

50.40 COMMERCIAL WIND ENERGY CONVERSION SYSTEMS

The purpose of this ordinance is to provide for the regulation of owners/developers engaged in the construction, erection, placement, location and maintenance of largescale wind farm projects in Madison County; and to preserve and protect public health and safety.

1. DEFINITIONS

- A. Commercial Wind Energy Conversion System (“*Commercial WECS*”) shall mean any Wind Energy Conversion System with Turbines having a Total Height greater than 125 feet.
- B. Components shall mean all the physical facilities including Turbines (the Tower, nacelle, hub, motor, and blades), Turbine foundations, transformers, crane pads, Feeder Lines, and any accessory buildings, equipment. and shall include any substations that are constructed in conjunction with a Commercial WECS Project.
- C. Confinement Feeding Operation Building shall have the same meaning as found in Iowa Code §459.102(15).
- D. Feeder Line shall mean any above or below-ground line that carries electrical power from one or more Turbines.
- E. Meteorological (“*MET*”) Tower shall mean a tower which is erected primarily to measure wind speed and directions, plus other atmospheric/weather data relevant to siting and operating a Wind Energy Conversion System. Meteorological towers do not include towers and equipment used by airports, the Iowa Department of Transportation, or other applications to monitor weather conditions.
- F. Occupied, Non-residential Building shall mean any building (other than a residence) that is regularly occupied by humans, and that is open to the public, sells goods or services, or a public, religious, or other non-profit institution.
- G. Occupied Residence shall mean a building designed for, and actually occupied on a permanent basis as a residential dwelling.
- H. Project Area shall mean the geographic area encompassing all Components of a Commercial WECS Project.
- I. Property Line shall mean the legal boundary between separately-owned real estate parcels, and privately-owned parcels and publicly-owned land or public right-of-way.
- J. Public Conservation Areas shall mean land owned by County, State or Federal agencies and managed for conservation/preservation purposes, including but not limited to Wildlife Management Areas, Conservation Areas, Parks, Preserves, Wildlife Refuges, and Waterfowl Production Areas. For purposes of this regulation, Public Conservation Areas also include land owned by non-profit conservation organizations and other privately-owned lands upon which permanent conservation easements have been granted to public agencies or non-profit conservation organizations. Public Conservation Areas do not include land enrolled in the Conservation Reserve Program.
- K. Rotor Diameter shall mean the diameter of the circle described by the Turbine’s

moving rotor blades.

- L. Total Height shall mean the highest point above ground level reached by a rotor tip or any other part of a Turbine.
- M. Tower shall mean the vertical structure that supports the electrical generator, rotor blades, or meteorological equipment. Reinforced concrete Towers shall not be permitted in Madison County.
- N. Tower Height shall mean the total height of a Turbine, exclusive of the rotor blades.
- O. Turbine shall mean any piece of electrical generating equipment that converts the energy of blowing wind into electrical energy using airfoils, blades, or similar devices to capture the wind.
- P. Wind Energy Conversion System (“*WECS*”) an electrical generating project designed as an integrated system the Components of which are installed at the same time (a “*Project*” for purposes of this Ordinance), that operates by converting the energy of wind into electrical energy to be used on-site or distributed to the electrical grid.

2. PERMIT APPLICATION AND REVIEW

- A. General. Before any construction activities related to a Commercial Wind Energy Conversion System can begin in Madison County, a WECS Construction Permit must be issued by the County. For purposes of this paragraph, the installation of MET Towers and access roads associated with a Commercial WECS shall not be deemed construction activities requiring a WECS Construction Permit; provided that any such tower or road must be installed in compliance with all other applicable county Ordinances and regulations.
- B. Application. The Madison County Zoning Administrator’s office will supply a written Application form to be used by any person seeking a WECS Construction Permit. Each Project shall require a separate application and associated application fees. The Application shall contain:
 - a) The name, address, EIN of the Applicant, as well as the proposed owners or operators of the Project, including the contact information (name, address, telephone and email) of their authorized representatives. The Application shall designate the entity who will be the Permit Holder of the WECS Construction Permit.
 - b) A list of the names and addresses of all property Owners (a) located within the Project Area, and (b) located within 5,280 feet of any Turbine in the Project. Applicant will also provide (2) two sets of mailing labels containing the names and addresses of the above property owners.
Said list shall be verified by the Madison County Zoning Administrator.
 - c) A Development Plan (“*Plan*”) for the Project, which Plan shall contain aerial photographs of the entire proposed Project Area, showing the approximate proposed location of the Turbines, private access roads, Feeder Lines, Substations and all other Components of the Project.
The Plan shall show Property Lines and setback distances under Section III below, as well as all public roads and public drainage district facilities (i.e. – ditches and underground tiles) in the Project Area.
The Plan shall also identify any other Turbines, communication antennae,

