SECTION 1700. WIND ENERGY CONVERSION SYSTEMS *(Ord No 1-21-2010)*

1701. Purpose

The purpose of the ordinance is to provide for the regulation of the construction and operation of Wind Energy Conversion Systems (WECS) subject to reasonable conditions that will protect the environment, public health, safety, and welfare.

1702. Definitions

.01 Facility Operator
The entity responsible for the day-to-day operation and maintenance of the WECS.

.02 Facility Owner
The entity or entities having controlling or majority equity interest in the WECS, including their respective successors and assigns.

.03 WECS, Small
A single system designed to supplement other electricity sources as an accessory use to existing buildings or facilities, wherein the power generated is used for on-site consumption. A small WECS consists of a single wind turbine, tower, and associated control or conversion electronics, which has a total rated capacity less than 40 KW in total nameplate generating capacity. ***(Ord No 12-10-2015-2)***

.04 WECS, Large
A WECS consisting of one or more wind turbine(s), a tower(s), and associated control or conversion electronics, which has a total rated capacity of 40 or more KW in total nameplate generating capacity. ***(Ord No 12-10-2015-2)***

.05 Substation
The apparatus that connects the electrical collection system of a large WECS and increases the voltage for connection with the Utilities' transmission lines.

.06 Wind Power
The conversion of wind energy into another form of energy.

.07 Wind Turbine Height
The distance measured from grade at the center of the tower to the highest point of the turbine rotor or tip of the turbine blade when it reaches its highest elevation.

.08 Meteorological Tower ***(Ord No 12-10-2015-2)***
A tower erected to measure wind speed and direction plus other data relevant to siting WECS. Meteorological towers shall be regulated as commercial towers.

.09 Wind Energy Conversion System (WECS) ***(Ord No 12-10-2015-2)***
An electrical generating facility comprised of one or more wind turbines and accessory facilities, including but not limited to: power lines, transformers, substations, and metrological towers that operate by converting the kinetic energy of wind into electrical energy. The energy may be used on-site or distributed to the electrical grid.

1703. Conditional Use

WECS shall be allowed as a conditional use in the zoning districts listed below:

District	Small WECS	Large WECS
R-1, R-2, C4 ***(Ord No 12-10-2015-2)***	CUP ***(Ord No 12-10-2015-2)***	Not Permitted ***(Ord No 12-10-2015-2)***
R-3	CUP	Not Permitted
C-1, C-2, C-3, P, M-1	CUP	Not Permitted
PUD ***(Ord No 12-10-2015-2)***	CUP ***(Ord No 12-10-2015-2)***	Not Permitted ***(Ord No 12-10-2015-2)***
FDD ***(Ord No 12-10-2015-2)***	CUP ***(Ord No 12-10-2015-2)***	Not Permitted***(Ord No 12-10-2015-2)***
I, I-2	CUP	CUP

1704. Permit Application

Application for a WECS permit shall be accompanied by drawings that show the following:

.01 Location of the proposed WECS and any other auxiliary equipment.

.02 Property lines and physical dimensions of the lot or parcel.

.03 A photograph or detailed drawing of the WECS, including the tower.

.04 Specific information about the WECS, including type, size, rated power output, rotor material and performance, safety and noise characteristics.

.05 Specific information regarding the type, height and material of the tower.

.06 Clearance distances between the farthest extension of the WECS blades to property lines.

.07 Location, dimensions and types of existing structures and uses on the lot or parcel.

.08 Location of all above ground utility lines within a distance equivalent to the total height of the WECS.

.09 Location and size of structures, trees and other objects within 300 feet which are taller than the lowest extent of the blades of the proposed WECS.

.10 Required manufacturer's clear space.

.11 Copy of UL listing.

.12 Decibels at property line.

1705. Size Regulations; Compliance

.01 Height ***(Ord No 12-10-2015-2)***

The permitted maximum height of a WECS shall be determined in one of two ways. In determining the height of the WECS, the total height of the system shall be included. System height shall be measured from the base of the tower to the highest possible extension of the rotor. The height of a WECS must also comply with Federal Aviation Administration.

(1) A ratio of one foot to one point one (1.1) feet between the distance of the closest property line to the base of the WECS to the height of the system
(2) A maximum system height of 175 feet for Districts of: I, I-2. All other Districts are 40 feet
(3) The shortest height of the two above-mentioned methods shall be used in determining the maximum allowable height of a WECS system
(4) The minimum height of the lowest extent of any WECS rotor blade shall be 25 feet above the ground.

