

## **12-306-44 WIND ENERGY CONVERSION SYSTEMS**

### **12-306-44.01 Definitions**

Applicant. The party, company, or entity responsible for the construction, operation, maintenance, and decommissioning of a Personal - Wind Energy Conversion System, a Commercial - Wind Energy Conversion System, or a Commercial - Wind Energy Conversion System Project. (See also Operator)

Blade Glint. The intermittent reflection of the sunlight off the glossy surface of wind turbine blades.

Commercial - Wind Energy Conversion System (C-WECS). A single wind-driven machine that converts wind energy into electrical power for the primary purpose of sale, resale, or off-site use. (See also turbine)

Commercial - Wind Energy Conversion System Project (C-WECS Project). A project or plan to construct and operate one or more C-WECS to convert wind energy into electrical power for the primary purpose of sale, resale, or off-site use. The term C-WECS Project includes, but is not limited to, a Wind Farm as defined below.

Environmentally Sensitive Lands. As defined and listed within Douglas County Zoning and Land Use Regulations Section 12-314.

Extraordinary Events. Any of the following with respect to an approved C-WECS would be considered an 'extraordinary event': large-scale or facility-wide damage to turbines due to extreme weather or natural disasters, grievous injury to any individual, kills of endangered, threatened, or otherwise protected birds, bats, or other significantly affected animals defined by the U.S. Fish and Wildlife Service; or similar event.

Governing Body. Those who make up a body (committees, departments, etc.) for the purpose of administering policies and procedures. This may include but is not limited to the Douglas County Board of County Commissioners, affected agencies and departments, local townships or municipalities.

Grading. The act of excavation or filling, or a combination of both, or any leveling to a smooth horizontal or sloping surface on a property but not including normal cultivation associated with an agricultural operation.

Height, Hub. The distance measured from the ground immediately adjacent to the tower foundation to the center of the rotor hub.

Height, Total. The sum of the hub height and half of the turbine's rotor diameter distance, measured at the highest point on the blade tip.

Net Metering. A system in which renewable energy generators are connected to a public-utility power grid and surplus power is transferred onto the grid, allowing customers to offset the cost of power drawn from the utility.

Operator. The party, company, or entity responsible for the construction, operation, maintenance, and decommissioning of a Personal - Wind Energy Conversion System, a

Commercial - Wind Energy Conversion System, or a Commercial - Wind Energy Conversion System Project. (See also Applicant).

Participating Landowner. Property owners who have entered into leases or other monetary arrangements with an Applicant or Operator whereby they have reasonable expectation to benefit from approval, construction, and operation of a C-WECS Project. Any person(s) who is not a Participating Landowner shall be referred to as a non-participating landowner.

Personal - Wind Energy Conversion System (P-WECS). A system of wind-driven machine(s) that convert wind energy into electrical power for the primary purpose of on-site personal use, not for off-site commercial power production. This may include windmills, wind pumps, ground water pumps, or devices used to power or run machinery via wind power.

Prescribed Burning. The controlled application of fire to naturally occurring or naturalized vegetative fuels under specified environmental (weather) conditions in accordance with a written prescription that is designed to confine the fire to a predetermined area and to accomplish planned land management objectives.

Property Line. The boundary line between two parcels of property used to define the points where properties begin and end.

Qualified Professional. An individual approved by the Governing Body who has experience and training in the pertinent discipline, and has expertise appropriate for the relevant subject.

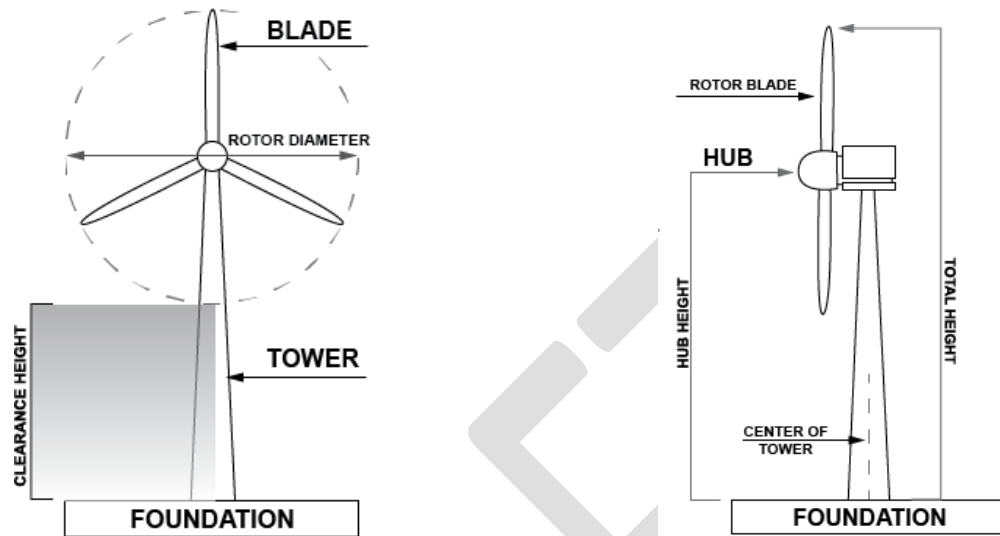
Road Maintenance Agreement. An agreement executed between the Operator and the Governing Body requiring the Operator to perform reasonable maintenance and repair of the public roads, streets, bridges, culverts, and thoroughfares affected by the project.

Rotor. The rotating part of a turbine, including the turbine blades. Rotor diameter means the cross-section dimension of the circle swept by the rotating rotor blades.

Shadow Flicker. Alternating changes in light intensity caused by the moving blades of a wind energy system which cast a repeating pattern of shadows on the ground and stationary objects, such as a window of a dwelling.

Turbine. A wind-driven machine that converts wind energy into electrical power, also referred to as tower or wind energy conversion system (WECS).

FIGURES 1 & 2. (12-306-44) TURBINE DIAGRAMS



Wildlife Corridors. A vegetated route or other connection which allows movement of wildlife between areas of habitat. A wildlife corridor may be naturally occurring areas such as stream corridors, or constructed breaks in the contiguously fenced areas other than for roads. A wildlife corridor allows animals to travel through an area that may be fragmented with C-WECS, or other features, rather than using the nearby roadways.

Wind Farm. A grouping of commercial wind turbines, C-WECS, located in defined area used to collect, transmit, and store electrical energy for use in a larger electrical network. The turbines are connected to transmission, collector, or feeder lines and energy conversion equipment.

