CHAPTER 1378
Renewable Energy

The purpose of this chapter is to provide regulations governing renewable energy systems such as wind and solar, to provide for appropriate locations for wind and solar energy systems, to ensure compatibility with surrounding uses, and to promote safe, effective and efficient use of renewable energy systems to increase opportunities for generation of renewable energy.

1378.01 DEFINITIONS

Guy wire means a cable, wire, or rope that is used to brace something.

Rotor Diameter means the cross-sectional dimension of the circle swept by the rotating blades of a wind energy turbine.

Solar energy system means any solar collection system devise (i.e. solar photovoltaic cell, panel, or array, or solar hot air or water collector device) where the primary purpose of which is to provide for the collection, inversion, storage, and distribution of solar energy for electricity generation or transfer of stored heat.

Solar energy system, freestanding-mount means any solar collection system devise mounted on a pole(s).

Solar energy system, structure-mount means any solar collection system devise mounted on a structure or accessory building.

Wind energy system means any devise that converts the kinetic energy of wind into mechanical or electrical energy that is either pole-mounted, tower-mounted or building-mounted through the use of equipment includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries or other components used in this system.

Wind energy system, height of, means the vertical distance to the uppermost vertical extension of any blade, or the maximum height reached by any part of the wind energy system. For tower/pole-mounted wind energy system, height is measured from the ground level at the base of the tower/pole. For building-mounted wind energy systems, height is measured from the highest point of the roof or roof deck, excluding chimneys, antennae and other similar protuberances.

Wind energy system, building-mount, means a wind energy system mounted on a roof of a building or accessory building.

Wind energy system, pole-mount, means a wind energy system ground-mounted on a long, cylindrical, often, slender piece of wood, metal, etc. and does not include guy wires.

Wind energy system, tower-mount, means a wind energy system ground-mounted on steel lattice or tubular steel and may include guy wires.

(Ord. 938. Passed 4-2-12)

1378.02 WIND ENERGY SYSTEMS WILL BE ALLOWED IN THE FOLLOWING DISTRICTS WITH RESTRICTIONS:

(a) ***Residential Conservation (RC), Single-Family Dwelling (R-1a and R-1b), Two-Family Dwelling (R-2), Multiple Family Dwelling (R-9, R-15 and R-29)*** subject to the following:

(1) Wind energy systems mounted on a building or an accessory building may be erected to a height not exceeding 10 feet above the highest point of the roof,

excluding chimneys, antennae and other similar protuberances. Wind energy systems must be spaced at least 10 feet apart and quantity is limited to two (2) per parcel. Guy wires are not allowed.

(2) Wind energy systems mounted on a pole may be erected to a height not exceeding 10 feet above the height limit of the district and will only be permitted in the rear yard except can be located streetward on lots on navigable water and be located streetward of the principal building on the less traveled street on through lots. Pole-mounted wind energy systems shall be setback a distance equal to the height of the wind energy system from any adjoining lot line. The setback can be reduced by up to 50% or a minimum of 20 feet from the lot line if it can be demonstrated through a registered architect or professional engineer that the pole is designed to collapse, fall, curl or bend within a distance or zone shorter than the height of the wind energy system. Pole-mounted wind energy systems are limited to one (1) per parcel. Guy wires are not allowed.

(3) The wind energy pole or tower-mounted system and operating equipment shall comply with the general standards for approval contained in this chapter. Any wind energy system that is not in operation for a continuous period of 12 months is considered abandoned, and the owner shall remove the same within 90 days of receipt of notice from the City. Failure to remove an abandoned wind energy system within said 90 days may be removed by the City at the owner's expense.

(4) The wind energy system will meet the standards set in the City of Traverse City Code of Ordinances, Chapter 652, Noise Control, specifically section 652.04 (h). A wind energy system emits a pure tone and would be subject to a reduction of five dBA.

(b) ***Hotel Resort (HR), Office Service (C-1), Neighborhood Center (C-2), Community Center (C-3), Regional Center (C-4), Hospital (H-1 and H-2), Development (D), Government/Public (GP), Northwestern Michigan College (NMC-1 and NMC-2) and Transportation (T)*** subject to the following:

(1) Wind energy systems mounted on a building or an accessory building may be erected to a height not exceeding 20 feet above the highest point of the roof deck, excluding chimneys, antennae, rooftop mechanical equipment and other similar protuberances. Wind energy systems must be spaced at least 20 feet apart and quantity is limited to three (3) per building. Guy wires are allowed.

(2) Wind energy systems mounted on a pole or tower are not allowed in C-1, C-2, C-4, D or HR.

(3) Wind energy systems mounted on a pole or tower are allowed in C-3, H-1, H-2, GP, NMC-1, NMC-2 and T. Wind energy systems mounted on a pole or tower may be erected to a height not exceeding 20 feet above the height limit of the district and will only be permitted in the rear yard except can be located streetward on lots on navigable water and be located streetward of the principal building on the less traveled street on through lots. Tower-mounted wind energy systems shall be setback a distance equal to the height of the wind energy system from any adjoining lot line. The setback can be reduced by up to 50% or a minimum of 20 feet from the lot line if it can be demonstrated through a registered architect or professional engineer that the tower is designed to collapse,

fall, curl or bend within a distance or zone shorter than the height of the wind energy system. Pole/Tower-mount wind energy systems must be spaced one (1) per parcel if less than one (1) acre and (1) per acre on parcels larger than one (1) acre. Guy wires are not allowed.

(4) Wind energy systems mounted on a building will not be considered rooftop equipment

(5) The wind energy pole or tower-mounted system and operating equipment shall comply with the general standards for approval contained in this chapter. Any wind energy system that is not in operation for a continuous period of 12 months is considered abandoned, and the owner shall remove the same within 90 days of receipt of notice from the City. Failure to remove an abandoned wind energy system within said 90 days may be removed by the City at the owner's expense.