and airports (including private airstrips) located within five (5) miles of the Project Area; all lakes, permanent water courses and Public Conservation Areas within three (3) miles of the Project Area boundaries. In providing the above information, the Plan shall use a GPS coordinate system that is compatible with the County's geographical information and data systems. The Plan shall also include a mailing address for the owner of each communication antennae identified

- d) Project details, including the name of the Project, and the anticipated number, type, generating capacity, tower height, and rotor diameter of the Turbines. The final number, type, generating capacity, Tower Height, and rotor diameter must be provided in the Final Development Plan.
- e) Documentation of Applicant's legal control over the private property necessary for the Project, signed by the property owner. Such legal control must vest in the Permit Holder of the WECS Construction Permit at the time of its issuance.
- f) A description of the public roads anticipated to be used during all phases of construction, as well as for access to material storage sites and staging areas. As set forth in Section V below, before construction commences on a Project, all public road and public drainage district crossings must be provided to the County Engineer and approved for compliance with the County's Road Use and Public Drainage System Protection Agreements.
- g) A permit fee equal to \$1,000.00 for each Turbine in the Project, to be paid upon approval of the WECS Construction Permit by the Board pursuant to Paragraph 8. below.
- h) Any FAA, FCC, or other state or federal permits or approvals that are necessary for the Project. Applicant shall submit a copy of the actual permit application, or proof that the permit has been filed with the appropriate agency.
- i) Evidence in the form of a report prepared by a qualified third-party acceptable to the Board that the Project will not materially interfere with any existing commercial and/or public safety communication systems including radio, telephone, internet, GPS, microwave, or television signals.
- j) A report prepared by a qualified third-party using the most current modeling software available establishing that no Occupied Residence will experience more than thirty (30) hours per year, or more than thirty (30) minutes per day, of shadow flicker at the nearest external wall based on a "real world" or "adjusted case" assessment modeling. The report must show the locations and estimated amount of shadow flicker to be experienced at all Occupied Residences as a result of the individual Turbines in the Project. The owner of an Occupied Residence may waive the shadow flicker limits established above, which waiver must be in a written instrument signed by all owners and included with the Application.
- k) A Decommissioning Plan pursuant to Section IV paragraph 2. below.
- l) Such additional information as the County may request due to the unique

circumstances with the Project. Applicants are encouraged to have on-going discussions with the County Zoning Administrator and Engineer during preparation of the Application.

- C. County Review. Applications shall be filed with the Madison County Zoning Administrator. The Zoning Administrator shall have thirty (30) days to review a completed Application and provide comments to Applicant.
- D. Notice of Filing. No later than ten (10) days after filing the Application, the Applicant shall provide a notice of the filing in substantially the following form:

PUBLIC NOTICE

Notice is hereby given that (name of applicant) has filed an Application with Madison County to build a commercial windfarm to be located in (list Township names and section numbers). The windfarm is projected to have _____ individual turbines that will be _____ feet high and each generate _____, kw of electricity. The Application is currently being reviewed by the County. There will be a separate notice of the public hearing on the project.

The Notice of Filing shall be:

- a) Published by the Madison County Zoning Administrator once for two consecutive weeks in the official newspaper of the county
- b) Mailed by the to each landowner identified in the Application pursuant to paragraph 2. B. above, and to each City located within one (1) mile of the Project Area; and mailed to the owners of the Public Conservation Areas and all communication and other antenna identified in the Application.

