

## **Schedule B**

### **Land Use Bylaw: Regulations October 26, 2022**

#### **7.XX Alternate Energy Systems, Individual**

##### **Purpose**

The purpose of this section is to establish standards for small scale Alternate Energy developments, including but not limited to solar, wind, biofuel, geo-thermal, fuel cell, micro-hydro, for use by households, agricultural operators, or individual business to meet some or all of their energy needs on the production site (dwelling, business, or operation), or a site immediately adjacent to the production site.

##### **General Requirements for All Individual Systems**

- 7.XX.1 No re-districting is required for a lot or site for an Alternate Energy System, Individual.
- 7.XX.2 A development permit is required for any Alternate Energy System, Individual, and such Systems shall be considered a Discretionary Use.
- 7.XX.3 All applicable Safety Codes permits are required.
- 7.XX.4 If the subject site is located within lands subject to Alberta Transportation's jurisdiction, an approved Roadside Development Permit from Alberta Transportation shall be required and included with the Development Permit application. (For the purposes of Section 683.1(1) of the Municipal Government Act, an application shall not be considered as received unless the Roadside Development Permit is included with the application.)

##### **Solar Energy Conversion Systems Applications**

- 7.XX.5 In addition to the requirements of Part 3 of this Bylaw, the application shall include:
  - a. Information of any impacts to the County road system such as, but not limited to
    - i. Identification of the roads to be used to construct and operate the development,
    - ii. number, type of vehicle movements, and load weights,
    - iii. expected time-period of movements: short-term, periodic, or ongoing,
    - iv. need for any upgrading of an existing road,
    - v. need for new approach or expansion of existing approach.

- b. For systems that are to be tied into the grid, evidence that the Utility Operator has been informed of the Applicant's intent to install an interconnected customer-Owner generator.
- c. Documentation demonstrating that the system is designed to produce energy primarily for the sole use and consumption on-site by the landowner, resident, occupant, or business;
- d. The manufacturer's specifications for the proposed system and rated output in kilowatts;
- e. A site plan showing the location, setbacks, and orientation of the solar collectors;
- f. For panels to be affixed to the wall of a building or accessory structure,
  - i. a description of how the panels are to be mounted or affixed,
  - ii. the maximum projection from the wall, and,
  - iii. the structural capacity of the building and / or wall to support the proposed development;
- g. For free-standing solar panels,
  - i. a description of the proposed ground mount design,
  - ii. the clearance to the bottom of the collectors, and,
  - iii. the maximum height from existing grade,
  - iv. the method of vegetation / weed control;

## **Glare**

- 7.XX.6 Solar panels must be located such that they do not create glare onto neighboring properties or public roadways.

## **Mounting and Projection**

- 7.XX.7 Solar collectors mounted to the roof of a building or structure shall not extend beyond the outermost edge of the roof.
- 7.XX.8 The maximum projection of any solar collectors affixed to a wall of a building or structure in a residential District shall be:
  - a. 1.5 m (5 ft.) from the surface of a wall that faces a rear lot line; and,
  - b. In all other cases 0.6 m (2 ft.) from the surface of any other wall.

## **Setbacks**

- 7.XX.9 Freestanding solar collectors shall be subject to the setback requirements of the applicable Land Use District or as required by Alberta Transportation, whichever is greater.

## **Height**

- 7.XX.10 The maximum height of a freestanding solar collector shall not exceed 2.4 m (8 ft.).
- 7.XX.11 For freestanding solar collectors, sufficient clearance shall be retained under the structure to allow for weed control, grass cutting, and for fire suppression.

## **Density**

- 7.XX.12 The location of and maximum number of solar collectors per Title may be regulated by the Development Authority.

