type	Residential	Mixed Use	Commercial	Industrial/Manufacturing	Agricultural/Rural	Floodplain	Special Districts
Large scale Solar	**x**	**x**	**x**	**c**	**c**	**c**	**ps**
Community Scale Solar	**c**	**c**	**c**	**p**	**p**	**p**	**ps**
Accessory Use Ground-Mounted	**p**	**p**	**p**	**p**	**p**	**c**	**ps**
Rooftop Solar	**p**	**p**	**p**	**p**	**p**	**p**	**ps**

P = Permitted

PS = Permitted Special (additional review required)

C = Conditional

X= Prohibited

19.04.060. Restrictions on Solar Energy Systems Limited – As of (adoption date for this ordinance) new homeowners' agreements, covenant, common interest community standards, or other contract between multiple property owners within a subdivision of Belen shall not restrict or limit solar energy systems to a greater extent than Belen's solar energy standards.

19.04.070. Solar Access - The city of Belen encourages protection of solar access in all new subdivisions and recognizes there are State Statutes whereby a process has been established for property owners to declare and/or claim conditions of solar access. Any such declarations or claims approved by the state must be submitted to the Belen Development Services Department for the city's records.

A. Solar Easements Allowed - The city of Belen allows solar easements to be filed, consistent with applicable surveying and platting standards. Any property owner can purchase an easement, following legal due process, across neighboring properties to protect access to sunlight. The easement can apply to buildings, trees, or other structures that would diminish solar access.

B. Easements within Subdivision Process City of Belen requires new subdivisions to identify and create solar easements ~~when~~ should solar energy systems ~~are~~ be implemented as a ~~condition~~ part of a PUD, subdivision, conditional use, or other permit, as specified in Section 8 of this ordinance.

19.04.080. Renewable Energy Condition for Certain Permits

A. **Condition for Planned Unit Development (PUD) Approval**- The city of Belen may require on-site renewable energy systems, zero-net-energy (ZNE) or zero-net-carbon (ZNC) building designs, solar-synchronized electric vehicle charging or other clean energy systems as a condition for approval of a PUD permit to mitigate for:
1. Impacts on the performance of the electric distribution system,
2. Increased local emissions of greenhouse gases associated with the proposal,
3. Need for electric vehicle charging infrastructure to offset transportation-related emissions for trips generated by the new development,
4. Other impacts of the proposed development that are inconsistent with the city of Belen's Comprehensive Plan.
B. **Condition for Conditional Use Permit** - The city of Belen may require on-site renewable energy systems or zero net energy construction as a condition for a ~~rezoning~~ or a conditional use permit, special use or PAD. ~~Questionable whether conditions can be placed on a standard rezoning, limited~~ to ~~Conditional Use, Special Use, PAD.~~

19.04.090. Solar Roof Incentives - The city of Belen encourages incorporating on-site renewable energy systems ~~or zero net energy construction~~ for new construction and redevelopment to help reduce development carbon footprint. ~~The city of Belen may require on-site renewable energy or zero-net energy construction when issuing a conditional use permit where the project has access to local energy resources.~~
A. **Density Bonus** - Any application for subdivision of land in the Districts that will allow the development of at least four new lots of record shall be allowed to increase the maximum number of lots by 10% or one lot, whichever is greater, provided all building and wastewater setbacks can be met with the increased density, subject to the applicant entering into a development agreement guaranteeing at least three (3) kilowatts of PV for each new residence that has a solar resource.
B. Left intentionally blank
C. **Solar-Ready Buildings** – The city of Belen encourages builders to use solar-ready design in buildings. Buildings that submit a completed U.S. EPA Renewable Energy Ready Home Solar Photovoltaic Checklist (or other approved solar ready standard) and associated documentation will be certified as a Belen solar ready home. A designation that will be included in the permit home's permit history.
D. Left intentionally blank

19.04.100 Solar Ordinance Interpretation

A. Non Conforming Clause
B. Severability Clause
C. Compiling Clause
D. Effective Date