

Exhibit A

11-2-1: **Words and Terms Defined**

BLADE:	An element of a wind turbine which acts as a part of an airfoil assembly, thereby extracting through rotation, mechanical energy directly from the wind.
BUILDING MOUNTED WES:	A wind turbine that is mounted to any portion of a building, whether attached directly to the building or attached to a tower structure which is support by the building.
HEIGHT, TOTAL WES:	The height above grade of the wind energy system, including the tower, generating unit, and the highest vertical extension of any blades. Height shall be measured from the adjacent grade of the tower/building to the tip of the turbine (blade) at its highest point.
HORIZONTAL AXIS WES:	Traditional wind turbine design, in which the rotating shaft is parallel to the ground, and the blades rotate through a vertical plane.
LARGE WIND ENERGY CONVERSION SYSTEMS (SWECS):	A wind energy system consisting of at least one of the following: a wind turbine, tower, and associated controls or conversion electronics, and is intended for the production of electricity in excess of the needed on-site consumption of supplied utility power. Wind Energy Systems having a nameplate rated capacity of greater than fifteen (15) kW for residential uses or one hundred (100) kW for commercial or industrial uses shall be considered a Large SWECS. Large SWECS are not permitted on any parcel in the City.
OFF GRID:	An electrical system that is not connected to a utility distribution facility or to any building or structure that is connected to a utility distribution facility.
SHADOW FLICKER:	Alternating changes in light intensity caused by the

moving blade of a wind energy system casting shadows on stationary objects such as the ground or façade of an adjacent structure.

**SMALL WIND ENERGY
CONVERSION SYSTEMS
(SWECS):**

A wind energy system consisting of at least one of the following: a wind turbine, tower, and associated controls or conversion electronics, and is intended to solely reduce on-site consumption of supplied utility power, is incidental and subordinate to a permitted use on the same parcel. Small Wind Energy Systems shall not have a nameplate rated capacity of greater than fifteen (15) kW for residential uses or one hundred (100) kW for commercial or industrial uses.

**TOWER MOUNTED
WES:**

A wind turbine that is mounted to a freestanding tower.

VERTICAL AXIS WES:

A wind turbine design where the rotating shaft is perpendicular to the ground and the blades rotate through a vertical plane.

WIND TURBINE:

A wind turbine is any piece of electrical generating equipment that converts the mechanical energy of wind into electrical energy.

**WIND ENERGY SYSTEM
(WES):**

An electrical generating facility comprised of an aggregation of parts such as a wind turbine, tower, transformer, power lines, or battery banks, used in a manner to convert wind into mechanical or electrical energy.

Exhibit B

11-4-19: **SMALL WIND ENERGY CONVERSION SYSTEMS**

- A. Purpose: The purpose of this section is to establish general guidelines for the location and operation of wind energy systems and associated equipment. The goal of this section is to balance the need for clean, renewable energy with the necessity to protect the health, safety and general welfare of the community.
- B. City Policies: The following criteria will be applied consistently to all Small Wind Energy Conversion System (SWECS) providers that request a permit:
1. Special Use Permit Requirements: A SWECS shall only be allowed as an accessory structure to a permitted principal use and shall require Special Use Permit approval from the Board of Adjustment prior to construction, installation, and operation.

As a condition of approval of the Special Use permit, the applicant shall execute an SWECS Operations Agreement which shall be recorded by the appropriate County Recorder's Office. The agreement will memorialize the responsibilities of the property owner and allow the City to access the property in order to remove the SWECS in the event that the property owner does not comply with this ordinance.

The Board of Adjustment may review the issuance of a Special Use Permit at any time if a previously approved system does not comply with the rules set forth in this chapter and/or the conditions imposed by the Board of Adjustment. The owner/operator of the SWECS shall obtain all other permits required by federal, state, and local agencies prior to construction and operation of the system.

2. Construction Permits: Applications for the construction of a SWECS shall be accompanied by standard drawings of the wind turbine, including the tower, base, and footings. An engineering analysis, certified by an Iowa licensed professional engineer, shall be provided demonstrating that the tower is compliant with the applicable building code. For roof mounted structures, an engineering analysis, certified by an Iowa licensed professional engineer, shall be provided demonstrating that the mounting method is compliant with the applicable building code.

Applications shall also be accompanied by a line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the Electrical Code. All electrical components must be listed as meeting code recognized test standards.

3. Restriction on Use of Electricity Generated: The SWECS shall be used exclusively to supply electrical power for onsite consumption, except that when a parcel on which a SWECS is installed also receives electrical power supplied by a utility company, excess electrical power generated by the SWECS and not presently needed for onsite use may be used by the utility company in accordance to State of Iowa and local utility company requirements.

4. Interconnection: The SWECS shall meet the requirements for interconnection and operations as set forth by Mid-American Energy and the Iowa Utilities Board. No building permits shall be issued until the applicant has provided a copy of an executed interconnection agreement. Off-grid systems shall be exempt from this requirement.

C. Bulk Regulations:

1. Minimum Lot Size:

a. The minimum lot size for a tower mounted SWECS shall be one (1) acre.

b. The minimum lot size for a building mounted SWECS shall be one (1) acre.