Zoning and Land Use Regulations for the Unincorporated Territory of Douglas County. Also referred to as Douglas County Zoning and Land Use Regulations, and County Zoning Regulations.

**12-306-44.02 Personal - Wind Energy Conversion System (P-WECS)**

- a. Purpose. It is the purpose of this section to provide details relating to any application for a small, personal-use wind energy conversion system. This may include one or many windmills, wind pumps, ground water pumps, or devices used to power or run machinery via wind power.
- b. Conditions Required for Approval.
  - 1) Cumulative maximum power rating of 50 kilowatts of electrical power on site.
  - 2) Total height shall not exceed 75 feet for any system included in P-WECS.
  - 3) P-WECS shall be set back from the nearest property line a distance which is at least equal to the total height of the P-WECS, measured from the center of the tower.
    - i. P-WECS shall be set back from roadways to meet the dimensional standards of the zoning district.
  - 4) Excess power generated may be sold back to the utility company through net metering.
  - 5) Subject to appropriate building permits and site plan requirements.
    - i. P-WECS sited on industrially-zoned or business-zoned properties are subject to site plan requirements.

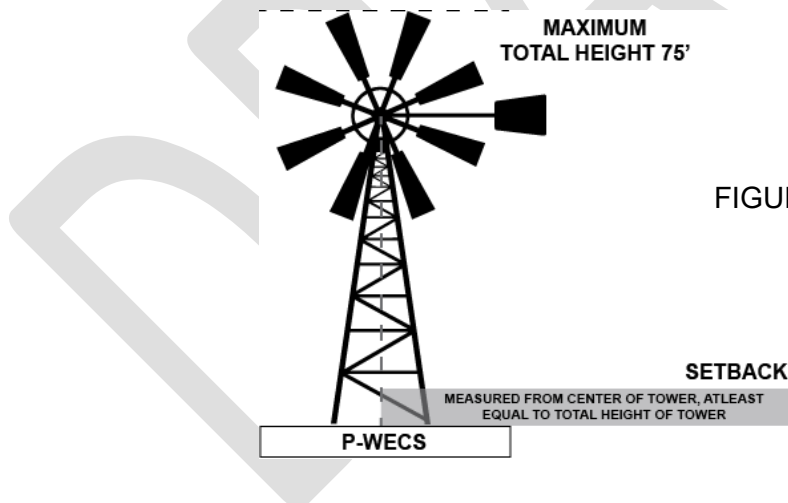


FIGURE 3. (12-306-44) P-WECS

- c. Review and Approval Process. A small, personal-use wind energy conversion system shall be subject to Chapter 13 of the Douglas County Code for original approval, periodic review, and standards associated with an accessory structure.

**12-306-44.03 Commercial - Wind Energy Conversion System (C-WECS)**

- a. Purpose. It is the purpose of this section to provide details relating to any application for a Commercial Wind Energy Conversion System (C-WECS) Project; create a process to permit the development of a C-WECS Project; provide a basis for public discussion and informed comment on the C-WECS Project; and identify significant environmental, social, and economic effects related to a proposed C-WECS Project.
  
- b. Intent of Regulations. It is the intent of these regulations to address major issues associated with the project; however, issues not listed may be deemed significant and issues may emerge as significant during the course of review, which will be addressed as part of the review and conditions of each individual conditional use permit.
  - 1) These regulations specify the plans, surveys, and studies that must be submitted as part of the Conditional Use Permit (CUP) application.
  - 2) Appropriate criteria for siting a Commercial - Wind Energy Conversion System are provided.
  - 3) Standards are provided to:
    - i. Ensure the land remains viable for agricultural uses during the life of the C-WECS Project and following decommissioning;
    - ii. Minimize the impact on nearby properties;
    - iii. Minimize the degradation of the visual character of the area;
    - iv. Minimize negative environmental impacts;
    - v. Ensure reclamation of the site;
    - vi. Provide appropriate decommissioning and disposal measures;
    - vii. Promote the safe, effective, and efficient use of C-WECS, and;
    - viii. Facilitate the supply of renewable energy in a manner that respects the economic, geographic, social, and environmental context of Douglas County.
  - 4) These regulations are not intended to restrict installation of Personal Wind Energy Conversion Systems authorized and governed by Chapter 13, Construction Codes of Douglas County, Kansas. Personal - Wind Energy Conversion Systems (P-WECS) are expressly exempt from the Conditional Use Permit process.
  
- c. Review and Approval Process. A Wind Farm Project shall be subject to Section 12-307-2 of Douglas County Zoning and Land Use Regulations for original approval, periodic review, and grounds for suspension, amendment, or revocation.
  
- d. Conditional Use Permit. If approved, one CUP will be issued for the entirety of real property included within the perimeter of the proposed C-WECS Project.

- 1) Consent. In the event the application includes multiple properties, the applicant shall provide written evidence of landowner consent for each and every parcel contained within the CUP application.
- e. Location Criteria. Through this application, appropriate location criteria for siting wind turbines must be met. C-WECS shall be subject to Section 12-312 of the County Zoning Regulations and are prohibited from location within any federally designated floodway.
- f. Independent Third-Party Review. If it is determined that the *reviewing agencies* do not have the appropriate expertise to review or interpret any or all of the required application materials, construction activities, field inspections, or decommissioning activities, they may contract with an independent third party to conduct such reviews. In such cases, the applicant shall be responsible for the cost of the external review.
- g. Burden of Proof. An Applicant requesting approval of a C-WECS Project is subject to the requirements and procedures of Section 12-307-2.

**12-306-44.03.01      Key Considerations**

In addition to the review and decision-making criteria listed in Section 12-307-2, the following considerations shall be evaluated.

- a. The applicant shall demonstrate their ability to strictly conform to all applicable performance standards detailed in these Regulations as well as applicable federal, tribal, state, and local laws and regulations.
- b. Key issues to be considered with the review of the application include, but are not limited to:
  - 1) Siting Considerations;
  - 2) Visual Impact;
  - 3) Noise Impact;
  - 4) Environmental Impact;
    - Electromagnetic fields and communications interference
    - Impact on cultural, historical, or archeological features;
  - 5) Infrastructure Impact;
  - 6) Aviation and Federal Aviation Administration (FAA) Impact;
  - 7) Building Safety and Construction Management;
  - 8) Extraordinary Event Response;
  - 9) Operation and Maintenance;

- 10) Decommissioning and Reclamation, and;
- 11) The subjects addressed in the materials required to be submitted with the application.

