

Land Use By-law

1. TITLE AND PURPOSE

TITLE

- 1.1. This By-law shall be known and may be cited as the Wind Energy By-law for the Municipality of the County of Pictou.

PURPOSE

- 1.2. The purpose of this By-law is to carry out the purpose and intent of the Municipal Planning Strategy in accordance with the provisions of the Nova Scotia Municipal Government Act (Chapter 18, Acts of 1998) as amended, by regulating the development of wind turbines. This By-law shall apply to the Municipality of the County of Pictou shown on Schedule "A", Zoning Map.
- 1.3. This By-law does not exempt any person from complying with other by-laws or regulations in force within the Municipality of the County of Pictou or from obtaining any license, permission, permit, authority or approval required there under. Where any provisions of this By-law conflicts with those of any other Municipal, Provincial or Federal regulation, by-law or code, the more stringent requirement shall prevail.

2. ADMINISTRATION

DEVELOPMENT OFFICER

- 2.1. This By-law shall be administered by the Development Officer appointed by the Council of the Municipality of the County of Pictou, and the Development Officer shall issue Development Permits under this By-law.

ACTING DEVELOPMENT OFFICER

- 2.2. In the absence or incapacity of the Development Officer, the Acting Development Officer appointed by Council shall act in the Development Officer's stead.

REQUIREMENT FOR DEVELOPMENT PERMIT

- 2.3. No person shall undertake, or cause or permit to be undertaken, any wind turbine development in the area to which this Land-Use By-law applies unless a Development Permit has been obtained in relation to such development from the Development Officer or Acting Development Officer, as appointed by Council.

NO PERMIT REQUIRED

- 2.4. A Development Permit is not required for any development except for wind turbine development.

REQUIREMENT FOR APPLICATION

- 2.5. Every person wishing to obtain a Development Permit must apply for such Development Permit to the Development Officer in the form prescribed from time to time by Council.

CONTENTS OF APPLICATION

- 2.6. Every application for a Development Permit shall be accompanied by a plan drawn to an appropriate scale and showing:
- 2.6.1. the true shape and dimension of the lot to be used or upon which the development is proposed.
 - 2.6.2. the proposed location, height and dimensions of any building or structure for which the permit is applied and the location information shall include measurements of the lot frontage and front, side and rear yards;
 - 2.6.3. the location of every building or structure already constructed, or partly constructed, on such lot and the location of every building or structure existing upon abutting lots;
 - 2.6.4. the location of any watercourse and location of any existing or proposed building or structure in relation to the watercourse; and
 - 2.6.5. other such information as may be necessary to determine whether or not the proposed development conforms with the requirements of this By-law.

SURVEY OF LANDS

- 2.7. Where the Development Officer is unable to determine whether the proposed development conforms to this By-law, the Development Officer may require that the plans submitted under Section 2.6 be based upon an actual survey by a Nova Scotia Land Surveyor.

SIGNATURES

- 2.8. The application for a Development Permit shall be signed by the owner of the lot, or by his or her authorized agent, and shall set forth in detail the current and proposed use of the lot and each building or structure, or part thereof, together with all information necessary to determine whether the proposed development conforms to the requirements of this By-law.

PUBLIC NOTICE AND CONSULTATION

- 2.9. As part of the application for a Wind Power Project, the applicant must demonstrate that it has made plans to conduct a community meeting in accordance with this clause, held in the community where the proposed Wind Power Project is to be installed, or in the nearest community that has facilities available for the meeting where the applicant will present to the community on the application it has submitted to the Municipality to install and operate a Wind Turbine, including showing the site plan included with its application and answering any questions concerning the Wind Turbine Project for which the Development Permit has been applied for. This community meeting shall be held at the convenience of the applicant; however, the applicant's application shall not be considered complete for the purposes of the By-law until such time as this community meeting is held.

NOTICE TO LANDOWNERS

2.10. The applicant shall provide written notice of a community meeting held pursuant to this clause to all land-owners who own land within two thousand 2000 metres of the boundaries of the proposed Wind Turbine Project by way of regular mail to the registered address of the land owner, no later than three (3) weeks prior to any scheduled community meeting. This written notice shall include the date and time and location of the community meeting. The applicant shall provide the Development Officer with a complete list of landowners to whom written notice was given pursuant to this clause within two (2) days of such written notices being given.

