Sec. 60-163. - Alternative energy systems.

It is the goal of the city council, as expressed in the comprehensive plan, to provide a sustainable quality of life for the city's residents, making careful and effective use of available natural resources to maintain and enhance this quality of life. The city believes it is in the public interest to encourage alterative energy systems that have a positive impact in energy conservation but have limited adverse impact on the community. The city also recognizes the value of an impressionable community and how it relates to community pride and growth. In order to balance the use of alternative energy systems with the necessity to protect the public health, safety and welfare of the community, the city finds these regulations are necessary to ensure that alternative energy systems are appropriately designed, sited and installed.

(1) *Wind energy sources and systems.*

(a) *Definitions.* The following words, terms and phrases, when used in this section, shall have the meaning provided herein, except where the context clearly indicates otherwise:

1. *Freestanding WES* means a WES utilizing a turbine attached to a self-supporting monopole or lattice-style tower.
2. *Operator* means the person or entity making use of a WES or who is charged with the responsibility for oversight of a WES.
3. *Wind energy system* ("WES") means, a system that generates energy through the utilization of wind for the purpose of converting kinetic energy into electricity through use of a generator, and can include a nacelle, rotor, tower, box and/or turbine in any form and through any combination for these items and accessories thereto.
4. *Roof-mounted WES* means a WES utilizing a turbine mounted to the roof of a structure and having a maximum rotor diameter of seven feet.
5. *Standard soil conditions* means average area soil conditions not including; gravel, sand, loose rock, mud, muck, or any ground that would reasonably be expected to affect the stability and/or strength of an artificial foundation.
6. *System height* means the highest point above grade, measured from the base of a WES to the tallest point of the system and shall include the systems rotor plane.
7. *Tower* means the portion of a WES that extends vertically from the ground and supports the WES turbine.

(b) *Standards.*

1. *Districts.* WES, in accordance with the standards contained in this section, shall be deemed an accessory use, permissible in all zoning districts through special exception.
2. *Application for permit.* Building permit applications for a WES shall be accompanied by:
   a. A scaled site plan drawing showing features of the property, including, but not limited to:
      i. Location and height of the WES;
      ii. Property boundaries and the distance of those boundaries from the WES;
      iii. Location and dimensions of any easements; and

iv. Location of overhead utility lines.

b. Stamped engineered drawings of any tower, base, footings, and/or foundation as provided by the manufacturer or otherwise.

c. Manufacturer's certification or line drawings of the electrical components in sufficient detail to allow for a determination that the installation conforms to the National Electric Code.

(c) *Freestanding WES.*

1. *Design and placement.* All freestanding WES shall:
   a. Have a maximum system height not to exceed district requirements or 75 feet in zoning districts having no height restriction.
   b. Have a minimum system height of 25 feet and no portion of the WES blade shall extend within 20 feet of the ground.
   c. Have a maximum power rating of 100 kW nameplate generating capacity.
   d. Have no guyed wires attached to the tower or other components.
   e. Have no ladder, step bolts, rungs, or other feature used for tower access to extend within 12 feet of the ground. Lattice-style towers shall have a protective barrier to prevent unauthorized access to the lower 12 feet of the tower.
   f. Be located entirely in the rear yard.
2. *Foundation.* For standard soil conditions, foundations or foundation specifications developed by a WES manufacturer shall be acceptable for installations of a WES with a generating capacity of 20 kW or less. All other installations shall require an engineer's stamped site-specific soil study.
3. *Number.* No more than one WES shall be installed on a single lot of 5 acres or less. All other parcels will be limited to 1 WES per 5 acres of land area.
4. *Signs.* A WES operator is required to provide a single posting, not to exceed four square feet, at the base of a WES prohibiting trespassing, warning of high voltage, and providing the emergency contact information for the operator.