**12-306-44.03.02      Contents of Application.**

No action on the request will be taken until all of the required information has been submitted. Applications seeking approval of a C-WECS Project shall include, at a minimum, the following:

**a. General Information.**

1) Applicant Information

- a. Name, physical address, email address, phone number;
- b. General discussion of ability to construct, operate, and maintain the C-WECS Project;
- c. Financial information regarding applicant's ability to meet the decommissioning and reclamation requirements;  
  
(Note: K.S.A. 45-221, Section 33 generally exempts financial information submitted by contractors in qualification statements from being open to the public.);
- d. Applicant's environmental management history;
- e. Applicant's qualifications and experience in Wind Farm development.

2) Project Information

- a. Name of the C-WECS Project;
- b. Names and addresses of Participating Landowner(s);
- c. Wind characteristics and dominant wind direction;
- d. Narrative describing phases of construction (if applicable);
- e. Relevant background information on the project, including a general overview of the project location, timeframe and project life, phases of development (including construction, operations, and decommissioning), and possibilities for future expansion;
- f. A narrative explanation of why the proposed project site was chosen by the Applicant over alternative locations for the project in the region and reasons for preferring the proposed site over the alternatives considered by the Applicant. The region shall be defined as all counties adjoining and including Douglas County;





- 14) Location of existing and proposed ingress and egress locations for each proposed turbine location within the project area;
  - 15) Location of all public roads within the proposed project area and the location and distance to paved highways in all directions surrounding the proposed project boundary;
  - 16) Boundaries and designations of any Special Flood Hazard Areas identified on the Flood Insurance Rate Map (FIRM) of Douglas County, Kansas, and;
  - 17) Applicant shall submit proof of having submitted Federal Aviation Administration form 7460, Notice to Build, (or other applicable FAA forms).
- c. Lighting Plan.** An outdoor lighting plan shall be submitted concurrent with the concept plan. The plan shall be reviewed to determine whether the proposed lighting complies with the standard in Section 12-314.303.
- d. Visual Impact Assessment.** An assessment shall be developed by a Qualified Professional. The assessment shall provide accurate and site-specific visualizations from key observation points and a detailed description of any mitigation techniques and supporting information. The assessment shall include, at a minimum, the following:
- 1) Virtual simulations which may include 3D visualization models, photographic simulations, and/or animated visualizations if required by the reviewing government body;
  - 2) Viewshed analysis to determine actual visibility and the characteristics of the views within the project area including different seasons, times of day, and weather conditions;
  - 3) Inventory of views to provide the basis for evaluating the extent of visibility. This inventory shall include written description of views, distance from proposed project, duration of view, and characteristics of the viewpoints from the following:
    - a.** All dwellings located within one thousand five hundred feet (1500') of the project boundary;
    - b.** Any applicable historic, cultural, or archeological significant sites;  
Significant sites may include but are not limited to: Wells Overlook, Baker Wetland, Kansas River, Sante Fe Trail, any local, state, tribal, federal designated trails;
    - c.** All public roads within the project area or adjacent to the project area, and;
    - d.** Any applicable government-designated scenic byways, government-designated scenic overlooks, public parks, Conservation Areas, or Wildlife Refuges.
  - 4) Photographic simulations of key viewpoints shall be provided as determined necessary by Zoning and Codes Director or their designee;

- 5) Impact of shadow flicker on dwellings from any C-WECS including estimated duration of the shadow flicker (in hours per year);
  - 6) Potential hazards of blade glint, and;
  - 7) A report detailing expected cumulative impacts, as assessed above, caused by C-WECS operation.
- e. **Noise Impact Assessment.** An assessment developed by a Qualified Professional, board certified by Institute of Noise Control Engineering (INCE), of the potential adverse impacts caused by operational noise levels from the project and any proposed measures to mitigate or lessen the effects of the adverse impacts. The assessment and mitigation plan shall include, at a minimum, the following:
- 1) A report detailing existing noise levels prior to project, both during day hours and night hours.
    - a. A map of locations the data is collected
      - i. Data must provide adequate understanding of existing conditions within project area and the 2-mile radius surrounding the Project. Further study may be required at the discretion of the Director of Zoning and Codes.
    - b. Information regarding wind direction and speed of wind at time of collection.
  - 2) A report detailing expected sound level at the nearest Participating Landowner's dwelling(s) and nearest Non-Participating Landowner's dwelling(s).
    - a. Expected low-frequency noise generated from C-WECS Project operations.
    - b. Expected high-frequency noise generated from C-WECS Project operations.
  - 3) A report detailing expected sound level at the property line of the nearest Non-Participating Landowner.
    - a. Expected low-frequency noise generated from C-WECS Project operations.
    - b. Expected high-frequency noise generated from C-WECS Project operations.
  - 4) A report detailing expected cumulative impacts caused by C-WECS Project operations.
- f. **Environmental Impact Assessment.** An assessment developed by a Qualified Professional of the potential adverse impacts on the natural and physical environment from the project and any proposed measures to mitigate or lessen the effects of the adverse impacts. The assessment and mitigation plan shall include, at a minimum, the following:

- 1) Documentation that the Operator/ Applicant has followed the United States Fish and Wildlife Service Land Based Wind Energy Guidelines and copies of all resulting studies and recommendations;
- 2) Impact, if any, to species of birds protected under the Migratory Bird Treaty Act of 1918, as may be amended from time to time;
- 3) Impact on any endangered or threatened species, including species in need of conservation as defined by Kansas Division of Wildlife and Parks in the project area;
- 4) A summary of the identified natural resources as found on the Kansas Natural Resource Planner as well as the accompanying results from site specific project data request. For assistance with these requests, please contact the Heritage Conservation Council of Douglas County;
  - a. If the proposed project area has not been inventoried, this shall be done at the applicant's expense if determined necessary by the Heritage Conservation Council.
- 5) Impact on Environmentally Sensitive Lands;
- 6) Impact on wildlife;
  - a. Impact on wildlife habitat in the project area.
  - b. Impacts on wildlife corridors in the project area.
- 7) Impact on flora in the project area;
- 8) Impact of the project on water quality and water supply in the area;
- 9) Impact on livestock, defined by Section 12-315.2, in the project area;
- 10) Expected long term effects on agricultural land and mitigation techniques which would assure land remains viable for agricultural uses after decommissioning;
- 11) Any wastes, either municipal solid waste or hazardous waste, generated by the project at any point in its lifespan;
- 12) Electromagnetic fields and communications interference generated by the project;
- 13) Risk of fire from the project, including but not limited to: fires started by equipment failure, threat of lightning strikes and risks associated with prescribed and non-prescribed burnings;
  - a. A prescribed burning plan shall be provided to and approved by the Fire authority.
- 14) An archeological reconnaissance survey within the project area shall be provided to the State Historic Preservation Office (SHPO) to determine if cultural resources are present, and;

15) A general discussion of any potential changes to the above assessment items that could be anticipated when considering the cumulative impacts of other wind energy projects in the region. The region shall be defined as all counties adjoining Douglas County and including Douglas County. When considering the cumulative impacts, only wind energy projects that are either existing, approved, or applied for shall be considered. Speculative projects that are not publicly known are not required to be considered.