All costs of mailing and publication shall be paid by Applicant to the Madison County Zoning Administrator.

- E. Public Hearing. Upon completion of the County's review of the Application, the County shall set public hearings to be held for preliminary review of the project no later than thirty (30) days after the County review period. Representatives of the permit applicant who are familiar with all aspects of the project must be present at the public hearing.
- F. Notice of Public Hearings. Notice of the time and place of the public hearings shall be published and mailed by the Madison County Zoning Administrator in the same manner as the Notice of Filing in 4 above. The costs of such publications and mailings shall be paid by the Applicant to the Madison County Zoning Administrator.
- G. Final Submission. No later than sixty (60) days following approval of the preliminary review public hearings, applicant shall submit a Final Development Plan ("**FDP**") to the Zoning Administrator showing the final location of all Turbines and other Components comprising the Project (using a GPS coordinate system. The FDP shall establish the Project's compliance with this Ordinance.
- H. Approval by Board of Adjustment. Within thirty (30) days following the

submission of the FDP by the Applicant, the Board of Adjustment shall hold a public hearing pursuant to its rules of procedure. During the review the FDP will be reviewed for completeness and accuracy to the preliminary submittal and compliance with this Ordinance; and, if same is in compliance, approve the application. The decision shall direct the Zoning Administrator to issue a WECS Construction Permits.

I. Modifications. The location of Components may be modified from the FDP when necessary to address exigencies encountered during construction, subject to the following limitations:

(a) any such modification shall remain subject to all setbacks and other requirements set forth in this Ordinance and the Ancillary Agreements; and

(b) the location of Turbines and Project substations can only be modified from the FDP with approval of the Zoning Administrator if the proposed relocation is 300 feet or less; or, for such modifications exceeding 300 feet, with the approval of the Board of Adjustment. Approval of a Turbine or Project substation modification by the Zoning Administrator or the Board of Adjustment shall be deemed an approved amendment to the FDP and also automatically amend the WECS Construction Permit; and

(c) within 30 days from the completion of the Project, the Permit Holder shall revise the FDP to show the exact "as-built" coordinates for all Components, including any modifications. [Failure to timely provide such coordinates shall be a material violation of this Ordinance.]

3. SITING AND DESIGN STANDARDS

A. Setbacks.

All turbines, project substations, and any upgrades to existing turbines shall observe the following setbacks: [Note – all measurements shall be from the center point of the Tower (or from the nearest above-ground non-fence structure at a substation site) to the nearest point on any Occupied Residence, Occupied Non-residential Building, or Confinement Feeding Operation Building; or to the nearest Property Line of any other Protected Area.]

<u>Protected Area</u>	<u>Set Back Requirement</u>
Adjacent Property Lines	Phil - 1.1 x total height Aaron – 1.5 x total height Diane –
Occupied Residence	Phil - Greater of 3 x total height or 1500 ft Aaron – 3 x total height Diane –
Occupied, Non-residential Building	Greater of 3x total height or 1,500 ft Setbacks for schools will be measured from the property line of the school owned land
Confinement Feeding Operation Building	Phil -1.1 x total height Aaron – 1.5 x total height Diane –
Public Road Right-of-Way	Phil - 1.1 x total height Aaron – 1.5 x total height Diane –
Open Ditch	300 feet
Public Conservation Areas and sites on the National Historical Registry	Greater of 3x total height or 1,500 ft
Cemetery	The greater of 1.5 x total height or 1,000 feet
City Limits	2 miles from the Corporate Limits
Public Airports	3-mile radius from all existing or proposed runways 5 miles from existing or proposed runway approaches Additional setbacks as required by FAA

B. Setback Waivers. The above setbacks may be reduced as follows:

- Adjacent Property Line and Confinement Feeding Operation Building– to 0 (zero) feet
- Private airstrips – to 1,600 feet
- All other Protected Areas – to 600 feet
- PROVIDED, a waiver shall not alter any other non-waived set-back requirement.
- To effectuate such a waiver, the Applicant must provide the Zoning Administrator with a recordable instrument signed by all owner(s) (or the controlling governmental entity) of the affected Protected Area that specifically identifies the nature and extent of the waiver. All waivers must be approved by the Board of Adjustment for compliance with this Ordinance; and upon such approval, shall be recorded in the office of the Madison County Recorder.