.02 Rotors ***(Repealed - Ord No 12-10-2015-2)***

.03 Compliance with Regulations

All WECS shall comply with Federal Aviation Administration notification requirements and any other applicable regulations.

1706. Installation and Design

.01 Towers

(1) All WECS tower structures shall be designed and constructed to be in compliance with pertinent provisions of the current State of Minnesota Building Code. Evidence of compliance may be obtained from the manufacturer's engineering staff or a State-registered professional engineer
(2) The compatibility of the tower structure with the rotors and other components of the WECS shall be certified by the manufacturer's engineering staff or by a State-registered professional engineer
(3) WECS towers shall either have tower climbing apparatus located not closer than 12 feet to the ground or be unclimbable by design for the first 12 feet
(4) All WECS towers shall be constructed in a monopole design of self-supporting tubular steel in a non-obtrusive color such as white, off-white, or grey. Roof-mounted WECS structures are prohibited.

.02 Over-Speed Controls

Every WECS shall be equipped with manual and automatic over-speed controls. The conformance of rotor and over-speed control design and fabrication with good engineering practices shall be certified by the manufacturer's engineering staff or by a State-registered professional engineer. UL listing of the over-speed control shall be provided.

.03 Electrical Requirements

(1) All electrical components of the WECS shall be in compliance with the applicable requirements of the current National Electrical Code as currently adopted by the State of Minnesota Building Code Division (the "current National Electrical Code") and shall be inspected as required by state statute and local city code ***(Ord No 12-10-2015-2)***.

The interconnection between the WECS and the electric utility shall be in compliance with the current National Electrical Code. Certification will be supplied in writing that the WECS will automatically disconnect from the utility when there is no power input from the utility

(2) The interconnection of the WECS with the local electrical utility shall comply with all applicable Federal and State regulations. Every applicant for a WECS permit must notify the electrical utility in advance of installation and enter into an Interconnection Agreement with the Melrose Public Utilities. All feeder lines shall be buried

(3) Every battery storage unit associated with a WECS shall be in compliance with the current National Electrical Code and shall be inspected by a qualified electrical inspector

(4) The WECS, including the blades, shall be grounded and shielded to protect against natural lightning strikes in conformance with the current National Electrical Code

(5) No WECS shall have affixed or attached lights, reflectors, flashers or any other illumination, except for those devices required by the Federal Aviation Administration.

.04 Structural Components

(1) The safety of structural components of every WECS and the compatibility of the rotors with the towers of WECS shall be certified by a State-registered professional engineer. The safety of electrical components of every WECS shall be certified by a State- registered electrical engineer.

(2) The safety of all modifications of any WECS shall be certified by a State-registered professional engineer. Certification of safety is required before the building permit is granted for modifications made prior to installation. Certification of the safety of modifications made after the WECS is installed and the permit is granted is also required. Failure to have the safety of modifications certified after the permit has been granted shall result in revocation of the permit until certification has been obtained.

.05 Signs Required

At least one sign shall be posted at the base of the WECS tower and shall contain the following information:

(1) Notice of no trespassing

(2) Warning of high voltage

(3) Identification of the turbine manufacturer, facility owner and facility operator

(4) Display advertising including flags, streamers or decorative items is prohibited.

1707. Siting

.01 The base of the tower of any WECS shall be set back from any property line a minimum of:

District	Small WECS	Large WECS
R-1, R-2, C-4 ***(Ord No 12-10-2015-2)***	1.1 times the WECS' height ***(Ord No 12-10-2015-2)***	N/A ***(Ord No 12-10-2015-2)***
R-3	1.1 times the WECS' height	N/A
C-1, C-2, C-3, P, M-1	1.1 times the WECS' height	N/A
FDD ***(Ord No 12-10-2015-2)***	1.1 times the WECS' height ***(Ord No 12-10-2015-2)***	Same as Small WECS ***(Ord No 12-10-2015-2)***
I, I-2	1.1 times the WECS' height	Same as Small WECS

.02 No part of a WECS shall be located within or over drainage, utility or other established easements

.03 No part of a WECS shall be located on or over property lines

.04 The base of a WECS tower shall not be on any required minimum front, side or rear yard setbacks

.05 Clearance between a WECS and electrical lines shall be in compliance with the requirements outlined in the current National Electrical Code

.06 A wind turbine must not be within 1,500 feet of any public parks.