- g. Stormwater Management Plan.** A stormwater management plan with supporting calculations, documenting how runoff will be conveyed throughout the site. The calculations must include the design of open channels and culverts on site. Based on recommendations from the County Engineer, storage and controlled release at points of discharge from the site may be required. The stormwater management plan must be implemented on the final site plan prior to construction.
- 1) Preliminary stormwater management plans shall be provided with the original application, as required by the County Engineer, however, engineered or detailed plans must be submitted for the County Engineer's review and evaluation prior to the Board of County Commissioners' final action on the application.
    - a. More detailed information may be required by staff when needed to make informed decisions on the use.
    - b. Changes to the stormwater plan, such as detention, shall be shown on the final plans for the Board of County Commission's consideration.
- h. Traffic Study and Road Maintenance Agreement.** Traffic study with supporting documentation for expected traffic generation, haul routes, and anticipated impacts to public road maintenance. Plans shall be submitted for review and approval by the County Engineer and applicable governing body. Based on study results staff may require additional documentation and specific mitigation. The plans shall include, but are not limited to:
- 1) A general project schedule including the construction schedule and phased development;
  - 2) Traffic Study and Haul Route Plan
    - a. A traffic study estimating the volume and type of traffic generated by the project, both during construction and during normal operations.
    - b. The traffic study shall identify proposed haul routes for construction traffic, trucks, and oversize or overweight loads.
    - c. The applicant will be required to mitigate anticipated impacts to the transportation network. Based on the traffic study and the County Engineer's recommendations, the following items may be required prior to approval of the conditional use permit:
      - i. Notes on the plan designating haul routes from the site to a paved county or state highway.

- ii. Public improvement agreements to be executed with the county or township, addressing compensation for necessary road, bridge or culvert improvements on public roadways.
  - iii. Road Maintenance Agreement with the county or township, identifying designated haul routes and specifying the required road maintenance terms, schedule and compensation. Road Maintenance Agreements shall be filed with the Register of Deeds office after final approval of the CUP.
- i. Operation and Maintenance Assessment. Operation and maintenance requirements (including frequency of maintenance activities) for the turbines and transmission lines. Width of transmission line easements required, and any restrictions necessary on land use, development, and access within said easement. Assessment shall include, at a minimum, the following:
- 1) Potential hazards from collapse or damage of turbines or system components in severe storms;
  - 2) Potential hazards from ice throws and debris throws;
  - 3) Dust from project activities;
- j. Federal Aviation Administration (FAA) Requirements Acknowledgement. A description of the FAA requirements applicable to the structures and facilities on the site and the proposed methods for meeting those requirements.
- k. Emergency Mitigation Plan. A plan including all means of managing an Extraordinary Event within a wind farm project area shall include, but will not be limited to, the following information:
- 1) Site map including emergency ingress/egress with the location of the access drives and the width and load rating of the access drives.
  - 2) Emergency contact information; which will also be posted on the site.
  - 3) Description of how the fire safety system, and its associated controls will function and be maintained in proper working order.
  - 4) Fire protection and suppression systems for any C-WECS and any accessory structures.
  - 5) Site control measures during and after any emergency. All means of managing an emergency including shutting down the C-WECS shall be noted and clearly marked.
  - 6) Procedures for inspection and testing of associated alarms, interlocks, and controls shall be noted on the plan.
  - 7) Material Safety Data Sheet (MSDS). Unless the facility meets the reporting thresholds of Emergency Planning and Community Right to Know (EPCRA) Act, in which case the applicant shall provide a Tier II report, if required by the EPA.

(The EPA requires Tier II reports for facilities that store hazardous chemicals above certain threshold quantities.)

- I. Decommissioning Plan. A general description of the decommissioning and land reclamation strategy in the event the project is abandoned, the CUP is revoked or expires without renewal, or upon the end of the useful life of the project;
- m. Costs. The applicant shall be responsible for the costs of all required public notice, publications, and the preparation of the application materials.
- n. Public Notice. Within 24 hours of Conditional Use Permit submission, the Applicant shall notify surrounding landowners of the application as provided in this section. This requirement is in addition to the notice requirement of Section 12-307.
  - 1) The Applicant must provide written notice to all landowners of record of unincorporated property located within two miles of any boundary of the proposed C-WECS Project.
  - 2) At the time of mailing, the Applicant shall submit a certified list of landowners received from the County Clerk, including the sample letter.
  - 3) The notice shall be mailed and include a brief description of the project, proposed construction date, date the application was submitted to the planning office, and the person representing the Applicant, with their contact information (phone number, email address, etc.) to respond to questions concerning the proposed application and the following statement:

*This letter is being sent to the owners of nearby property for the purpose of informing the property owners and other interested parties about the proposed Commercial Wind Energy Conversion System (C-WECS) project described further in this letter. This letter does not grant the recipient and/or property owner any additional legal rights to challenge the proposed development, instead, it is being provided solely to advise property owner(s) of the pending development. For further information, contact the applicant's designated representative or the Lawrence-Douglas County Planning Office at 785-832-7700.*
  - 4) The Applicant is responsible for mailing notice to all property owners listed on the certified property owner list.
  - 5) Failure of a party to receive such notice will not be grounds to invalidate any action taken by the Planning Commission or the Board of County Commissioners.
- o. Provisions. The application shall acknowledge and note the following provisions, which shall be conditions of CUP approval, unless waived by the Board of County Commissioners:
  - 1) The Board of County Commissioners, or the appointed representatives thereof, shall have the right, without advance notice, to enter the Project area and inspect any aspect of the C-WECS during construction and operation for compliance with the conditions of this permit. The Applicant or Operator must ensure that County

representatives have a legal right to access any real property within the Project area for this purpose, including but not limited to securing such rights from Participating Landowners. If the land within the Project area, or any portion thereof, is enclosed, the Applicant or Operator shall make arrangements with Participating Landowners so that County representatives have legal access to real property within the Project area and a right to inspect the turbine(s) as provided in this section. If County representatives desire to climb the tower and/or closely inspect the operating equipment (e.g., hub, rotors, etc.), they will first ask the Operator for an escort for the purpose of accessing the equipment. If the Operator fails within a reasonable time to provide an escort for such purposes, County representatives may access any aspect of the turbines for purposes of conducting an inspection.