ADVERTISING PUBLIC MEETINGS

2.11. Notice of a community meeting held pursuant to this clause will be advertised in a newspaper circulating in the Municipality at least two (2) times, the first notice to be published at least fourteen (14) days before the date of the meeting and the second notice being at least seven (7) days before the date of the meeting.

2.12. At the time of publishing a first notice pursuant to clause 9.5(c) of this By-law, the applicant shall provide to the Development Officer a copy of the newspaper in which the first notice was published.

2.13. At the time of publishing a second notice pursuant to clause 9.5(c) of this Bylaw, the applicant shall provide to the Development Officer a copy of the newspaper in which the second notice was published.

ISSUANCE OF A DEVELOPMENT PERMIT

- 2.14. The Development Officer shall not issue a Development Permit unless:
- 2.14.1. the proposed development is in conformance with this By-law; or
 - 2.14.2. the Development Officer has granted a variance from the terms of this By-law, pursuant to the Municipal Government Act and the time for appeal has elapsed or the appeal has been disposed of and the development is otherwise consistent with the requirements of this Land Use By-law.

DEVIATIONS

- 2.15. No person shall deviate, or allow deviations to be made, from the description of the proposed development that is contained in the Development Permit, unless the developer has obtained a new Development Permit from the Development Officer.

RIGHT OF ENTRY

- 2.16. Pursuant to the Municipal Government Act, the Development Officer, at all reasonable times, may enter into or upon any property within the area to which this Land Use By-law applies for the purposes of any inspection necessary in connection with the administration of this By-law.

LAPSE OF PERMITS

- 2.17. Every Development Permit issued under this By-law shall automatically lapse, and become null and void, if the development to

which it relates has not commenced and three years has passed since its issuance.

- 2.18. A nonconforming use of land may not be (a) extended beyond the limits that the use legally occupies; changed to any other use except a use permitted in the zone; and (c) recommenced, if discontinued for a continuous period of six months.

REVOCACTION OF DEVELOPMENT PERMIT

- 2.19. The Development Officer may revoke a Development Permit where the development permit was issued based upon false or mistaken information.

DECISION IN WRITING

- 2.20. Any decision of the Development Officer to refuse the issuance of a Development Permit shall be given by written notice served by ordinary mail, whereas any decision to revoke a Development Permit shall be given by written notice served by registered mail, and such revocation shall become effective on the third business day after it was sent.

VIOLATIONS

- 2.21. In the event of any alleged contravention of the provisions of this By-law, the Municipality of the County of Pictou may take action as outlined in the Municipal Government Act, as amended from time to time. Right of Inspection

- 2.22. The Development Officer may, for the purpose of ensuring compliance with this By-law and the terms of a Development Permit issued pursuant to this By-law, enter in or upon any land or premises at any reasonable time upon reasonable notice.

2.22.1. If any individual or organization attempts to interfere or interferes with the Development Officer in the exercise of a power pursuant to this By-law, the Development Officer may apply to a judge of the Supreme Court of Nova Scotia for an order to allow the Development Officer to enter in or upon the premises for the purpose of ensuring compliance with this By-law and the terms of a Development Permit issued pursuant to this By-law and for an order restraining the individual or organization from further interference.

2.23. It shall be an offence to:

2.23.1. contravene any provision of this By-law;

2.23.2. contravene any condition in a of the development permit issued or renewed pursuant to this Bylaw; or

2.23.3. fail to comply with any representations contained within an application upon which a development permit was issued or renewed pursuant to this By-law.

PENALTIES

2.24. Any individual or organization who commits an offence pursuant to this By-law shall be punishable on summary conviction as follows:

2.24.1. for a first offence, by a fine of not less than \$1,000 and not more than \$5,000 and to imprisonment of not more than two (2) months in default of payment thereof;

2.24.2. for a second offence, by a fine of not less than \$2,000 and not more than \$10,000 and to imprisonment of not more than two (2) months in default of payment thereof; and

2.24.3. for a third and subsequent offence, by a fine of not less than \$5,000 and not more than \$20,000 and to imprisonment of not more than two (2) months in default of payment thereof.