(d) *Roof-mounted WES.*

1. *Design and placement.* All roof-mounted WES shall:
   a. Have a maximum power rating of ten kW nameplate generating capacity.
   b. Be limited to the principal building for any parcel unless approved by the board of zoning adjustment.
   c. Be erected within the confines of the principal building's roof and no portion of the WES shall extend beyond the edges of the roof.
   d. Shall not extend to a height that exceeds applicable district requirements and shall have a system height not to exceed 15 feet.
   e. Be mounted so that no portion of the WES blade extends within 20 feet of the ground.
2. *Host structure.* Installation of a roof-mounted WES shall be in conformance with the manufacturer's specifications and applicable building codes.

3. *Number.* No more than one WES shall be installed on a single rooftop unless approved by the board of zoning adjustment and the host structure lies within a commercially zoned district or an industrial zoned district which is being used for industrial purposes.
4. *Parapet-mount.* WES mounted to the top of a parapet shall be allowed as a special exception except in areas zoned R-1, R-2, R-2A, R-3, or R-5. A parapet-mounted WES may not be mounted on a common wall or party wall. Applications for a parapet-mounted WES must include plans bearing the stamp of a licensed structural engineer. Parapet-mounted WES which would encroach into or overhang the public right-of-way must obtain an easement from the city prior to installation.

(e) *General provisions.* The following provisions will apply to all WES erected under the provisions of this Code:

1. *Noise:* WES will have a maximum noise production rating of 50 dBA and shall conform to this standard under normal operating conditions as measured at any property line. This standard shall apply uniformly to individual WES and to the combined noise production of multiple WES of a single operator.
2. *Color:* WES will be a neutral tone approved by the board of zoning adjustment and all surface finishing shall be nonreflective.
3. *Over speed controls:* WES shall be equipped with manual and automatic over speed controls to limit the blade rotation within design specifications.
4. *Lighting:* WES will have no installed or accessory lighting, unless required by federal or state regulation.
5. *State, federal and local regulations.* In addition to the requirements listed in this section, a WES must:
    a. Comply with all federal and state regulations.
    b. Comply with all local regulations and requirements for the applicable zoning district, including, but not limited to, setback, height, noise, and nuisance requirements.
6. *Notification.* Prior to the installation or erection of a WES, the operator must provide evidence showing their regular electrical service provider has been informed of the customer's intent to install an interconnected, customer-owned generator. Off-grid systems shall be exempt from this requirement.
7. *Setbacks.* A WES must have a minimum setback distance of one point one times the system height from any property line, public right-of-way, electric substation, transmission line, structure, or other WES.
8. *Postings.* The placement of all other signs, postings, or advertisements shall be prohibited. This restriction shall not apply to manufacturer identification, unit model numbers, and similar production labels.
9. *Commercial.* All WES shall be limited to the purpose of on-site energy production, except that any additional energy produced above the total onsite demand may be sold to the operator's regular electrical service provider in accordance with any agreement provided by the same or applicable legislation.

10. *Abandonment.* A WES that is allowed to remain in a nonfunctional or inoperative state for a period of six consecutive months, and which is not brought into operation within the time specified by city officials, shall be presumed abandoned and may be declared a public nuisance subject to removal at the expense of the operator.
11. *Feederlines.* Any lines accompanying a WES, other than those contained within the WES tower or those attached to on-site structures by leads, shall be buried within the interior of the subject parcel.

(f) *Standards and certification.*

1. *Standards.* WES shall meet minimum standards such as International Electrotechnical Commission (IEC) or the American Wind Energy Association's (AWEA) Small Wind Turbine Performance and Safety Standard or other standards as determined by the planning and zoning director.
2. *Certification.* WES shall be certified by Underwriters Laboratories, Inc. and the National Renewable Energy Laboratory, the Small Wind Certification Council or other body as determined by the planning and zoning director. The city reserves the right to deny a building permit for proposed wind energy systems deemed to have inadequate certification.

