

## **SECTION 53 WIND ENERGY CONVERSION SYSTEMS (WECS)**

### DEFINITIONS

The following definitions apply to this part:

- 53.1 Blade  
An element of a WECS rotor which acts as a single airfoil, thereby extracting kinetic energy directly from the wind.
- 53.2 Blade Clearance  
In reference to a horizontal axis rotor, the distance from grade to the bottom of the rotor's arc.
- 53.3 Commencement of Construction  
For the purposes of this section, commencement of a development shall be defined as the moment any excavation has begun.
- 53.4 Horizontal Axis Rotor  
A wind energy conversion system where the rotor is mounted on an axis horizontal to the earth's surface.
- 53.5 Rotor's Arc  
The largest circumferential path travelled by a WECS' blade.
- 53.6 Shadow or flicker  
The repetitive moving shadows or reflection cast by the rotor blades as they cut through the sun or sunlight.
- 53.7 Total Height  
The height from grade to the highest vertical extension of a WECS. In the case of a WECS with a horizontal axis rotor, total height includes the distance from grade to the top of the tower, plus the distance from the top of the tower to the highest point of the rotor's arc.
- 53.8 Towers  
The structure which supports the rotor above grade.
- 53.9 Vertical Axis Rotor  
A wind energy conversion system where the rotor is mounted on an axis perpendicular to the earth's surface.
- 53.10 Wind farm or Project  
A power plant consisting of a group of wind turbines and related facilities connected to the same substation or metering point used for the production of electric power. The wind farm boundary is defined by all titled parcels participating in the project.

#### 53.11 Wind Energy Conversion System (WECS)

A wind energy conversion system is a structure designed to convert wind energy into mechanical or electrical energy. For the purposes of this bylaw, WECS are categorized as follows:

**Category 1 WECS:** WECS in this category may be a permitted or a discretionary use dependant on the applicable land use district, and where allowed by an Area Structure Plan. The WECS total height shall be 15 m (49.2 ft.) or less. Only one WECS shall be approved per titled parcel. (see 53.12-53.14)

**Category 2 WECS:** WECS in this category shall be a discretionary use in all applicable land use districts and where allowed by an Area Structure Plan. The WECS total height shall be greater than 15 m (49.2 ft.) and less than 35 m (114.8 ft.). Only one WECS shall be approved per titled parcel. (see 53.12-53.14)

**Category 3 WECS:** WECS in this category shall be designated to the Wind Farm Industrial land use district. A Category 3 WECS is defined by either:

- a single WECS with a total height of 35 m (114.8 ft.) or greater,
- or where the applicant proposes a wind farm with more than one WECS of any height per titled parcel.

#### APPLICATION REQUIREMENTS FOR CATEGORY 1 and 2 WECS

53.12 Applications for Category 1 and 2 WECS shall be accompanied by:

- (a) the manufacturer's information on power generation and the tower;
- (b) appropriate letter of approval from Transport Canada and NAV Canada for WECS Category 2;
- (c) shadow and flicker, and noise data which shall be considered for approval according to section 16.17 of this bylaw;
- (d) an analysis for noise to any property line;
- (e) scaled drawings of foundation and tower showing compliance with CSA standards and be certified by a professional engineer;
- (f) an accurate site plan showing and labeling the information including the exact location of the turbine (tower and rotor arc) including setbacks and building locations;
- (g) unless otherwise required by the MPC, a category 1 and 2 WECS shall be finished in a non-reflective matte and in a colour which minimizes the obtrusive impact of a WECS to the satisfaction of the MPC;
- (h) no advertising shall appear on the tower or blades;
- (i) other information that may be required by the Development Authority.

53.13 The MPC may require a public meeting prior to consideration of the permit.

#### SETBACKS FOR CATEGORY 1 and 2 WECS

53.14 The tower base of the Category 1 and 2 WECS shall be located no less than two times the total height of the WECS from the property line.