## **Wind Energy Conversion Systems (WECS)**

- 7.XX.13 Development Permit applications for a wind energy conversion system shall be accompanied by the following information:
- a. Documentation demonstrating that the system is designed to produce energy primarily for the sole use and consumption on-site by the landowner, resident, occupant, or business;
  - b. The manufacturer's specifications indicating:
    - i. the proposed systems rated output in kilowatts,
    - ii. the safety features,
    - iii. the sound characteristics,
    - iv. the type of material used in the tower, blade, and / or rotor construction;
  - c. A site plan showing the location and setbacks of the WECS on the property;
  - d. Drawings, drawn to scale, of the wind turbine structure, including the tower, base, footings, and anchoring method. An engineering analysis of the Wind Turbine Tower showing compliance with the International Building Code and certified by a licensed professional mechanical, structural, or civil engineer shall also be submitted. Documentation of this analysis supplied by the manufacturer shall be accepted.
  - e. The potential for electromagnetic interference;
  - f. The nature and function of over speed controls which are provided;

- g. The specifications on the foundations and / or anchor design, including the location and anchoring of any guy wires;
- h. The location of any existing buildings or improvements on the property in relation to the WECS;
- i. Evidence of compliance with applicable air traffic safety regulations. (Transport Canada must be notified of the location – latitude and longitude – and height of all wind turbine installations through the aeronautical clearance application process.)

7.XX.14 Prior to deciding upon an application for a WECS, the Development Authority may refer for the review and comment, and consider any input received from the following entities:

- a. Alberta Utilities Commission,
- b. Alberta Transportation,
- c. Alberta Utilities Commission and the Alberta Energy Systems Operator for applications proposing to connect to the grid,
- d. Transport Canada,
- e. Navigation Canada, and
- f. Any other person, departments, agency, or commission the Development Authority deems necessary.

7.XX.15 Individual WECS shall comply with the following standards:

- a. There shall be a limit of one WECS per Titled area.

### **Setbacks**

- b. The WECS's tower shall be setback from all property lines a minimum distance equal to the height of the tower, or the minimum setbacks set out in the applicable Land Use District, or as required by Alberta Transportation, whichever is greater.
- c. If the tower utilizes guy wire anchors, the anchors, but not the tower, may be located no closer than 3.0 m (10 ft.) to the property lines.

### **Height**

- d. A WECS tower shall not exceed a maximum height of:
  - i. 12.1 m (40 ft.) on a parcel of less than 0.4 ha ( less than 1 acre),
  - ii. 19.8 m (65 ft.) on a parcel 0.4 – 2.0 ha (1 – 5 acres),
  - iii. 24.4 m (80 ft.) on a parcel greater than 2.0 ha (5 acres).

## **Finish and Markings**

- e. The tower and supporting structures shall be painted or coated in tones and / or colours matching the existing tones and / or colours of the principal building that are non-reflective and non-glossy.
- f. Brand names or advertising associated with the system or the system's installation shall not be visible from any public place.

## **Illumination**

- g. Small Wind Turbine Towers shall not be artificially lit except as required by NavCanada.

## **Speed Controls**

- h. The system shall be equipped with manual and automatic over speed controls.
- i. The conformance of rotor and over speed control design and fabrication to good engineering practices shall be certified by a licensed mechanical, structural or civil engineer.

## **Tower Access and Public Safety**

- j. If the tower is climbable, a security fence with a lockable gate, not less than 1.9 (6 ft.) in height, shall be installed around a WECS tower;
- k. No ladder or permanent tower access device shall be located less than 3.7 m (12 ft.) from grade;
- l. A locked device shall be installed on the tower to preclude access to the top of the tower;
- m. Additional access control features or such additional safety mechanisms or procedures may be required by the Development Authority;
- n. The use of tubular towers, with locked door access, will preclude the above requirements.

## **Elector-magnetic Interference**

- o. The system shall be operated such that any electro-magnetic interference is dealt with as per the permit issued by the AUC. If electro-magnetic interference is determined during operation, the developer will work with the affected stakeholder(s) to mitigate any issues.

## **Output**

- p. The system's maximum power output shall not exceed 5 kilowatts.

## **Noise Level**

- q. The noise generated by the system shall not exceed 60dB(A) or exceed more than 6dB(A) above background sound, as measured at the exterior of the closest inhabited Dwelling (at the time of installation or during operation), for wind speeds below 10 m per second (22 mph) and except short-term event such as utility outages and / or severe windstorms.

## **Discontinuance**

- r. Upon abandonment or termination of the system's use, the entire facility, including the system's tower, turbine, supporting structures and all equipment, shall be removed and the site shall be restored to its pre-WECS condition.