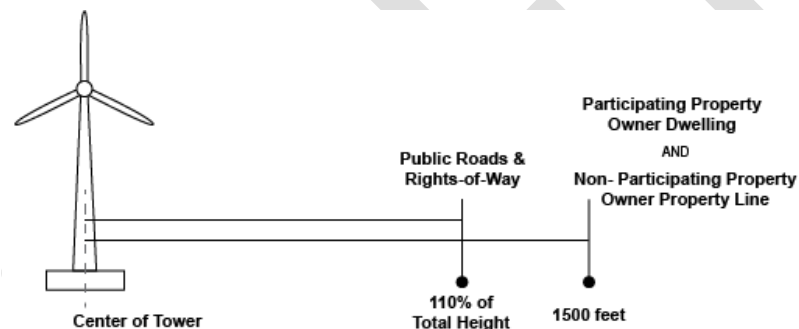
- 2) Decommissioned equipment shall be removed from the site and the foundations shall be removed to a depth of four (4) feet below the ground surface.
- 3) The C-WECS and its associated facilities shall not be operated so as to cause microwave, television, radio, telecommunications or navigation interference contrary to Federal Communications Commission (FCC) regulations or other laws.
- 4) Any C-WECS CUP shall not be transferred from one party to a different person or entity without advance approval of the Board of County Commissioners. The Applicant shall notify the Board of County Commissioners and the Zoning and Codes Director, in writing, of any intent to transfer the CUP from one party to another. All CUP transferees shall be required to meet the same conditions as the original Applicant. The transferee shall also meet the surety bond/escrow requirement to ensure the C-WECS is decommissioned and removed to CUP specifications at the end of the project's useful lifespan or in case of abandonment. Notwithstanding these limits on transfer, the Commission may, in its discretion, provide for conditions that allow bank financing of a C-WECS project, including a mortgage or lien on project assets, but any transfer or assignment of an interest in the CUP will remain subject to prior approval of the Board of County commissioners.
- 5) Prescribed burning of land is permissible only after appropriate contact with County offices. All burning must follow the approved prescribed burning plan. Burning is not allowed on "designated no-burn days".
- 6) Designated haul routes for construction, maintenance, and decommissioning shall be followed per the Road Maintenance Agreement on file with the Douglas County Public Works Office.

**12-306-44.03.03      Design Standard**

The following design standards are applicable to Commercial Wind Energy Conversion Systems Projects (C-WECS). P-WECS are exempt from this section.

- a. Setback. This section regulates the setback of a C-WECS from specified locations.
- 1) Individual turbines shall be set back not less than 1,500 feet from the center of tower to the Participating Landowner's residence (dwelling) and any other occupied structures.
  - 2) Individual turbines shall be set back not less than 1,500 feet from the property line of non-participating property owners.
  - 3) Individual turbines shall be set back from public roads and rights-of-way not less than 110% of the Total Height of the turbine.
  - 4) Additional or reduced setback requirements may be imposed by Board of County Commissioners as conditions of approval to the project.
  - 5) Location of private lease agreements do not override these setback regulations.

FIGURE 4. (12-306-44) Setback



- b. Permitted Height. Permitted height shall be determined by the hub height for each individual turbine, see figure 5. The maximum hub height shall be 80 meters, as measured by manufacturer specifications. The Board of County Commissioners may approve greater height for individual turbines, but not greater than 110 meters hub heights, if increased tower height better aligns with the purpose and intent of this section.
- 1) Total Height. The overall height is determined by the sum of the Hub Height and half of the turbine's rotor diameter, measured at the highest point on the blade tip, see figure 6.



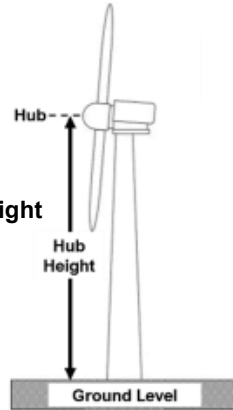


Figure 5. Hub Height

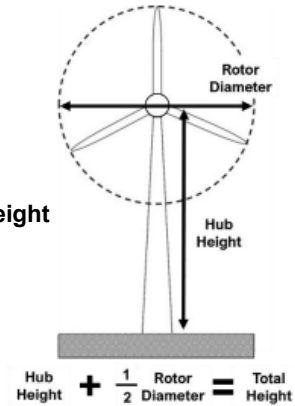


Figure 6. Total Height

- c. Minimum Clearance. Each C-WECS must maintain a minimum clearance of 50-feet from the ground, immediately adjacent to the tower base, to the rotor tip at its lowest point
- d. Anti-climb. All C-WECS turbines must include features to deter climbing or be protected by anti-climbing devices.
- e. Structure. Structures for wind turbines shall be self-supporting tubular towers painted a neutral color such as a white or pale gray. A lattice structure shall be prohibited.
- f. Wireless Facility. No telecommunications dishes, antennas, cellular telephone repeaters or other similar devices shall be attached to wind turbine towers unless mounted inside the tower and approved subject to 12-306-45.03.
- g. Fire Suppression. All C-WECS shall be equipped with an automatic fire suppression system.
- h. Safety Protocols. C-WECS shall be designed to industry best practices and standards.
  - 1) Best available technology shall be utilized for immediate shutdown of turbines when ice buildup is detected in order to prevent ice throw.
  - 2) Lightning protection systems shall be utilized.
- i. Prohibited Markings. Logos or advertisements are prohibited on C-WECS.
- j. Identification Number. Each structure for wind turbine shall be marked with a visible identification number located no higher than fifteen (15) feet above ground level.
- k. Turbine Access Roads. Access roads on private property shall be shown on the site plan.
  - 1) All access roads shall be designed to support an 80,000 pound emergency vehicle apparatus.

- I. Visual Uniformity. To provide visual order to a wind farm project, all individual turbines shall have the same number of rotor blades. All rotor blades shall spin in the same direction (i.e., clockwise or counterclockwise) in relation to the wind.