### APPLICATIONS FOR CATEGORY 3 WECS

- 53.15 A WECS application shall be submitted for each titled parcel.
- 53.16 The MPC may approve a WECS application on a case-by-case basis subject to Part III – Development Permits Section 16.
- 53.17 Prior to a decision being made, the MPC shall hold a public meeting in order to solicit the views of the public in regard to the application for a Category 3 WECS development.
- 53.18 The applicant shall forward to the M.D. of Pincher Creek copies of all regulatory and utility permits, approvals, and conditions prior to commencement of construction.
- 53.19 A Category 3 WECS development permit shall have a maximum five (5) year development time line as outlined in subsections (a), (b) and (c) below.
- (a) Commencement of construction shall occur within two (2) years of the issuance of the development permit. A time extension as described in (c) or a timeline suspension as described in (d) must be applied for prior to the expiration of the two (2) year commencement of construction period;
  - (b) Construction shall be completed within two (2) years of commencement of construction. The one (1) year time extension described in (c) may be granted by MPC provided it was not previously granted under subsection (a). A time extension as described in (c) or a timeline suspension as described in (d) must be applied for prior to the expiration of the two (2) year construction period;
  - (c) A time extension considered by MPC in (a) and (b) may be approved for a single one (1) year term and the applicant must provide reasons why the extension is necessary;
  - (d) The MPC may consider suspending the five (5) year timeline described above in cases where a development hardship is proven to the satisfaction of MPC. The MPC shall specify the duration of any timeline suspension as part of the approval.
  - (e) The development permit shall expire if the suspension period in (d) is not granted and any period described in (a), (b) (c) or (d) lapses,
- 53.20 In balancing existing land uses and the development of Category 3 WECS, the MPC may require developers to minimize impacts:
- within 1.6 km (1.0 miles) of a Provincially controlled highway;
  - within 3.2 km (2.0 miles) of the boundary of a Provincially or Federally designated parks;
  - along ridge lines;
  - within 2 km (1.2 miles) of a developed Group Country Residential land use designation or Hamlet, Town or Village boundary.

### APPLICATION REQUIREMENTS FOR CATEGORY 3 WECS

- 53.21 All development applications for a Category 3 WECS shall be accompanied by:
- (a) an accurate site plan showing and labeling the information including the exact location of each existing and proposed wind turbine (tower and rotor arc) including setbacks as defined in Section 53.24-28 (also to be provided in chart form), all

associated substations, collection and transmission system on or abutting the subject lot or parcel, and contours of the land and access roads for the complete wind farm;

- (b) an accurate plan showing the titled parcels and location of WECS within each application;
- (c) a digital database listing exact location and base elevation of each wind turbine in a format acceptable to the M.D. (NAD 83 Geographic Coordinates, decimal degrees only);
- (d) a visual representation depicting the wind farm from:
  - no further than 5 km (3.1-miles) away;
  - each accessible residence within 2 km (1.2 miles) of the wind farm boundaries;
  - any significant sites as determined by MPC.

Visual representation shall include:

- scale elevations,
  - photographs and/or digital information of the proposed WECS showing total height, tower height, rotor diameter, colour and the landscape, and
  - photographs and/or digital information modeled on ideal visual conditions;
- (e) the turbine specifications indicating:
    - the WECS maximum rated output in kilowatts;
    - safety features and sound characteristics;
    - type of tower;
    - dimensions of tower and rotor
  - (f) the following analyses:
    - 1. the potential for noise at the following:
      - the site of the tower,
      - the boundary of the development,
      - at any habitable or occupied residence within 2 km (1.2 miles) of any turbine;
    - 2. the potential for shadow or flicker at the following:
      - the boundary of the development,
      - at any habitable or occupied residence within 2 km (1.2 miles) of any turbine;
  - (g) a report regarding any public information meetings or other process conducted by the developer;
  - (h) any impacts to the local road system including required approaches from public roads having regard to Municipal District of Pincher Creek standard;
  - (i) post-construction reclamation plan;
  - (j) decommissioning plans.

53.22 Prior to making a decision on a development application for a WECS, the developer shall provide copies of appropriate reports, comments and requests for approvals from the following:

- Transport Canada
- NAV Canada
- Alberta Culture and Community Spirit
- Alberta Environment
- Alberta Transportation
- Alberta Sustainable Resource Development
- Alberta Tourism, Parks, and Recreation
- Alberta Electric System Operator (AESO)
- M.D. of Pincher Creek No. 9 Utility Permit
- STARS

#### REFERRALS FOR CATEGORY 3 WECS

53.23 Prior to making a decision on a development application for a WECS, the MPC shall refer and consider the input from the following:

- an adjacent jurisdiction if its boundaries are located within 2 km (1.2 miles) of the proposed wind farm project boundary;
- municipal district landowners within a 2 km (1.2 miles) of the wind farm project boundary; and
- other relevant regulatory authorities and agencies.

#### SETBACKS for CATEGORY 3 WECS

53.24 The minimum setbacks related to undeveloped or developed municipal roadways measured from the tower base shall be the total height (as defined in this section) plus ten (10) percent.