## **Applications for Other Individual Alternate Energy Systems**

7.XX.16 Development Permit applications for all other types of Alternate Energy production systems shall be accompanied by the following information:

- a. Documentation demonstrating that the system is designed to produce energy primarily for the sole use and consumption on-site by the landowner, resident, occupant, or business;
- b. An accurate site plan showing and labelling:
  - i. the location of the proposed system on the property,
  - ii. the location of the proposed system in relation to any other buildings or structures on the property,
  - iii. the location of the existing or proposed access,
  - iv. detailed information on the type of facility, structure, or system, and
  - v. the energy process involved;
- c. The manufacture's specifications, indicating (if applicable)
  - i. the rated output in megawatts or gigajoules,
  - ii. the safety features, and,
  - iii. the sound characteristics;
- d. Information on public safety regarding such aspects as fire hazards, chemicals used, storage of hazardous materials, exposure to corrosive or and hazardous fumes;

- e. Information or verification of:
  - i. the volume of water, if required,
  - ii. the source of the water, if required,
  - iii. the reclamation process of any water utilized by the system,
  - iv. the stormwater management system, if required, and,
  - v. the method of disposal of any waste material generated by the system;

## **Geothermal Systems**

- 7.ZZ.17 All geothermal systems shall be Closed Loop systems. Open Loop systems (pump & dump) are not allowed.
- 7.ZZ.18 Must comply with CSA-C448 and subsequent amendments. Exceptions may be allowed, at the discretion of the Development Authority, provided documented proof is provided showing that the exception meets or exceeds CSA-C448 standard.
- 7.ZZ.19 Installations must be stamped by a qualified Professional Engineer registered under the "Engineering, Geological, or Geophysical Professions Act" of Alberta or have the system and installer certified by the Canadian GeoExchange Coalition (CGC) or other future governing body having jurisdiction within the Province of Alberta.
- 7.ZZ.20 Heat-transfer fluids within a geothermal system shall be of the most environmentally friendly type available at the time of installation ~~such as propylene glycol~~. In no case may an ethylene glycol-based fluid be used nor shall any flammable or combustible agent such as methanol, ethanol, natural gas, or propane be used.

## **Conditions of Approval**

- 7.ZZ.21 Depending on the type of Alternate Energy – Individual system proposed, the Development Authority shall consider, as limited by Sections 619 and 620 of the Municipal Government Act, or not as the case may be, in addition to any other conditions authorized under other sections of this Bylaw or Statutory Plan, attaching conditions related to the following:
  - a. Entering into a development agreement with the County in accordance with the Municipal Government Act;
  - b. Preparing by qualified professionals and at the Applicant's expense, all the necessary studies, maps, diagrams, reports, and analysis, whether printed and / or digital, required in support to their application;
  - c. Confining all surface drainage on site and protecting any adjacent water bodies from run-off;

- d. Treating any wastewater on site and / or disposing of any wastewater as required by the County;
- e. Disposing of any non-wastewater liquids in accordance with the requirements of the County;
- f. The methods of disposing of any other waste material;
- g. Storing / containing all feedstock and materials within buildings or containment facilities;
- h. Restricting vehicle / truck traffic, whether owned or contracted by the Applicant, that transport construction material, raw material or feedstock or finished / processed goods associated with the development to designated haul routes and times;
- i. Require the entering of a road use agreement and the provision of security;
- j. Constructing or paying for the construction on any new road or approach required for the development and / or upgrading or paying for the upgrading of an existing road or existing approach required for the development;
- k. Dust control;
- l. Sound control;
- m. Installing underground all energy transmission (whether electrical, liquid or gas) lines from the site to the applicable collection point;
- n. Securing all necessary approvals from any other agency with jurisdiction on the type of AEI proposed and providing the County with a copy of the approval required;
- o. Identifying and providing for a staged or phased development;
- p. Placing restrictions on parts or elements of the proposed development, such as but not limited to locations, heights, colours, densities, setbacks, etc.;
- q. Constructing or paying for the construction of non-municipal infrastructure related to the project;
- r. Requiring ground cover, weed control, grading, soil erosion control emergency / fire suppression, and drainage measures;
- s. Specifying time periods to:



- i. start, suspend, and complete construction activities,
  - ii. trigger decommissioning activities;
- t. Providing for the amenity of the site or development through improvements such as landscaping, berming, and buffering; and,
- u. Any other condition or conditions necessary to give form and effect to the project.