(6) The wind energy system will meet the standards set in the City of Traverse City Code of Ordinances, Chapter 652, Noise Control, specifically section 652.04 (h). A wind energy system emits a pure tone and would be subject to a reduction of five dBA.

(c) ***Industrial District (I)*** subject to the following:

(1) Wind energy systems mounted on a building or an accessory building may be erected to a height not exceeding 20 feet above the highest point of the roof deck, excluding chimneys, antennae and other similar protuberances. Wind energy systems must be spaced at least 20 feet apart. Guy wires are allowed.

(2) Wind energy systems mounted on a pole or tower may be erected to a height not exceeding 120 feet pending FAA review and will only be permitted in the rear yard except can be located streetward on lots on navigable water and be located streetward of the principal building on the less traveled street on through lots. Tower-mounted wind energy systems shall be setback a distance equal to the height of the wind energy system from any adjoining lot line. The setback can be reduced by up to 50% or a minimum of 20 feet from the lot line if it can be demonstrated through a registered architect or professional engineer that the tower is designed to collapse, fall, curl or bend within a distance or zone shorter than the height of the wind energy system. Pole/Tower-mount wind energy systems must be spaced one (1) per 120 ft radius. Guy wires are allowed.

(3) Wind energy systems mounted on a building will not be considered rooftop equipment

(4) The wind energy pole or tower-mounted system and operating equipment shall comply with the general standards for approval contained in this chapter. Any wind energy system that is not in operation for a continuous period of 12 months is considered abandoned, and the owner shall remove the same within 90 days of receipt of notice from the City. Failure to remove an abandoned wind energy system within said 90 days may be removed by the City at the owner's expense.

(5) The wind energy system will meet the standards set in the City of Traverse City Code of Ordinances, Chapter 652, Noise Control, specifically section 652.04 (h). A wind energy system emits a pure tone and would be subject to a reduction of five dBA.

(d) ***Open Space (OS) District*** subject to the following:

(1) Wind energy systems shall be subject to review from the Parks and Recreation Commission with final approval from the City Commission.

(Ord. 938. Passed 4-2-12. Ord. 953. Passed 10-1-12)

1378.03 SOLAR ENERGY SYSTEMS WILL BE ALLOWED IN THE FOLLOWING DISTRICTS WITH RESTRICTIONS:

(a) ***Residential Conservation (RC), Single-Family Dwelling (R-1a and R-1b), Two-Family Dwelling (R-2), Multiple Family Dwelling (R-9, R-15 and R-29)*** subject to the following:

(1) Solar energy systems- structure-mounted on a building or an accessory building are allowed by right subject to the following:

a) With a flat or mansard style roof may be erected to a height not exceeding 10 feet above the highest point of the roof, excluding chimneys, antennae and other similar protuberances.

b) With a pitched roof style shall not exceed the peak height of the roof.

c) Will not be considered rooftop equipment.

d) Shall be designed and located in order to prevent reflective glare toward any inhabited structure on adjacent properties as well as adjacent street rights-of-way.

(2) Solar energy systems- freestanding-mount are allowed by right subject to the following:

a) Be erected to a height not exceeding 15 feet and area of 150 square feet per unit and will only be permitted in the rear yard except can be located streetward on lots on navigable water and be located streetward of the principal building on the less traveled street on through lots unless deemed impractical by the Planning Director.

b) Must be setback 20 feet from side and rear property lines and are limited to two (2) per parcel. Guy wires are not allowed.

c) Shall be designed and located in order to prevent reflective glare toward any inhabited structure on adjacent properties as well as adjacent street rights-of-way.

d) Shall meet the impervious surface requirements of the district.

(b) ***Industrial District (I), Hotel Resort (HR), Office Service (C-1), Neighborhood Center (C-2), Community Center (C-3), Regional Center (C-4), Hospital (H-1 and H-2), Development (D), Government/Public (GP), Northwestern Michigan College (NMC-1 and NMC-2), Open Space (OS) and Transportation (T)*** subject to the following:

(1) Solar energy systems- structure-mounted on a building or an accessory building are allowed by right subject to the following:

a) With a flat or mansard style roof may be erected to a height not exceeding 10 feet above the highest point of the roof, excluding chimneys, antennae and other similar protuberances.

b) With a pitched roof style shall not exceed the peak height of the roof.

c) Will not be considered rooftop equipment.

e) Shall be designed and located in order to prevent reflective glare toward any inhabited structure on adjacent properties as well as adjacent street rights-of-way.

(2) Solar energy systems- freestanding-mount are allowed by right subject to the following:

a) Be erected to a height not exceeding 20 feet and area of 200 square feet per unit.

b) Must be setback 10 feet from side and rear property lines and shall have no quantity limit. Guy wires are not allowed.

c) Shall be designed and located in order to prevent reflective glare toward any inhabited structure on adjacent properties as well as adjacent street rights-of-way.

d) Shall meet the impervious surface requirements of the district.

(Ord. 953. Passed 10-1-12)

1378.04 EXCEPTIONS:

(a) For wind energy systems that exceed what is allowed by right, the City Commission Special Land Use Permit, Section 1364.08, would apply.

(b) Historic Districts- Historic District Commission requires that roof-mounted solar and wind energy systems be located on the rear portion of the roof or an accessory building in the rear yard for designated Historic Districts. Also, structure-mounted solar energy systems must receive aesthetic approval from the Historic District Commission.

(Ord. 938. Passed 4-2-12. Ord. 953. Passed 10-1-12)