ADDITIONAL PENALTIES

2.25. In addition to any penalty under clause 2.23 of this By-law, in the event of an offence under this By-law, the Development Officer may:

2.25.1. suspend a development permit for a period of up to three (3) months for a first conviction, and

2.25.2. revoke a development permit for a second conviction within any three (3) year period.

2.25.3. A suspension or revocation shall preclude any individual or organization from

2.25.3.1. in the event of a suspension, receiving a development permit or renewal of a development permit for the period of the suspension, and

2.25.3.2. in the event of a revocation, receiving a permit or renewal of a permit for five (5) years, in respect of the same Wind Power Project in relation to which the offence was committed.

EFFECTIVE DATE

2.26. Pursuant to the Municipal Government Act, this By-law shall take effect on the date a notice is published in a newspaper, circulating in the Municipality, informing the public that the Planning Strategy and its implementing Land Use By-law are in effect.

COST OF NOTICE FOR A VARIANCE

2.27. Pursuant to the Municipal Government Act, where a variance from the requirements of this By-law has been granted or refused, the Development Officer shall give notice to the persons required and in the manner prescribed by the Municipal Government Act, such notice to be served by ordinary mail, and the Municipality shall recover from the applicant the cost of giving such notice.

3. INTERPRETATION

ZONES

- 3.1. To this By-law, the whole of the Municipality of the County of Pictou shall be placed in the General Development Zone, the boundaries of which are shown on the attached Schedule "A". This zone is also referred to by the symbol "GD".

ZONING MAP

- 3.2. The attached Schedule "A" is titled "Zoning Map" and forms a part of this By-law.

INTERPRETATION OF CERTAIN WORDS

- 3.3. In this by-law, words used in the present tense include the future; words in the singular number include the plural; words in the plural include the singular number; the word "used" includes "arranged", "designed" or "intended to be used"; the word "shall" is mandatory and not permissive. All other words and phrases carry their customary meaning except for those defined in Part 5 of this By-law, entitled "Definitions".

STANDARDS OF MEASUREMENT

- 3.4. The Metric System of Measurement is used throughout this By-law and in all cases represents the required standard. Imperial measurements are approximate only, for convenience only, and are not to be regarded as precise.

VARIANCE FROM MINIMUM REQUIREMENTS

3.5. In accordance with the requirements of the Municipal Government Act, the Development Officer may not grant a variance for the size of yards (setback requirements) provided the

- variance violates the intent of this Land-Use By-law;
- difficulty experienced is general to properties in the area; or
- difficulty experienced results from an intentional disregard for the requirements of this Land-Use By-law.

4. GENERAL DEVELOPMENT (GD) ZONE

PERMITTED DEVELOPMENTS

4.1. All developments are permitted in the General Development (GD) Zone.

REQUIREMENTS

4.2. No requirements apply to any development except wind turbine development which is subject to the following:

UTILITY SCALE WIND TURBINES

4.2.1. Minimum setback from residences, except residences located on the same lot as the wind turbine, shall be 1000 metres.

4.2.2. There is no setback requirement from the residence located on the same lot.

4.2.3. Minimum setback from all property lines shall be two times the height of the turbine.

4.2.4. Minimum setback from the boundary of a public road shall be 300 metres (984.3 feet);

SMALL WIND TURBINES

4.2.5. Minimum setback from residences, except residences located on the same lot as the wind turbine, shall be 1000 metres.

4.2.6. There is no setback requirement from the residence on the same lot.

4.2.7. Minimum setback from all property lines shall be two times the height of the turbine. Maximum Height of the turbine shall be 60 metres.

MICRO WIND TURBINES

4.2.8. Minimum setback from residences, except residences located on the same lot as the wind turbine, shall be 60 metres.

4.2.9. There is no setback requirement from the residence on the same lot.

4.2.10. Minimum setback from all property lines shall be two times the height of the turbine.

EXPANSION OF WIND TURBINE DEVELOPMENT

4.3. Notwithstanding the setback requirement from a residence contained in Section 4.2, where a residence is constructed within the setback distance of utility scale wind turbine development erected after the effective date of this Strategy, the wind turbine development may

expand. The setback requirement for any expansion shall be the distance from the wind turbine development established after the effective date of this By-law to any residence constructed after the wind turbine development.

