

§ 770-54 **Wind and solar energy systems.**

[Added 6-15-2009 by Ord. No. 2009-06]

A.

Purpose and intent. It is the general purpose and intent of the City to balance the need for clean, renewable and abundant energy resources that may reduce dependence upon scarce and nonrenewable fossil fuels, with the necessity to protect the public health, safety and welfare of the city, as well as to preserve the integrity, character, property values, and aesthetic quality of the community at large. The City therefore finds these regulations are necessary in order to facilitate adequate provision of sites for wind and solar energy systems and ensure they are situated in appropriate locations and relationships to other land uses, structures and buildings, without significantly increasing the cost or decreasing the efficiency of such systems.

B.

Authorization.

(1)

Wind energy systems with a rated capacity of up to 20 kilowatts (20 kw) and solar energy systems shall be allowed as an accessory use in any zoning district, subject to the required standards of this section, provided that they are to be incidental and subordinate to a use on the same parcel and shall supply electrical power exclusively for on-site consumption, except as otherwise provided by this chapter.

(2)

Wind and solar energy systems may be connected to the electrical grid when a parcel on which the system is installed also receives electrical power supplied by a utility company. If a parcel on which a system is installed also receives electrical power supplied by a utility company, excess electrical power generated and not presently needed for on-site use may be used by the utility company in accordance with applicable state and federal law.

(3)

Solar energy systems and wind energy systems with a rated capacity of more than 20 kilowatts (20 kw) that are intended to produce electricity for sale to a utility and/or other customers for off-site consumption shall be prohibited, except as a special land use in the General Industrial Zoning District under § [770-44](#) General Industrial, Subsection [C](#), Special land uses, Subsection (2)(b), Electrical power manufacture. Wind or solar energy systems developed as a special land use in the General Industrial Zoning District shall be subject to the required standards of this section.

C.

Standards specific to wind energy systems.

(1)

Number of systems per lot. No more than one ground-mounted or freestanding wind energy system may be placed on any lot of record. Arrays of multiple-turbine roof-mounted wind energy systems may be allowed, provided that they are architecturally integrated with the building upon which they are attached as determined by the Zoning Administrator, and otherwise comply with the required standards of this section.

(2)

Height.

(a)

The total system height of a ground-mounted or freestanding wind energy system shall not exceed twice the maximum permitted height for principal structures on a site within or adjacent to any residential or mixed-use zoning districts, or 100 feet on any other site that is not adjacent to any residential or mixed-use zoning district. The total system height shall include the height above grade of the fixed portion of the tower to the center of the rotor hub, including the turbine and the highest vertical extension of any blades and rotors.

(b)

The height of roof-mounted wind energy systems are subject to the required standards in § [770-21](#), Application of Zoning District Regulations, Subsection [D](#), Application of height regulations, Subsection (3), Exceptions.

(3)

Location and setbacks.

(a)

Ground-mounted or freestanding wind energy systems shall not be located within a front yard in any residential or mixed-use zoning district and shall be set back from all lot lines and rights-of-way to the center of the tower base no less than a distance equal to 1/2 the diameter of the rotor and blades, or the minimum required front, side and rear yard setbacks for principal structures within a site's given zoning district, whichever is greater.

(b)

No portion of any wind energy system's blades, rotor, or other exposed moving parts shall extend to within 20 feet of the ground, or to within 10 feet of any overhead utility lines.

(c)

Roof-mounted wind energy systems shall be setback from the building edge a distance equal to 1/2 the diameter of its rotor and blades, or a distance as determined necessary by the Zoning Administrator. No portion of any roof-mounted wind energy system's blades, rotor or other exposed moving part shall extend beyond the edge of the building to which it is attached, or to within 20 feet of any outdoor surfaces that are located directly below the system and intended for human occupancy, such as balconies or rooftop patios.

D.

Standards specific to solar energy systems.

(1)

Number of systems per lot. No more than one ground-mounted or freestanding solar energy system may be placed on any lot of record, and its solar collector shall not exceed 800 square feet of surface area. Solar collectors shall not be counted towards lot coverage, but the area covered or enclosed by solar collectors may be counted as required open space. Arrays of multiple-collector roof-mounted, building-mounted, or facade-mounted solar energy systems may be allowed, provided that they are architecturally integrated with the building upon which they are attached as determined by the Zoning Administrator, and otherwise comply with the required standards of this section.

(2)

Height. Ground-mounted or freestanding solar collectors and any mounts shall not exceed a height of 20 feet when oriented at maximum tilt. Building-mounted or facade-mounted solar collectors shall not exceed the height of the building to which they are attached. Roof-mounted solar collectors and any mounts are subject to the standards in § [770-21](#), Application of zoning district regulations, Subsection [D](#) Application of height regulations, Subsection (3) Exceptions.

(3)

Location and setbacks.