(2) *Solar energy systems.*

(a) *Definitions.* The following words, terms and phrases, when used in this section, shall have the meaning provided herein, except where the context clearly indicates otherwise:

1. *Ground-mounted panels* means freestanding solar panels mounted to the ground by use of stabilizers or similar apparatus.
2. *Roof-mounted panels* means solar panels that are mounted to the roof of a structure using brackets, stands or other apparatus.
3. *Solar energy system (SES)* means a device, the main purpose of which is to provide for the collection, storage, distribution, conversion or use of solar energy for generation of electricity or for heating water, and can include a charge controller, inverter, panels, and batteries in any form and through any combination of these items.

(b) *Application.*

1. *Districts.*
    a. Ground-mounted SES shall be deemed an accessory structure, permissible in all zoning districts.
    b. Roof-mounted SES shall be permitted in all zoning districts.
2. *Application for permit.* A building permit application for a SES shall be accompanied by:
    a. A scaled site plan drawing showing features of the property, including, but not limited to:
        i. Location and dimensions of the SES;
        ii. Property boundaries the distances of those boundaries;
        iii. Location and dimensions of any easements; and
        iv. Location of utility lines.
    b. Engineer stamped drawings of the SES components, as provided by the manufacturer or otherwise.

c. Manufacturer's certification or line drawings of the electrical components in sufficient detail to allow for a determination that the installation conforms to the National Electric Code.

(c) *Placement and design.*

1. *Ground mounting.* All ground-mounted panels shall:
   a. Be limited to a total system height of ten feet.
   b. Be limited to the rear yard.
   c. Exceed no more than fifteen 15 percent lot coverage and may not exceed the area restrictions placed on accessory structures within the subject district.
   d. Be screened from view to the extent possible without reducing their efficiency. Screening may include walls, fences, or landscaping.
   e. Be installed in a manner that will not exacerbate stormwater runoff that may adversely affect neighboring properties.
2. *Roof mounting.* All roof-mounted panels shall:
   a. Comply with the maximum height requirements of the zoning district.
   b. Have a system height not to exceed six feet on a structure with a flat roof and a system height not to exceed three feet on a structure with a sloped roof.
   c. Not extend beyond the edge of the roof.
   d. Not project vertically above the peak of the roof on a building with a sloped roof.
   e. Be mounted with a maximum angle of 60 degrees from horizontal on a flat or sloped roof.
   f. Be installed only on structures having a roof capable of supporting the weight of all SES components to be mounted on the roof, plus a f40 pound per square foot snow load.
3. *Aesthetics.* SES panels shall be of a neutral color and reflection angles shall be oriented away from neighboring windows. Where necessary, screening may be required to address glare.

(d) *General provisions.*

1. *Additional requirements.* In addition to the requirements listed in this section, a SES must:
   a. Comply with all federal and state regulations.
   b. Comply with all local regulations and requirements for the applicable zoning district, including, but not limited to, setback, height, and nuisance requirements.
2. *Notification.* Prior to the installation or erection of a SES, the operator must provide evidence showing their regular electrical service provider has been informed of the customer's intent to install an interconnected, customer-owned SES. Off-grid systems shall be exempt from this requirement.
3. *Feeder lines.* Any lines accompanying a SES, other than those attached to on-site structures by leads, shall be buried within the interior of the subject parcel.
4. *Commercial.* All SES shall be limited to the purpose of on-site energy production, except that any additional energy produced above the total onsite demand may be sold to the operator's regular electrical service provider in accordance with any agreement provided by the same or

applicable legislation.

(e) *Safety standards and certification.*

1. *Standards.* Solar energy systems shall meet the minimum standards outlined by the International Electrotechnical Commission (IEC), the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE), International Organization for Standardization (ISO), Underwriter's Laboratory (UL), the Solar Rating and Certification Corporation (SRCC), or other national standards as determined by the planning and zoning director.
2. *Certification.* Solar energy systems shall be certified by Underwriters Laboratories, Inc. and the National Renewable Energy Laboratory, the Solar Rating and Certification Corporation or other body as determined by the planning and zoning director. The city reserves the right to deny a building permit for proposed solar energy systems deemed to have inadequate certification.

(Ord. No. 10-06-05, §§ 1105, 1106, 6-28-2010)