SETBACK ON LAND LEASED FOR WIND TURBINE DEVELOPMENT

- 4.4. The setback requirement from a property line contained in Section 4.2 is waived where wind turbine development occurs on land where the adjacent property is subject to a lease for that purpose for a term of 19 years or greater. The setback requirement shall apply to any property which is not leased for wind turbine development.

NOISE ASSESSMENT AND MONITORING

- 4.5 A post-construction sound monitoring field study will be undertaken by the owner of the wind turbine to ensure the allowable standard of 40 dBA is not being exceeded.
- 4.6 The sound monitoring field study must be prepared for the following developments and completed within the first year of operations:
- 4.6.1 When there are two (2) or more utility scale turbine located within 1000 metres of each other and if one or more Points of Reception or Participating Receptors are located within 2000 metres of a wind turbine generator.
- 4.6.2 When there are two (2) or more small wind turbines located within 1000 metres of each other and if one or more Points of Reception or Participating Receptors are located within 2000 metres of a wind turbine generator.

- 4.7 The report must be prepared by a qualified acoustical consultant and the cover document must be signed by the proponent for the project.
- 4.8 Utility and small wind turbines must not have an Ambient Degradation Noise Standard greater than 40 dBA as measured 15 metres from a dwelling.
- 4.9 The noise impact assessment must provide reference or justification for the acoustic emissions data used in the noise prediction at the receptors. For the purposes of this document, receptors mean Points of Reception and Participating Receptors.
- 4.10 As a minimum, the report must include the following:
- 4.10.1 The plan and location of the wind turbines must be described in detail for the purpose of supporting the noise impact assessment calculations and for demonstrating compliance with the sound level limits.
 - 4.10.2 General project layout description must be supported with clear maps of the site and surrounding area, complete with scale, northing, and legend information.
 - 4.10.3 A suitable minimum drawing scale for the overall plan of the project is 1cm : 500 m.
 - 4.10.4 Geographic location of the project study area;
 - 4.10.5 Locations of wind turbines; Location of Transformer Substation or Switching Station;
 - 4.10.6 Locations of all receptors including buildings, dwellings, campsites, places of worship, and institutions, up to 2000 m from any wind turbine location;

- 4.10.7 All receptors must be assigned a unique receptor identification and must be tabulated along with their precise coordinates in the report.
 - 4.10.8 Property boundaries of lands associated with the project and location of dwellings therein.
 - 4.10.9 Topographical features including roadways, terrain elevations, and ground cover; and
 - 4.10.10 A description of the wind turbine generators, including manufacturer's make and model, maximum electrical output rating, hub height above grade, range of rotational speeds, and mode of operation.
 - 4.10.11 A description of the Transformer Substation and the Aircraft Detection Lighting System (ASDL), including all available information at the time of submission on the manufacturer's make and model designations, maximum electrical output rating, primary and secondary voltages, method of cooling, physical dimensions, drawing showing elevation and plan views of the unit, and any noise abatement measures.
- 4.11 The acoustic emissions of the wind turbine must be specified by the manufacturer for the full range of rated operation and wind speeds.
- 4.12 As a minimum, the information must include the sound power levels, frequency spectra in octave bands (63 to 8000 Hz), and tonality at integer wind speeds from 6 to 15 m/s. The acoustic emission information must be determined and reported in accordance with the international standard CAN/CSA-C61400-11-07.
- 4.13 The wind speed profile on site of the wind turbines may influence the manufacturer's wind turbine acoustic emission data and, consequently, on the sound levels predicted at a Point of Reception.

Therefore, the wind turbine generator acoustic emission levels must be consistent with the wind speed profile of the project area.