(a)

Ground-mounted or freestanding solar energy systems shall not be located within a front yard in any residential or mixed-use zoning district, and shall be set back from all lot lines and rights-of-way to any part of the system no less than the minimum required front, side and rear yard setbacks for accessory structures within a site's given zoning district.

(b)

Roof-mounted solar energy systems shall be setback from the building edge a distance equal to its height or a distance as determined necessary by the Zoning Administrator.

(c)

Building-mounted or facade-mounted solar energy systems shall not be attached to any front building facade that directly faces and is visible from any right-of-way. Such systems may be located on any side or rear building facade, provided that they do not directly face and are not visible from any right-of-way, and provided that they are architecturally integrated with the building upon which they are attached, as determined by the Zoning

Administrator.

(d)

Solar collectors shall be placed so as not to shade any existing solar collector or adjacent property to the north between the hours of 9:30 a.m. and 2:30 p.m. Eastern Standard Time on December 21 of each year any more than would a structure built to the maximum permitted bulk and area standards for a site's given zoning district.

(4)

Solar storage batteries. When solar storage batteries are included as part of the solar energy system, they must be placed in a secure container or enclosure meeting the requirements of the City's building and electrical codes when in use and, when no longer used, shall be disposed of in accordance with all applicable City, state and federal laws and regulations.

E.

General standards.

(1)

Screening. Landscape screening in accordance with § [770-90](#), Landscaping, greenbelts, buffers and screening, Subsection [D](#), Screening between land uses, shall be provided along all property lines to mitigate aesthetic impacts upon the neighborhood if a ground-mounted or freestanding wind or solar energy system is located within or adjacent to any residential or mixed-use zoning districts, except when a principal structure is placed between the system and a property line. Roof-mounted wind or solar energy systems shall be effectively screened as determined necessary by the Zoning Administrator.

(2)

Access and safety. All wind or solar energy systems shall be designed and installed so as to prevent unauthorized access to electrical and mechanical components and shall be secured or locked at all times when service personnel are not present. All ground-mounted or freestanding wind or solar energy systems shall be adequately enclosed by a six-foot fence, or placed within a yard that is entirely enclosed by a six-foot fence, in accordance with the provisions of Chapter [323](#), Fences. All climbing apparatus shall be located at least 12 feet above ground, and any tower must be designed to prevent climbing within the first 12 feet.

(3)

Lighting. Exterior lighting from a direct source upon a wind or solar energy system shall be prohibited. No lights shall be installed on a tower or any other part of a wind or solar energy system, unless required to meet federal aviation regulations.

(4)

Controls. All wind energy systems shall be equipped with manual and automatic override brakes in order to limit the blade rotation speed to within its design limits, to prevent uncontrolled rotation and excessive pressure on the tower, rotors, blades and other components, and to shut down turbines in the event of an electrical outage.

(5)

Underground wiring. All wiring connected with a wind or solar energy system shall be underground, except for wiring that runs from the turbine to the base of the wind energy systems, and all wiring associated with roof-mounted wind energy systems, and roof-mounted, building-mounted, or facade-mounted solar energy systems.

(6)

Noise and electrical disturbance. All wind energy and solar systems shall comply with the required standards of § [770-94](#), Noise and vibrations, and § [770-95](#), Electrical disturbance, electromagnetic or radio frequency interference.

(7)

Signs. All signs on a wind or solar energy system visible from any right-of-way or adjacent property shall be prohibited, except for the manufacturer's or installer's identification on the nacelle or solar collector, appropriate warning signs, or the owner and/or operator's identification.

F.

Access easements.

(1)

The enactment of this section does not constitute the granting of an easement by the City for access to wind or solar radiation. The owner and/or operator shall provide covenants, easements, or similar documentation to assure sufficient wind or solar radiation to operate a wind or solar energy system unless adequate accessibility to the wind or solar radiation is provided by the site.

(2)

Nothing within this section shall prevent any owner, occupant or other person in control of property from legally placing or planting any vegetation or trees, or legally constructing any structure that may cast a shadow on a solar energy system or block wind from a wind energy system, provided that such vegetation, trees, or structures comply with the required standards of this chapter and all other applicable laws, codes and ordinances.

G.

Removal.

(1)

An owner and/or operator shall remove any ground-mounted or freestanding wind or solar energy system when it has not been used for a period of 180 days or more or has otherwise been abandoned. For purposes of this section, the removal of rotors, blades, turbines, solar collectors, solar batteries, or other equipment from a wind or solar energy system, or the cessation of electrical power generation, shall be considered as the beginning of a period of nonuse or abandonment. Nonuse or abandonment may also be proven by reports from an interconnected utility.

(2)

Once a ground-mounted or freestanding wind or solar energy system has not been used for a period of 180 days or more or has otherwise been determined to be abandoned, the owner and/or operator shall immediately apply or secure the application for any required demolition or removal permits, and immediately proceed with and complete the demolition and removal, restoring the premises to an acceptable condition as reasonably determined by the Building Official and/or Zoning Administrator.