1. Color and Finish. Wind turbines shall be painted a non-reflective color. Blades may be black in order to facilitate de-icing. Finishes shall be matte or non-reflective. *Exceptions may be made for meteorological towers, where concerns exist relative to aerial spray applicators.*
2. Tower configuration. All wind turbines, which are part of a C-WECS project, shall be installed with a tubular, monopole type tower. Meteorological towers may also be guyed or lattice towers.
3. Lighting. C-WECS sites shall not be artificially lighted, except to the extent required by the FAA or other applicable authority. Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by Federal Aviation Administration permits and regulations. Red strobe lights are preferred for night-time illumination to reduce impacts on migrating birds. Red pulsating incandescent lights should be avoided.

Aircraft Detection Lighting Systems (ADLS) are passive radar sensing system that are used to turn on obstruction lighting.

All wind turbines that exceed an overall height of 200 feet above ground level or exceeds any obstruction standard contained in Title 14 Code of Federal Regulations Part 77, “Safe, Efficient Use, and Preservation of the Navigable Airspace,” are to be marked and/or lighted with FAA-approved paint markings or lighting fixtures to ensure that they are visible to pilots at night.

All C-WECS project in Madison County shall utilize Aircraft Detection Lighting Systems (ADLS) that provides reliable, continuous 360-degree radar surveillance of the airspace around sites to automatically activate obstruction lighting only when aircraft are detected at the defined outer perimeter.

Installed ADLS systems must be in compliance with Title 14 Code of Federal Regulations Part 77.

Exceptions may be made for meteorological towers, where concerns exist relative to aerial spray applicators.

4. Signage. All signage on site shall comply with the Madison County Zoning Ordinance. The manufacturer's or owner's company name and/or logo may be placed upon the compartment containing the electrical generator of the C-WECS. Signs indicating the 9-1-1 address of each C-WECS, or grouping of multiple C-WECS, shall be placed at each device site and/or the entry points of access roads per the Madison County Uniform Rural Address System Ordinance and require the signage fee. Wind turbines shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the C-WECS sites.
5. Feeder Lines. All communications and feeder lines, equal to or less than 34.5kV in capacity, installed as part of a C-WECS project shall be buried.
6. Waste Disposal. Solid and hazardous wastes, including but not limited to crates, packaging materials, damaged or worn parts, as well as used oils and lubricants, shall be removed from the site and disposed of in accordance with all applicable local, state and federal regulations.
7. Minimum Ground Clearance. The blade tip of any wind turbine shall, at its lowest point, have ground clearance of no less than seventy-five (75) feet.
8. Signal Interference. The applicant shall minimize and mitigate any interference with electromagnetic communications, such as radio, telephone or television signals caused by any C-WECS.
9. Federal Aviation Administration. All C-WECS shall comply with FAA standards and permits.
10. Electrical Codes and Standards. All C-WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.
11. Noise. From 6 am to 10 pm sound levels are not to exceed the greater of 50 dBA or the background sound level plus 5 dBA and nighttime levels not to exceed background noise level plus 10 dBA when measured at any inhabitable residence, school, hospital, church or public library existing on the date of approval of this special use permit. Sound levels, however, may be exceeded during events falling outside the control of the permit holder's control.

Maximum Noise Levels. Any proposed wind turbine generator shall produce sound levels that are no more than fifty five (55) decibels as measured on the dB(A) scale at the property lines of the site in question. Exceptions for neighboring property are allowed with the written consent of those property owners. This sound pressure level may be exceeded during short-term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).

A noise report shall be submitted with any application for a wind turbine generator tower. A noise report shall be prepared by a qualified professional prior to any placement of a WECS and submitted to the County Zoning office and shall include the following, at a minimum,

1. A description and map of the project's noise producing features, including the range of noise levels expected, and the basis of the expectation;

2. A survey and report prepared by a qualified independent engineer that analyzes the pre-existing ambient noise (including seasonal variation) and the potentially affected residences, schools, public buildings or other noise sensitive land uses located within 2 miles of the proposed project site.