53.25 The minimum setback related to an Alberta Highway right-of-way shall be determined by Alberta Transportation.

53.26 At no time shall the modeled sound level of a WECS at the wind farm boundary exceed 45dBA unless:

- (a) an easement, as approved by the Municipal Planning Commission, is agreed to by the affected land owner and registered on the affected title, or
- (b) the affected landowner is the crown or an agent of the crown, excluding statutory roads or road plans, and will be asked for comment under a different clause in this bylaw.

53.27 Where adjacent properties (inside the wind farm boundary) are located without a road allowance separation, the setback from the property line shall be 7.5m (24.6 ft.) from outside of the rotor arc.

- 53.28 Where adjacent properties (outside the wind farm boundary) are located without a road allowance separation, the setback to the property line measured from the tower base shall be no less than the total height (as defined in this section) plus ten (10) percent unless a caveat is registered on title, in which case a waiver may be granted.
- 53.29 Where, in the opinion of the MPC, the setbacks referred to in Section 53.24 through 53.28 are not sufficient to reduce the impact of a WECS, the Development Authority may increase the required setback.

#### MINIMUM BLADE CLEARANCE FOR CATEGORY 3 WECS

- 53.30 The minimum vertical blade clearance from grade shall be 7.5 m (24.6 ft.) for a WECS employing a horizontal axis rotor unless otherwise required by the Development Authority.

#### TOWER ACCESS AND SAFETY FOR CATEGORY 3 WECS

- 53.31 To ensure public safety, the approval authority may require that:
- (a) a security fence with a lockable gate shall surround a WECS tower not less than 1.8 m (5.9 ft.) in height if the tower is climbable or subject to vandalism that could threaten tower integrity;
  - (b) no ladder or permanent tower access device shall be located less than 3.7 m (12.1 ft.) from grade;
  - (c) a locked device shall be installed on the tower to preclude access to the top of the tower;
  - (d) all of the above be provided or such additional safety mechanisms or procedures be provided as the MPC considers reasonable and appropriate;
  - (e) the use of tubular towers, with locked door access, will preclude the above requirements.

#### DISTRIBUTION LINES FOR CATEGORY 3 WECS

- 53.32 All collector lines (less than 69 Kv), within the wind farm boundary will be underground except where the MPC approves overhead installations.

#### COLOUR AND FINISH FOR CATEGORY 3 WECS

- 53.33 Unless otherwise required by the MPC, a WECS shall be finished in a non-reflective matte and in a colour which minimizes the obtrusive impact of a WECS to the satisfaction of the MPC.
- 53.34 No advertising shall appear on the towers or blades. On other parts of the WECS, the only lettering will be the manufacturer's and/or owner's identification.

#### REPOWERING FOR CATEGORY 3 WECS

- 53.35 Should a developer propose alteration, retooling or repowering of an existing wind farm where the equipment has changed from the original approval, the developer shall apply for a new development permit.

- 53.36 Should a developer propose infill development (adding new wind turbines) within an existing wind farm, the developer shall apply for a new development permit.
- 53.37 A repowering project as described in 53.35 or 53.36 shall require a redesignation to the Wind Farm Industrial district (WFI).

#### DECOMMISSIONING FOR CATEGORY 3 WECS

- 53.38 Should a WECS discontinue producing power for two years, the WECS operator shall provide a status report to MPC. A review of the status report may result in a request for the WECS to be decommissioned. Failure to comply with a decommissioning request may result in the issuance of a stop order by the designated officer in accordance with the provisions of the Municipal Government Act.

### **SECTION 54 SHIPPING CONTAINERS**

#### REGULATIONS

- 54.1 Shipping containers shall only be allowed in land use districts where listed as a Discretionary Use within Part VIII Districts. Shipping containers are prohibited in all other districts.
- 54.2 There shall be a legal primary use on the property where it is proposed to be located.
- 54.3 Only three (3) shipping containers shall be allowed per lot.
- 54.4 The square footage of the cargo container when added to the square footage of principal and accessory buildings on the property does not exceed the maximum site coverage as defined by the district.
- 54.5 Shipping containers shall be stacked no more than two (2) containers high.
- 54.6 As a condition of the Application for Development Permit, the Municipal Planning Commission may require any shipping container to be screened from view or landscaped to make the site aesthetically pleasing.
- 54.7 All shipping containers must be painted to match the color(s) of the principal building or to the satisfaction of the Development Authority.
- 54.8 All shipping containers must be located in the rear or side yards only, with a side yard setback of 3.0 m (10 feet) and a rear yard setback of 6.1 m (20 feet).
- 54.9 The Municipal Planning Commission may issue a temporary permit for the placement of any shipping container, where listed as a discretionary use in a land use district, with all or some of the above noted requirements being applied to these temporary shipping containers. Approvals for temporary permits shall be valid for one year from the date of Application.