- 4.14 To address this issue, the assessment must use manufacturer's acoustic emission data adjusted for the average summer nighttime wind speed profile, representative of the site. The adjusted acoustic emissions data must be used in the noise impact assessment at each receptor.
- 4.15 The combined noise impact must comply with the limits at all the wind speeds from 0 m/s to 15 m/s. It should be noted that the acoustic emissions from a Transformer Substation are independent and unrelated to the wind speed, unlike the acoustic emissions from wind turbine generators which are wind speed dependent.
- 4.16 The acoustic emissions of each transformer unit must be specified by the manufacturer and conform to the standard ANSI/IEEE C57.12.90, Reference [7].
 - 4.16.1 In cases where the specific information is not available in the early stages of planning the proposed Wind Farm, proponents must submit a maximum rated value of the noise emission in Oil Natural or Air Force (ONAF) cooling mode, typically the highest noise emission operating condition.
 - 4.16.2 The requirements do not apply to the small transformer units attached to each wind turbine.
- 4.17 The noise assessment must represent the maximum rated output of the wind turbines and reflect the principle of "predictable worst case" noise impact, Publications NPC-205 and NPC-232, References [2] and [4].

- 4.18 In general, Transformer Substation noise impact must be assessed in combination with the noise impact from the wind turbine generators. In the unique case where the noise impact is caused only by the Transformer Substation the detailed noise impact assessment is only required to consider the sound levels from the Transformer Substation.
- 4.19 If a Point of Reception or a Participating Receptor is or can be affected by adjacent approved Wind Turbines, the noise impact assessment must address the combined impact from all wind turbines located within 2000 metres of the Point of Reception.
- 4.20 A receptor is a Participating Receptor and not considered as a Point of Reception if the property of the receptor is located on the same parcel of land as the wind turbine.
- 4.21 Predictions of the total sound level at a Point of Reception or a Participating Receptor must be carried out according to the method described in the standard ISO 9613-2, Reference [6].
- 4.22 Should the manufacturer's data indicate that the wind turbine acoustic emissions are tonal, the acoustic emissions must be adjusted by 5 dB for tonality, in accordance with Publication NPC-104, Reference [1].
- 4.22.1 If a sound has a pronounced audible tonal quality such as a whine, screech, buzz, or hum then the observed value shall be increased by 5.
- 4.22.2 If a sound has an audible cyclic variation in sound level such as beating or other amplitude modulation then the observed value shall be increased by 5.

- 4.22.3 If a sound is Quasi-Steady Impulsive Sound then the observed value shall be increased by 10.
- 4.22.4 An adjustment may be made under one only of subsections (1), (2) and (3), providing that, if subsection (3) applies, it shall be used in preference to subsection (1) or subsection (2).
- 4.22.5 Otherwise, the prediction should assume that the wind turbine noise requires no adjustments for special quality of sound described in Publication NPC-104, Reference [1].
- 4.23 No special adjustments are necessary to address the variation in wind turbine sound level (swishing sound, amplitude modulation) due to the blade rotation. This temporal characteristic is not dissimilar to other sounds to which no adjustments are applied. It should be noted that the adjustments for special quality of sound described in Publication NPC-104, Reference [1], were not designed to apply to sounds exhibiting such temporal characteristic.
- 4.24 Since transformer acoustic emissions are tonal, an adjustment of 5 dB must be added to the specified acoustic emissions in accordance with Publication NPC-104, Reference [1].
- 4.24.1 If a sound has a pronounced audible tonal quality such as a whine, screech, buzz, or hum then the observed value shall be increased by 5.
- 4.24.2 If a sound has an audible cyclic variation in sound level such as beating or other amplitude modulation then the observed value shall be increased by 5.
- 4.24.3 If a sound is Quasi-Steady Impulsive Sound then the observed value shall be increased by 10.