2. Setback Requirements:

a. Tower mounted SWECS shall be set back from all property lines a distance of not less than one hundred and fifty (150) percent of the WES total height.

b. Building mounted SWECS shall be setback in accordance with the applicable building setback requirement for the zoning district. In no case shall a building mounted SWECS be located closer than fifteen (15) feet from a property line.

3. Maximum Height:

a. Tower mounted SWECS shall have a maximum WES total height of sixty (60) feet for all lots.

b. Building mounted SWECS may be a maximum of ten (10) feet higher than the primary point of attachment to the building on which they are attached.

4. Number of Systems Allowed:

a. No more than one (1) SWECS may be installed on any parcel zoned R-1, R-2, R-5 or TC-2.

b. No more than two (2) SWECS may be installed on any parcel zoned C-1, C-2, C-3, C-4, C-5, M-1, M-2, TC-1, TC-3 or TC-4.

c. Building mounted SWECS shall be prohibited on any parcel zoned R-1, R-2 or R-5.

5. Location:

a. Tower mounted SWECS shall be located entirely in the rear yard on any parcel.

b. No part of a SWECS shall be located within or over a drainage, utility or other established easements, parking, driveway, sidewalk, or on or over property lines.

D. Tower and Equipment Standards: SWECS and associated equipment shall meet the following design standards:

1. Only monopole towers shall be permitted for tower mounted SWECS. Lattice, guyed or towers of any other type shall not be permitted. The monopole tower must be designed to prevent climbing within the first ten (10) feet.

2. The SWECS shall be painted a non-contrasting gray/sky blue or similar color that would minimize its visibility, unless otherwise required by the federal aviation administration. The surface shall be non-reflective.

3. Lights shall not be permitted on any SWECS unless specifically required and permitted by the federal aviation authority, and the city.

4. One sign, limited to four (4) square feet, shall be posted at or near the base of any tower. The sign shall include a notice of no trespassing, a warning of high voltage, and the phone number of the property owner / operator to call in case of emergency. Brand names or advertising associated with any installation shall not be visible from any public right-of-

way. No temporary signage shall be permitted to be mounted or otherwise affixed to the WES.

5. A privacy screen fence eight feet (8') in height shall surround the SWECS and any equipment structure in commercially or industrial zoned properties. A six foot (6') privacy fence enclosing the rear yard of a residentially zoned property shall be deemed appropriate to address this provision.

6. All SWECS shall be equipped with manual and automatic overspeed controls to limit the blade rotation speed to within the design limits of the wind energy conversion system. The control system shall be capable of stopping all turbine rotation in the event of a power outage in order to prevent back feeding of the electrical grid.

7. No SWECS shall be installed in any location where its proximity with existing fixed broadcast, re-transmission, or reception antenna for radio, television, or wireless phone or other personal communication systems would produce electromagnetic interference with signal transmission or reception. If it is determined that the SWECS is causing electromagnetic interference, the operator shall take the necessary corrective action to eliminate this interference including relocation or removal of the facilities, subject to the City of Clive.

8. The enactment of this chapter does not constitute the granting of an easement by the city. The owner/operator shall obtain covenants, easements, or similar documentation to assure sufficient wind to operate the SWECS unless adequate accessibility to the wind is provided by the site.

9. No SWECS shall be installed and operated in a manner that causes a shadow flicker to fall on any occupied adjacent structure.

E. Owner Responsibilities:

1. The property owner of any SWECS shall maintain such system in a safe and attractive manner, including replacement of defective parts, painting, cleaning, and other acts that may be required for the maintenance and upkeep of the function and appearance of such a system.

2. At least every 24 months, every tower mounted SWECS shall be inspected by an expert who is regularly involved in the maintenance, inspection and/or erection of towers. At a minimum, this inspection shall be conducted in accordance with the tower inspection checklist provided in the Electronics Industries Association (EIA) Standard 222,

“Structural Standards for Steel Antenna Towers and Antenna Support Structures.” Inspection record shall provide verifiable proof of on-going energy production. A copy of the inspection record shall be provided to the City of Clive.

Any SWECS that is not operated for a continuous period of 180 days shall be considered abandoned and shall be removed within 30 days. Removal of the system includes the entire structure including foundations, transmission equipment and fencing from the property. If the abandoned SWECS is not removed in the specified amount of time, the City may remove it and recover its costs from the property owner.

Operation of a wind energy system includes, but is not limited to, the actual production of measureable energy. Wind Energy Systems that function mechanically but no longer produce energy shall be considered abandoned.

3. The owner/operator of a wind energy conversion system must demonstrate adequate liability insurance. Upon the granting of a permit, applicant shall assume full responsibility for any and all damages, claims, expenses, liabilities, judgments and costs of any kind, including reasonable attorney’s fees related to or caused by the erection, location, use, or removal of a facility, whether on public or private property, and shall agree to hold the City harmless, indemnify and defend it from all such liabilities incurred or judgments entered against it as a result of the erection, location, use or removal of the facility
4. Noise shall not exceed the requirements established in Chapter 5-8-3 of the Clive City Code.