**12-306-44.03.04      Performance Standards**

The following standards apply to all Commercial Wind Energy Conversion Systems. Failure to comply with these standards may be grounds for suspension, amendment, or revocation of CUP as determined by the Board of County Commissioners as described in 12-307-2.11

**a. Siting Considerations.**

- 1) Agricultural uses and wildlife habitat shall be accommodated within the facility layout and design to the greatest extent possible.
- 2) Prescribed burning of land is permissible only after contact with neighboring property owners and appropriate contact with County offices. Burning is not allowed on “designated no-burn days”.
  - i. Refer to County Zoning Regulations Chapter 6 Fire Safety for additional information applicable to outdoor burnings.
- 3) Historic, cultural, or archaeological resources shall be protected within the project area and following shall be considered/ followed during construction:
  - i. Any unrecorded cultural resources that are found during construction shall be evaluated for integrity and potential listing on the National Register of Historic Places. Undocumented resources that are eligible for listing on the National Register of Historic Places shall be avoided.
  - ii. All archaeological investigations shall meet the State Historic Preservation Office (SHPO) standards and guidelines.

**b. Visual Impact.**

- 1) Shadow Flicker
  - i. Turbines shall be sited in manner that minimizes shadow flicker to less than 30 hours per year to any dwellings within the project area and surrounding area including both participating and non-participating property owners.
  - ii. Property owners may waive these standards under a written agreement. Any such agreement shall be recorded with the Douglas County Register of Deeds office.
  - iii. Operator shall avoid causing unreasonable adverse shadow flicker effects at any dwelling(s) located on a non-participating landowner property.
- 2) Lighting
  - i. All turbines and accessory facilities shall be sited to minimize adverse visual effect on the environment;

- ii. All turbines and accessory facilities shall be sited to minimize adverse visual effect on the non-participating property owners;
- iii. The Project should be designed and configured to minimize impacts to the night sky for all lighting that is not required by FAA Standards;
- iv. Lighting of turbines shall be radar activated and in compliance with current FAA Aircraft Detection Lighting System regulations. Any emergency reserve lighting shall follow “daytime white / nighttime red” standards;
- v. Lighting shall be shielded from ground view to FAA maximum standards;
- vi. Safety lighting consistent with the intent of FAA regulations shall not exceed what is strictly necessary for aircraft safety;
- vii. Lighting of accessible doors on turbines and accessory structures shall comply with Section 12-314-3.

3) Blade Glint

- i. Blade glint impacts shall be avoided by using equipment with a non-reflective coating or mitigation technique for the surface of the rotor blades.
- ii. In no case shall blade glint adversely impact public health, safety and welfare.

4) Viewshed

- i. If built C-WECS project area materially differs from simulations and descriptions provided in the visual impact assessment, greater mitigation techniques will be required as determined by the Governing Body.
- ii. These mitigation techniques may include but are not limited to, landscape screening, fencing, or removal of individual turbines at operator’s expense.

**c. Noise Impact.**

1) Operational Noise Management

- i. Noise level shall not exceed 50 decibels measured at the property line of the nearest non-participating property owners.
- ii. Noise caused by operating turbines shall not cause adverse low-frequency sounds which disrupt non-participating property owners.
- iii. If noise level is found to be exceeding the maximum allowed for a sustained period of time the turbine shall be powered down until appropriate mitigation techniques are established.
- iv. Public health, safety, and welfare of the community shall be protected for the lifetime of the project. A good faith effort shall be made by the C-

WECS Operator to mitigate any unforeseen issues caused by demonstrable noise impacts.

2) Construction Noise Management

- i. During construction phase of C-WECS development, construction activities of any nature may only occur from one hour after sunrise until one hour before sunset.
- ii. Construction noise management may be modified during the public hearing process of a CUP.

d. Environmental Impact.

1) Industry and Environmental Guidelines

- i. Environmental guidelines and industry codes of practice shall be followed.

2) Wildlife and wildlife habitat, including avian impact

- i. C-WECS Projects should avoid areas that would interfere with wildlife migratory corridors and staging areas.
- ii. There should be minimal impact to existing wildlife, endangered and threatened species, wetlands, geoconservation areas, species in need of conservation as defined by Kansas Division of Wildlife- Parks, and other biologically Environmentally Sensitive Lands within the project area as defined in Douglas County Zoning and Land Use Regulation Section 20-314
- iii. In the event of an extraordinary event causing kills of protected species which requires reporting to state or federal agencies, the report will also be sent to the Zoning and Codes Director.
- iv. C-WECS Projects should avoid areas which may adversely affect native lands and animals.

3) Impact on Environmentally Sensitive Lands

- i. Wind turbines shall be subject to Section 12-303-12 of the County Zoning Regulations and are prohibited from being located within any federally designated floodway.
- ii. Wind turbine development shall not interfere with the preservation and protection of existing stands of mature trees, where the trees have a minimum Caliper of 12” or larger through destruction or removal.
- iii. Features included in Douglas County Zoning and Land Use Regulations Section 12-314 shall be protected.

4) Water Quality and Soil Erosion

- i. Prior to issuance of a building permit, applicant shall obtain approval of a Kansas Department of Health and Environment (KDHE) stormwater permit and Stormwater Pollution Prevention Plan (SWPPP)

5) Electromagnetic fields and communications interference

- i. Operations from wind turbines shall not interfere with the operations of emergency communications or electromagnetic fields.
- ii. Any disruption to communications, (911 dispatch, cell phone reception, etc.) must be mitigated and addressed immediately at the Operator's expense.
- iii. Any disruption to television, radio, or other services which rely on electromagnetic waves for service must be mitigated and addressed immediately at the Operator's expense.

6) Impact on cultural, historical, or archeological features;

- i. C-WECS Projects shall avoid areas that would impact important cultural, historical, or archeological features.

**e. Infrastructure Impact.**

1) Transportation

- i. The applicant will be required to mitigate anticipated impacts to the transportation network. The transportation network includes, but is not limited, to bridges, private roads, and public roads.

2) Utility

- i. Any disruption to public utilities, (gas, electric, water, cable, etc.) shall be addressed immediately at the Operator's expense.

3) Emergency Response

- i. Signage shall be required as identified by Douglas County Emergency Management.
- ii. The Operator shall update the Emergency Mitigation Plan annually in collaboration with Douglas County Emergency Management.

**f. Aviation and Federal Aviation Administration (FAA) Impact.**

1) Airports and airstrips

- i. Operations from wind turbines shall not interfere with the operations of the Lawrence Regional Airport or any public or private airport or airstrip within the region surrounding Douglas County.

- ii. Setbacks shall follow FAA guidelines and requirements.

**g. Building Safety and Construction Management.**

1) Industry Standards

- i. Safety guidelines and industry codes of practice shall be followed.

2) Building Codes

- i. Project shall be subject to review and approval for compliance with applicable building codes.