- 4.24.4 An adjustment may be made under one only of subsections (1), (2) and (3), providing that, if subsection (3) applies, it shall be used in preference to subsection (1) or subsection (2).
- 4.25 The standard on which the noise impact prediction method is based, namely standard ISO 9613-2, Reference [6], is designed for source/receiver distances up to about 1000 m. Although the use of the standard may be extended to larger distances, other factors affecting sound level contributions from the distant sources may need to be considered. In practice, sound level contributions from sources such as wind turbines located at very large distances from receptors are affected by additional attenuation effects.
- 4.26 To address the above in a prediction method, contributions from sources located at very large distances from receptors, larger than approximately 5 km, do not need to be included in the calculation.
- 4.27 All calculations must be performed in terms of octave band sound levels (63 to 8000 Hz) and for each integer wind speed from 6 to 10 m/s.
- 4.27.1 A separate drawing must be presented for each of the following wind speeds: 6, 8, 10 and 15 m/s.
- 4.27.2 The sound level scale should be the same on all drawings. If practical, each drawing should show the sound level contours for the 40 dBA level as well as the contour for the applicable sound level limit.
- 4.27.3 The drawings should be included as an Appendix.
- 4.28 Compliance must be based on the comparison of the combined sound levels from all sources at each Point of Reception with the sound level limits.
- 4.29 All calculations and the determination of compliance with the sound level limits must be presented to a precision of one decimal place.

4.30 If the results of the monitoring program demonstrate that the Wind Power Project exceeds maximum,

4.30.1 the development permit holder will be directed to comply with the By-law through mitigation measures within a period that the Development Officer determines as reasonable.

4.30.2 When the Wind Power Project meets the allowable standard, the Municipality's compliance requirement is deemed to be complete.

NOISE COMPLAINTS

4.31 Any complaints concerning a potential violation of the Wind Turbine Development Bylaw shall be in writing to the Development Officer in a form approved by the Municipality.

4.31.1 The submission of Email or texts shall not constitute a written complaint.

4.32 Upon receiving a complete form, the Development Officer shall assess the circumstances and reasonableness of the complaint. In making such a determination, the Development Officer shall consider the following conditions during the investigation:

4.32.1 A change in the operation of the wind turbine which has caused an audible increase in sound transmission;

4.32.2 The frequency, duration, and time of day of increased noise transmission as well as weather conditions over this period;

4.32.3 Any information and / or data submitted by the complainant in regard to the purported increased sound transmission.

4.32.4 If the Development Officer is satisfied with evidence that suggests an increase in sound transmission from the wind turbine,

he/she shall require the proponent to undertake a sound monitoring study described above within a reasonable timeframe.

4.33 Upon a review of the sound monitoring study, the Development Officer shall:

4.33.1 Advise the Complainant that the results of the sound monitoring study comply with the Wind Turbine development By-law; or

4.33.2 Direct the development permit holder to comply with the By-law through mitigation measures within a period that the Development Officer determines as reasonable.

5. DEFINITIONS

For the purposes of this By-law all words shall carry their customary meaning except for those words and phrases defined in this Part.

- 5.1. **“A-Weighted Decibel” or “dB(A)”** means a measurement of Environmental Noise, whereby A-frequency weighting is used to compensate for the varying sensitivity of the human ear to sounds at different frequencies;
- 5.2. **“Ambient Degradation Noise Standard”** means the average noise level over a specified period of time, usually composed of sound from many sources, near and far;
- 5.3. **“Decibel” or “dB”** means a measurement of sound, namely the scale in which sound pressure level is expressed. When measuring Environmental Noise, a weighting network is used which filters the frequency of sound, and is expressed as “dB(A)”;
- 5.4. **Height of Wind Turbine** means the distance from ground level to the height of a rotor blade in a vertical position;
- 5.5. **Micro Scale Wind Turbine”** means a Wind Turbine which has a Nameplate Capacity of less than 10 kW
- 5.6. **Public Road** means:
 - 5.6.1. any road or highway owned and currently maintained by the Department of Transportation and Public Works excluding designated controlled access highways pursuant to Section 21 of the Public Highways Act, or

5.6.2. any road owned and currently maintained by the Municipality of the County of Pictou;

5.7. **Small Wind Turbine** means a wind turbine that has a Nameplate Capacity of not more than 50 kilowatts (kW).

5.8. **Utility Scale Wind Turbine** means a wind turbine that has a Nameplate Capacity greater than 50 Kilowatts (Kw);

5.9. **Residence** means a structure used for human habitation, whether for seasonal or permanent occupancy, and is assessed for residential taxation purposes on the Municipality of the County of Pictou's annual assessment roll.

5.10. **Watercourse** means the bed and shore of every river, stream, lake, creek, pond, spring, lagoon or other natural body of water, and the water therein, whether it contains water or not.