(3)

If the required removal of a wind or solar energy system has not been lawfully completed within 60 days of the applicable deadline, and after at least 30 days' written notice by the City Attorney, Building Official, and/or Zoning Administrator, the City may pursue legal action to remove or secure the removal of the system at the owner's and/or operator's sole expense.

(4)

The Zoning Administrator and/or Building Official may require that an application for a ground-mounted or freestanding wind or solar energy system include a security to be posted at the time of receiving a building permit to ensure its removal when it has been abandoned or is no longer in use, as provided in this section. The security may, at the election of the owner and/or operator, be in the form of cash; surety bond; letter of credit; or an agreement in a form approved by the City Attorney and recordable at the office of the Register of Deeds, establishing a promise of the owner and/or operator to timely remove the wind or solar energy system as required under this section, with the further provision that the owner and/or operator shall be responsible for the payment of any costs and attorney's fees incurred by the City in securing removal. The City's actual costs and reasonable administrative charges to remove or secure the removal of a wind or solar energy system may be drawn or collected from such security.

H.

Applications and permits. The owner and/or operator of any wind or solar energy system shall obtain a building permit, along with any other permits required by federal, state and local agencies, prior to erecting a system. Wind or solar energy systems shall comply with all applicable state and City construction and electrical codes and City building permit requirements, and also all requirements of the Federal Aviation Administration, the Michigan Airport Zoning Act (Public Act 23 of 1950, MCLA § 259.431 et seq.), the Michigan Tall Structures Act (Public Act

259 of 1959, MCLA § 259.481 et seq.), and all other applicable state and federal regulations.

(1)

Wind energy systems. Applications for permits to install a wind energy system shall include a site plan prepared in accordance with § [770-12](#), Site plan review, along with the following additional information:

(a)

The location of all buildings within 200 feet of the property including exterior dimensions, height and uses.

(b)

The location and dimensions of any other natural or man-made features within 200 feet of the property, such as trees, overhead utility lines, utility poles and towers, streets and rights-of-way, wireless community devices, etc.

(c)

The plans and specifications identifying all parts of the system, including, but not limited to, the manufacturer and model, turbine, tower height and type, rotor diameter, foundation, any accessory equipment, and the manufacturer's electrical plans and specifications.

(d)

Certification from a licensed engineer or qualified professional that the manual and automatic override brakes have been designed for the proposed system.

(e)

Evidence that the applicant has notified the affected utility of the intent to install an interconnected customer-owned generator, and that the generator meets the minimum requirements established by the affected utility, the Michigan Public Service Commission, the Federal Energy Regulatory Commission, and all other applicable state and federal standards. Off-grid systems shall be exempt from this requirement.

(f)

Evidence from a qualified professional that the site is feasible for a wind energy system, or that covenants, easements and other assurances to document sufficient wind to operate the wind energy system have been obtained.

(g)

Evidence that the proposed wind energy system will comply with applicable federal aviation regulations, including any necessary approvals from the Federal Aviation Administration.

(h)

A visual simulation that includes views from all rights-of-way within 500 feet.

(i)

Any other evidence or information as required by the Zoning Administrator and/or Building Official.

(2)

Solar energy systems. Applications for permits to install a solar energy system shall include a site plan prepared in accordance with § [770-12](#), Site plan review, along with the following additional information:

(a)

The plans and specifications identifying all parts of the system, including, but not limited to, the manufacturer and model, solar collector or generator, mount height and type, foundation, solar batteries, any accessory equipment, and the manufacturer's electrical plans and specifications.

(b)

Evidence that the applicant has notified the affected utility of the intent to install an interconnected customer-owned solar collector, and that the collector meets the minimum requirements established by the affected utility, the Michigan Public Service Commission, the Federal Energy Regulatory Commission, and all other applicable state and federal standards. Off-grid systems shall be exempt from this requirement.

(c)

Evidence from a qualified professional that the site is feasible for a solar energy system, including between the hours of 9:30 a.m. and 2:30 p.m. Eastern Standard Time on December 21 of each year, or that covenants, easements and other assurances to document sufficient solar radiation to operate the solar energy system have been obtained.

(d)

Evidence that the proposed solar energy system will comply with applicable state and federal regulations.

(e)

Any other evidence or information as required by the Zoning Administrator and/or Building Official.

l.

Additional and accessory uses.

(1)

The applicable standards and requirements of this section shall also apply to anemometer towers used to conduct wind site assessments for possible installation of wind energy systems.

(2)

Co-location of wireless communication facilities on any wind or solar energy system shall be subject to the requirements of § [770-88](#), Wireless communication devices. Co-location of any equipment or facilities other than wireless communication facilities that are not used for wind or solar power purposes shall only be permitted if allowed elsewhere within this chapter.