3) Safe Practices

- i. A Qualified Professional shall complete a structural integrity review before building permit issuance and anytime thereafter if necessary, in the judgment of the Zoning and Codes Director.
- ii. All C-WECS shall be in compliance with all applicable Federal, Tribal, State, and Local regulatory standards including, but not limited to, the Endangered Species Act, Clean Water Act, the International Building Code, National Fire Protection Association 855 Standards, the National Electric Safety Code, and the National Electric Code, as amended.

**h. Extraordinary Event Response.**

- 1) As soon as possible, and not later than 48 hours after the occurrence of an Extraordinary Event, the Applicant shall notify the local fire district, emergency response agencies, Douglas County Emergency Management, and the Zoning and Codes Office.
- 2) In the event of an Extraordinary Event, the applicant shall, within 30 days of the occurrence, submit a report of findings to the Zoning and Codes Director, and other state and federal agencies including but not limited to the following, as may be applicable:
  - i. The Kansas Department of Parks and Wildlife Parks,
  - ii. The U.S. Fish and Wildlife Service
  - iii. Occupational Safety and Health Administration.
  - iv. U.S. Army Corps of Engineers
- 3) If the reason for the event is not immediately known, it shall be thoroughly investigated.
- 4) The applicant shall provide revised plans to avoid future occurrences.
- 5) Any mitigation techniques proposed by the governing bodies shall be followed by the applicant.

- 6) The Operator shall update the Emergency Mitigation Plan annually in collaboration with Emergency Management, and provide new copies to the local fire district, emergency response agencies, Douglas County Emergency Management, and the Zoning and Codes Office.
- 7) Any specialty response equipment required to adequately manage Extraordinary Events will be provided, updated, and/or replaced by the operator, as needed and at the operator's expense.
- 8) Annual Emergency and Extraordinary Event response training will be provided for all emergency response stakeholders on the plan, site, equipment, and processes required to assure their safety and effective management during an event.

i. Operation and Maintenance.

- 1) Operator shall update contact information as needed.
- 2) Operation and Maintenance Plan shall be updated as needed.
- 3) If the operator listed on the approved CUP plans to sell or otherwise transfer their responsibilities to an entity not listed on the CUP, the listed operator shall notify the Governing Body in writing of this proposed change. This notice shall include acknowledging their acceptance of responsibility and intent to comply with all conditions listed in the approved CUP.
- 4) Individual turbines, associated equipment, and wind farm project area shall be maintained and kept in good condition by the Operator.
  - i. Maintenance shall include, but not be limited to, painting, structural repairs, replacement of damaged or worn parts or cables, and integrity of security measures.
  - ii. Site access shall be maintained to a level acceptable to local emergency personnel. The Operator shall be solely responsible for maintaining the subject site, all appurtenant structures and the installation and maintenance of any access road(s), unless accepted as public right-of-way.

j. Decommissioning and Reclamation.

- 1) The decommissioning and reclamation plan shall be maintained and updated as necessary in the judgment of the Zoning and Codes Director.
- 2) To verify production level, a report of power generated by the C-WECS shall be submitted to the Zoning and Codes Director annually.
  - i. Additional reports will be provided upon request of the Zoning and Codes Director in order to assess operational status and to determine if turbine(s) have been abandoned.

**k. Evaluation.**

- 1) In the event a C-WECS is performing in such a way to cause immediate harm to the public's life, safety, or welfare, the Zoning and Codes Director or their designee shall have the authority to require the operator to cease operations immediately, and to refrain from operations until the Zoning and Codes Director determines that the harm has been eliminated.
- 2) Complaints received by County Zoning and Codes Office will be documented, and the complaint will be forwarded to the operator.
  - i. If requested by the Zoning and Codes Director, or their designee, the operator will investigate the complaint and provide a summary of its findings to the Zoning and Codes Director or designee. Zoning and Codes may also conduct its own independent investigation.
  - ii. The Operator will promptly comply with proposed mitigation techniques, if any, as directed by the Zoning and Codes Director or their designee to ensure compliance with the requirements, terms, and conditions of the CUP. Such mitigation techniques will be completed by the Operator at the Operator's expense.

**12-306-44.03.05 Building Permit Issuance**

Upon issuance of the Conditional Use Permit, Douglas County Zoning and Codes may issue a building permit for the project prior to the start of construction.

- a. Time limitation on Approval. If a building permit for a C-WECS is not obtained for the site within two years from the date of the Conditional Use Permit approval by the Board of County Commissioners, the Conditional Use Permit approval shall become null and void.
- b. Affidavit. Following approval by the Board of County Commissioners and upon issuance of the Conditional Use Permit (CUP) by the Zoning and Codes office, Zoning and Codes shall file an affidavit with the Register of Deeds on all the properties and/or parcels within the CUP project area. The affidavit will include a reference to the CUP by number, date, and expiration. Filing fees will be at the applicant's expense.
  - 1) The applicant must provide a copy of Participating Landowner authorization documentation sufficient to demonstrate the Applicant's right to construct and operate the project on each parcel in the proposed project area.
- c. Application. In addition to the requirements outlined in the building code, as adopted by Douglas County, the building permit application shall contain all of the following information to be provided by the Operator:
  - 1) All of the special conditions outlined in the Conditional Use Permit approval;
  - 2) A site plan, in final detail, that includes all of the information required on the application site plan;
  - 3) A final grading plan;



- 4) Copy of the KDHE Approved Stormwater Permit and SWPPP (Stormwater Pollution Prevention Plan);
  - 5) Copy of the approved Traffic and Road Maintenance Agreement
  - 6) A final plan for site security;
  - 7) A final decommissioning and reclamation plan;
  - 8) Documentation of the establishment of the Security for reclamation, and;
  - 9) Documentation that the project is in compliance with all of the requirements of the following:
    - i. Federal Aviation Administration;
    - ii. Federal Communications Commission, if applicable;
    - iii. Kansas Department of Natural Resources, if applicable;
    - iv. Kansas Department of Agriculture – Division of Conservation, if applicable, and;
    - v. Any other Federal, Tribal, State, and/or Local agency that has regulations applicable to the project.
- d. Term of CUP. The Conditional Use Permit shall be valid for 25 years from the date of the Board of County Commissioners' approval, or for such other duration as specified by the Board of County Commissioners. Continuation of the use beyond the authorized term will require the submission and approval of a new conditional use permit.
- e. Building Permit and Plan Review. The applicant shall contract with a special inspector and/or Plan Reviewer, approved by the Zoning and Codes Director, for construction plan review and all required construction inspections, at the operator's expense.
- f. Conditional Use Compliance.
- 1) Operator shall contract, at their expense, with a Qualified Professional to have an on-site representative verifying continued compliance during the construction phase of the Conditional Use Permit.
  - 2) Reports regarding compliance shall be submitted to the Director of Zoning and Codes as determined during the Pre-Construction Meeting.