1708. Temporary Meteorological Equipment

Temporary meteorological equipment located upon a temporary tower used on an interim basis to gather wind and meteorological data to determine feasibility of the WECS shall require the processing of a Zoning Permit and shall comply with the following standards:

.01 No more than one such temporary tower shall be permitted on a lot or parcel at one time

.02 The tower shall be placed on property for no longer than 18 months from the date of Zoning Permit issuance. Any abandoned or obsolete temporary towers shall be removed within 30 days from the cessation of operation at the site

.03 The tower shall be temporary by nature and shall not have permanent foundations. Guy wires may be used as long as the connections to the ground are temporary and the wires are designed to support the wind and ice load of the tower

.04 The tower shall meet the minimum wind and ice load design required by the current State of Minnesota Building Code

.05 The tower and any related guy wires shall be protected against unauthorized climbing

.06 The tower shall be set back a distance at least equal to its height from any lot line or recreational field, dwelling, school, business or other habitable structure

.07 The tower shall be grounded and shielded to protect against natural lightning strikes, in conformance with the current National Electrical Code

.08 No tower shall have affixed or attached lights, reflectors, flashers or any other illumination, except for those devices required by Federal Aviation Administration.

1709. Nuisance Concerns

.01 Noise Control

Noise area classification, (NAC1, NAC2, etc.), established by the Minnesota Pollution Control Agency (MPCA) shall be used to evaluate and regulate noise from every WECS. The audible sound from a WECS will be measured at the property boundary line.

Every owner of a WECS that is found to be in violation of MPCA's noise standards and/or Chapter 93 (Assessable Services; Nuisances) of the City Code shall cooperate in taking reasonable mitigating measures. If the problem cannot be eliminated or reduced to a reasonable level, the WECS may be shut down

.02 Electrical or Radio Frequency Interference

Efforts should be taken by the proposed WECS owner to purchase, build or recondition an electrical generator that will not create electrical or radio frequency interference to the reception of communication signals. Complaints about electrical or radio frequency interference shall be directed to the Federal Communications Commission. If the problem cannot be eliminated or reduced to a reasonable level, the WECS may be shut down

.03 Communication Interference

Efforts should be made to site each WECS to reduce the likelihood of blocking or reflecting television or other communications signals. If signal interference occurs, the WECS owner shall make reasonable efforts to resolve the problem. If the problem cannot be eliminated or reduced to a reasonable level, the WECS may be shut down.

1710. Other Regulations

.01 Supplying More Than One Structure

A WECS that supplies energy to two (2) or more structures shall be allowed as long as the proposed WECS complies with all applicable regulations.

.02 Wind Access

Adequate wind access is essential to the safe and efficient operation of a WECS and the City encourages the use of private and restrictive covenants to protect wind access.

.03 Maintenance Requirements; Abandonment; Nuisance

It shall be a public nuisance if any of the following conditions exist:

(1) A WECS is not maintained in operational condition and poses a potential safety hazard.

(2) A WECS is not maintained and operated in compliance with applicable zoning provisions and State and Federal laws.

(3) A WECS has not generated electricity for a period of 12 consecutive months and the Wind Energy Facility Owner has failed to remove the WECS or make it operational within 30 days after the City has given written notice to remove the WECS.

(4) A decibel level in excess of 50 at the property line shall constitute a nuisance.

(5) The City has a right to abate a public nuisance under the procedures set forth in Chapter 93 (Assessable Services; Nuisances) of the City Code 60 days after the 12 consecutive month period. ***(Ord No 12-10-2015-2)***

.04 Exemptions From Provisions

Any WECS that is by nature ornamental, rather than functional, shall be exempt from this section if total height is less than 15 feet

.05 Inspections

Each WECS shall be inspected yearly to verify that the WECS is operational and that all requirements of installation continue to be met

.06 All wind turbines shall comply with all applicable state and federal regulatory standards, including the current State of Minnesota Building Code; current National Electrical Code as currently adopted by the State of Minnesota; Federal Aviation Administration (FAA) requirements; and Minnesota Pollution Control Agency (MPCA)/ Environmental Protection Agency (EPA) regulations including those addressing hazardous waste, construction, and storm water

.07 Applicant shall conform to the latest Distributed Generation Interconnection Agreement and Tariff on file with Melrose Public Utilities Commission (MPUC). This agreement establishes technical requirements promoting the safe and reliable parallel operation of on-site generation resources. This is required by the State of MN (MN Statute 216B.1611 and has been adopted and set forth by MPUC ***(Ord No 12-10-2015-2)***

.08 Violation of any provision of this section is grounds for revocation of a conditional use permit for a WECS.