3. A description and map of the cumulative noise impacts and any problem areas identified.

4. A description of the project's proposed noise control features and specific measures proposed to mitigate noise impacts for sensitive land uses.

Post construction noise and vibration measurements: Within twelve months of the date when the project is fully operational, and biennial thereafter, the owner shall repeat the existing sound and vibration environment measurements taken before the project approval. Post-construction sound level measurements shall be taken both with all WECUs running and with all WECUs off. Report post-construction measurements to the Madison County zoning office (available for public review) using the same format as used for the pre-construction sound and vibration studies.

If post construction measurements exceed pre-construction standards, the owners will comply within 60 days, if not compliant within 60 days the owner will cease operation of said WECU until compliant.

12. Safety.

- a. All wiring between wind turbines and the C-WECS project substation shall be underground. If the applicant/owner can demonstrate the need for an overhead line and the acceptance of landowners for this line, such option may be approved as a condition of the conditional use permit by the Board of Adjustment.
- b. Wind turbine towers shall not be climbable up to fifteen feet above ground level.
- c. Access doors to all equipment on each site shall be locked unless being serviced.
- d. Appropriate warning signage shall be placed on wind turbine towers, electrical equipment, and C-WECS entrances.
- e. Manufacturer's engineer or other qualified engineer shall certify that the wind turbine, foundation and tower design of the C-WECS is within accepted professional standards, given local soil and climate conditions.
- f. For all guyed towers, visible and reflective objects, such as plastic sleeves, reflectors or tape, shall be placed on the guy wire anchor points and along the outer and innermost guy wires up to a height of eight (8) feet above the ground. Visible fencing shall be installed around anchor points of guy wires.

13. Height, Spacing, and Number Limitations.

- a. The Total Height of any Turbine shall not exceed 500 feet.
- b. No Turbine within a Project shall be located more than 2 miles from the next

- closest Turbine in that same Project.
- c. No Project shall have more than 160 total Turbines.
 - d. At no time shall the total number of permitted and installed WECS in Madison County exceed Phil 160 turbines, Aaron 160 turbines, Diane 52 turbines.

4. DISCONTINUATION/DECOMMISSIONING

- a) A Component of a Commercial WECS shall be considered a “discontinued use” (i) after one continuous year of being non-operational (unless a plan is approved by the County outlining the steps and schedule for returning the Component to service); or (ii) upon revocation of the WECS Construction Permit. Once declared to be a discontinued use, the Components shall be subject to removal pursuant to this Section.
- b) Each Project shall have Decommissioning Plan approved by the Board of Adjustment.
Such Plan shall contain:
 - a. A description of the Project Components, and a sequence and description of the activities required to remove same in compliance with this Section.
 - b. A report prepared by a qualified third-party (to be approved by the Board in advance) setting forth the procedures and estimated net cost associated with the removal of the Components and returning all public roads to the same or better condition as before decommissioning. All C-WECS and accessory facilities shall be removed to four (4) feet below ground level within one hundred eighty (180) days of the discontinuation of use.
 - c. Cash, an irrevocable letter of credit, or a performance bond running in favor of the County in an amount no less than the total estimated net removal/restoration costs as determined by said report. Said security must be in place at the time the Project is completed and must remain in effect until decommissioning is completed. No such security shall be cancelable without notice to the Zoning Administrator. Each year, the Permit Holder shall provide proof that such security is in effect at the same time as the annual report to the assessor is made for purposes of the real estate tax assessment.
 - d. The report prepared under b.) above shall be updated and provided to the County (i) at least every five (5) years, and (ii) upon any proposed transfer of the WECS Construction Permit. Should any update indicate a change in the decommissioning costs, the security required under c.) above shall be adjusted accordingly.
 - e. No transfer/assignment of the WECS Construction Permit shall be effective without a corresponding transfer/assignment of the obligations and financial security required under the Decommissioning Plan, as approved by the Board of Supervisors.