**12-306-44.03.06**

**Revisions to Approved Plan**

- a. Minor Revisions. Modifications may be approved through the administrative site plan process per 12-307.
- 1) A minor change has to be mutually agreed upon by the Zoning and Codes Director and the Planning Director and may include:
    - i. Change in location of project-interior turbines subject to all setbacks and other siting requirements;

- ii. Modifications to project phasing;
  - iii. Changes which do not adversely affect the adjacent non-participating property owner(s).
- 2) A minor modification includes changes which are not considered major changes.
- b. Major Revision. Any major change of the project will require approval of a new conditional use permit. This would include but is not limited to:
- 1) Expansion of the project area;
  - 2) Increase in turbine height;
  - 3) Additional turbines than approved;
  - 4) Changes which may adversely affect the adjacent non-participating property owner(s) as determined by the Zoning and Codes Director and/or the Planning Director.
  - 5) All major changes must be approved by the Board of County Commissioners subject to public notice standards.
- c. Revised Plan. Plans reflecting revisions, including exact location of as-built structures, will be sent to Zoning and Codes Director within 30-days of Wind Farm project completion.

**12-306-44.03.07      Abandonment, Decommissioning and Reclamation Plan**

A decommissioning and reclamation plan shall be required to ensure that facilities are properly removed and the land is reclaimed at the appropriate time. This plan shall be revisited and evaluated every five years unless otherwise specified by the Board of County Commissioners.

**a. Security Requirement**

- 1) Purpose. The purpose of the security requirement is to ensure that adequate funding is available to pay the costs of decommissioning and site reclamation, including removal of individual turbines and other above-ground project improvements, and other tasks as necessary to reclaim and restore the project site.
- 2) Submittal of Security. The Operator of a C-WECS shall, at its expense, and not later than 30-days before commencement of project construction, obtain and submit Security in favor of the County for approval by the Board of County Commissioners.
- 3) Form of Security. Such Security shall be in the form of a letter of credit, a cash escrow account, a performance bond, or other form of Security which is acceptable to the County. Any entity providing Security must be authorized to

provide such Security in the State of Kansas and must be acceptable to the County Commission. The Security must contain such provisions, terms or conditions as the County deems to be necessary, including, but not limited to, those set out herein, unless specifically waived in writing by the County.

- 4) Amount. The Security shall be in an amount equal to one hundred (100) percent of the estimated decommissioning and reclamation costs and shall provide for an annual adjustment of the amount of the Security based on the annual rate of inflation. Such amount shall be determined by the County Commission based upon estimates from knowledgeable contractors and such other information or factors that the County Commission deems to be relevant.
- 5) Maintenance of Security. The Security may not be canceled, released, or in any way terminated without prior written approval from the County Commission. The Security shall be maintained and continued in force as long as such turbines or other above-ground improvements exist and until all decommissioning and site reclamation has been completed and paid for.
  - a. Additional Security. If the County Commission has any reason to believe that the Security is insufficient, it may require such other Security as it deems to be necessary.
  - b. Survival of Sale. The Security must be written so as to survive any sale or transfer of the turbines and related project property or the insolvency of the Operator. It shall further apply to all successors and assigns of the Operator.
- 6) Non-Liability: By accepting the Security described in this section, Douglas County does not and will not accept any liability or duty whatsoever for taxes, wages, or any other employee benefits for any person or entity. Contractors, suppliers, or consultants accepting and relying on documents, materials, and other information from the Applicant or CUP holder will do so on their own responsibility and at their risk.

**b. Abandonment.**

- 1) Individual Turbine. An individual turbine shall be considered to have been abandoned when the turbine is incapable of producing at least 20% of the average amount of electricity produced by such turbine in comparable previous time periods (adjusted for actual wind conditions), as determined by the Zoning and Codes Director, for a period of at least six (6) consecutive months and there is no demonstrated viable plan to restore the equipment to operating condition.
- 2) Entire Project. An entire project shall be considered to have been abandoned when fifty percent (50%) or more of the individual turbines in any Wind Farm are abandoned, and there is no demonstrated viable plan to restore the equipment to operating condition within one year, except in the case of an Extraordinary Event subject to a County approved schedule of completion.

- 3) Extension. An extension of the 6-month time period may be granted by the County Commission upon the presentation of sufficient justification by the Operator.
- 4) Excavation. All underground equipment and foundation systems of C-WECS shall be removed to a depth of at least four feet (4') to allow for the cultivation of crops, restoration of pasture, or installation of underground utilities.

c. Reclamation

- 1) Operator Initiated. The Operator shall commence reclamation proceedings within 90-days of the date of abandonment of an individual turbine and/or the entire project. Reclamation activities shall be conducted in accordance with the reclamation plan and the standards contained in these regulations.
- 2) Governing Body-Initiated. Upon determining that any individual turbines and/or the entire C-WECS Project has been abandoned, the Zoning and Codes Director shall notify the Operator by certified mail. The notice shall allow 90-days for the commencement of decommissioning. The notice shall also inform the Operator of their right to request a hearing before the County Commission.
  - a. Abandonment and Reclamation Hearing. Upon request of the Operator or expiration of the 90-day deadline without completion of reclamation, the Director may schedule a hearing with the County Commission and provide the operator notice as to the time and location of the hearing.
  - b. Hearing Purpose. The purpose of the hearing is to determine the validity of the determination of abandonment, establish whether the Operator intends to reclaim, and whether to authorize the use of Security to complete the reclamation of the individual turbine site(s) or the entire project.
- 3) Within 6 months of notification of abandonment and the need for reclamation, unless amended or vacated through the hearing process described in this section, the C-WECS shall be removed from the property and the property restored. The post-decommissioning storm water runoff plan shall be implemented.
- 4) If the Operator or Participating Landowner fails to remove the C-WECS and reclaim the site, the Governing Body may remove or cause the removal of the C-WECS and the reclamation of the site. The County may recover the cost of decommissioning and reclamation from the Operator, the Participating Landowner, and the Security.
  - a. Any decommissioning and reclamation cost incurred by the County that is not recovered from the Operator, Participating Landowner, or Security will become a lien on the property where the removal or reclamation takes place and may be collected from the landowner in the same manner as property taxes.