5. ANCILLARY AGREEMENTS/PROCEDURES

Issuance of a WECS Construction Permit is strictly conditioned on the Applicant executing the following:

1. Roads. Prior to construction applicants shall identify all roads to be used for the purpose of transporting C-WECS, substation parts, concrete, and/or equipment for construction, operation or maintenance of the C-WECS and obtain applicable weight and size permits from the impacted road authority(ies) prior to construction.
 - i. Prior to construction applicant shall conduct a pre-construction survey, in coordination with the impacted local road authority(ies) to determine existing road conditions. The survey shall include photographs and a written agreement to document the condition of the public facility.
 - ii. The applicant shall be responsible for restoring or paying damages as agreed to by the applicable road authority(ies) sufficient to restore the road(s) and bridges to preconstruction conditions to the extent caused by the construction of the C-WECS. Financial security in a manner approved by the Madison County Attorney's Office shall be submitted covering one hundred thirty percent (130%) the estimated costs of all required improvements. This requirement may be waived by the Madison County Board of Adjustment by recommendation from the Madison County Engineer. The applicant shall enter into a road use agreement with Madison County prior to the start of construction
2. Drainage System. The Applicant shall be responsible for immediate repair of damage to public drainage systems to the extent caused by the construction, operation or maintenance of the C-WECS.
3. An Emergency Response Plan provided by Applicant and approved by the Board of Adjustment. Said Plan shall contain response procedures to be followed in the event of a fire, collapse, personal injury, or other emergency at a Project. The Plan shall contain 24 hour emergency contact information for the Project

6. TRANSEPARABILITY OF A WECS CONSTRUCTION PERMIT

- a) No construction activities on a Project may begin until a WECS Construction Permit has been issued, except as permitted in Section II paragraph 1.
- b) Any material violation of any provision of this Ordinance that remains uncured after thirty (30) days' written notice from the County to the Permit Holder shall be grounds for revocation of the WECS Construction Permit.
- c) If construction on the Project has not begun within 18 months from the date of issuance of the WECS Construction Permit, the WECS Construction Permit shall be automatically revoked without further action by the County. In such event, no work on the Project may take place unless and until a new WECS Construction Permit is issued, and any portion of the Project then completed shall be deemed a discontinued use.
- d) Only the holder of the WECS Construction Permit (the "**Permit Holder**") shall

own the Project, and such holder shall be the entity responsible for observing all requirements of this Ordinance. The Permit Holder shall be responsible to maintain all Components of the Commercial WECS in good repair, and in compliance with this Ordinance and the Ancillary Agreements listed in Section V above.

- e) No WECS Construction Permit shall be transferred or assigned, voluntarily or involuntarily, without the written approval of the Madison County Board of Supervisors, which consent may be withheld unless and until the Board is satisfied that a proposed transferee has the financial and operational responsibility to assume all obligations required of the Permit Holder under this Ordinance and the Ancillary Agreements listed in Section V above. Requests for approval of a WECS Construction Permit transfer shall be directed to the Zoning Administrator.

7. MISCELLANEOUS

CONDEMNATION WAIVER. ISSUANCE OF A WECS CONSTRUCTION PERMIT SHALL BE CONDITIONED ON THE PERMIT HOLDER'S ENFORCEABLE PROMISE, SUPPORTED BY THE CONSIDERATION OF THE ISSUANCE OF THE WECS CONSTRUCTION PERMIT, THAT THE PERMIT HOLDER SHALL NEVER USE, OR SEEK TO USE, EMINENT DOMAIN TO ACQUIRE ANY REAL PROPERTY INTERESTS TO CONSTRUCT OR OPERATE THE PROJECT.

In any action brought by the County against the Permit Holder of a WECS Construction Permit to enforce the provisions of this Ordinance, the County shall be entitled to recover its reasonable attorney fees and court costs as may be awarded by the court.

8. SEVERABILITY CLAUSE

If any of the provisions of this Ordinance are for any reason illegal or void, then the lawful provisions of this Ordinance, which are separable from said unlawful provisions shall be and remain in full force and effect, the same as if the Ordinance contained no illegal or void provisions.

9. REPEALER

All ordinances or parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed.

10. DATE OF EFFECT

This Ordinance shall become effective upon its passage by the Board at three meetings and published as required by Iowa Code §331.302(8).