Municipal Planning Strategy for the

COUNTY OF ANTIGONISH



Concerning the Regulation of Wind Turbine Development

June 2009

Municipal Planning Strategy

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1. INTRODUCTION

1.1 Background

With the political, economic and ecological pressure to lessen dependence on fossil fuels for energy supply, communities throughout Atlantic Canada are looking at alternative sources of energy. Wind energy is becoming an important and increasingly viable source of energy. In 2006, the Government of Nova Scotia announced that by 2013, 20% of the province's electricity will come from renewable sources, including wind, tidal and solar power. Wind energy is expected to become the most important of these, and in recent years, a number of wind turbine projects have been constructed throughout Nova Scotia, with several more under consideration currently. These facilities range from single turbine to "wind farms" consisting of many turbines. According to the Canadian Wind Energy Association, wind energy powered the equivalent of 563,000 Canadian homes as of 2007, a number that will certainly increase in coming years. Along with construction of the turbines, some concerns have emerged, especially regarding visual and sound impacts on nearby residences.

Since 2007, a number of companies have approached the Municipality of the County of Antigonish (Antigonish County) to explore development possibilities for wind energy. As turbines of different sizes have been built throughout the province, many municipalities have created land use policies to plan for the development of this infrastructure. The County has identified the need for a land use planning mechanism to regulate such development. This strategy and accompanying land use by-law is developed recognizing the benefits wind turbines bring to the community, while protecting the interests of local residents and respecting the surrounding environment. Council feels that residents are generally supportive of renewable energy development, so long as the character, health and safety of their communities is maintained.

There are two scales of wind turbine development. The larger ones are often called 'utility scale' wind turbines, as they are designed to supply power commercially for Nova Scotia Power Inc. (NSPI), can reach 115 metres (377 feet) in height and are typically developed by companies (often community based) which have agreements in place with NSPI for the sale of the electricity. Usually only one turbine is initially constructed as a test turbine. If tests confirm good wind generation capabilities for a site, more can constructed, leading to a development known as a wind farm, although many turbine developments are stand-alone operations where there is only one turbine at a location. It should be noted that even a small increase in wind velocity has a great impact on energy produced, so location and design are very important. The largest wind farm in Nova Scotia is currently at Pubnico Point in Yarmouth County, producing 30.6 megawatts of electricity (the output of one megawatt of wind power is enough electricity to power approximately 350 homes), and there are proposals for other large scale developments throughout the province. Wind turbines producing 2 megawatts or more are required by the Province to undertake an environmental assessment. Federal requirements may also apply.

Smaller scale turbines, or 'domestic' turbines are also being installed throughout the province. As the term implies, these turbines generate power primarily for private use, including homes, farms and businesses. Most of these turbines are installed "behind the meter" and can substantially reduce or entirely replace power consumption from the grid. In addition, some domestic wind turbines have been constructed in remote areas not serviced by NSPI. Nova Scotia Power's Net Metering program also allows domestic turbines, generating 100 kilowatts or less, to be interconnected with the main utility and only draw from the provincial power grid when needed. Surplus energy generated by the turbine gets delivered to the provincial grid and the customer can credit that energy against any future use. The size of the turbines refers to their nameplate capacity which equals the electricity produced when the wind velocity is such as that where the conversion efficiency is at its greatest. The smallest domestic turbines can be purchased at retail stores, generating anywhere from 50 to over 500 watts.

However, as many municipalities do not believe that all municipal concerns will be necessarily addressed by senior levels of government, municipalities are increasingly adopting by-laws to regulate not only the utility scale turbines, but the domestic as well. Antigonish County is supportive of wind energy and believes it is important that this source of energy be developed without jeopardizing the rights of their residents to fully enjoy their property and way of life. Council intends to provide for the future development of wind turbines and to regulate them in such a way that other uses, especially residential development, will not be adversely affected. Council is aware that there will be no perfect solution acceptable to all residents and the developers of wind energy, but will strive to arrive at a reasonable balance in their approach to control future wind turbine development.

1.2 Legislative Mandate

The *Municipal Government Act*, Chapter 18 of the Statutes of Nova Scotia, 1998, gives municipalities the authority to regulate land use and development within its borders. This authority is exercised through the adoption of a Municipal Planning Strategy and Land Use By-law.

The purpose of a Municipal Planning Strategy is to provide statements of policy to guide the development and management of all or part of a municipality. Council may address a broad range of land uses in the Strategy, or may choose to provide for the planning and management of only one use of land. In the preparation of the Municipal Planning Strategy, the Statements of Provincial Interest were reviewed to determine their applicability to this planning initiative. Statements of Provincial Interest form part of the Municipal Government Act, and the Act requires that planning documents must be consistent with them. Council has decided that this Municipal Planning Strategy and Land Use By-law will address only the development of wind turbines within the entire County of Antigonish. As such, these documents will not adversely affect the goals and objectives reflected in the Statements. Prior to the adoption of this Planning Strategy,

land use planning existed in most of the County and was regulated by four separate plan area strategies. Existing planning documents will not be affected, subject to the requirements of this Strategy.

This Strategy provides the policy statements with respect to the regulation of wind turbines, but the regulations themselves are contained in a separate document, the Land Use By-law. The documents are prepared and adopted concurrently and in accordance with Sections 204-5 of the *Municipal Government Act*, were they were subject to a public participation program within the County. After adoption, both documents may be amended, but any amendments must be consistent with the intent of the Municipal Planning Strategy. Development is regulated by the Land Use By-law through the issuance of a development permit by the municipal development officer. A development officer may not issue a development permit unless it meets all requirements of the Land Use By-law.

1.3 Municipal Profile

The Municipality of the County of Antigonish is a largely rural municipality located in the northeastern part of Nova Scotia, and covers 1,458 square kilometers. It is bounded by Pictou County to the west, the Canso Strait to the east, Guysborough County to the south, and the Northumberland Strait to the north, covering 1,458 square kilometres. Its population in 2006 was roughly 18,800. The highest concentration of population, and most new development in the County are located in the areas close to the Town of Antigonish and along the Trans-Canada Highway (Hwy 104). The Town of Antigonish is a separate entity and is governed independently of the County. The larger settlements in the County include Heatherton, Monestary, Pomquet, Arisaig and the Village of Havre Boucher.

Traditionally, the main industries in the County were fishing along the coast, and farming, especially in the central area. While those remain important to the local economy, far more residents are currently employed in the trades, retail, health and education sector. Notable employers are St. Martha's Regional Hospital, and St Francis Xavier University, both located in the Town of Antigonish. Tourism is also becoming an important industry, and the main draws include the beaches along the Northumberland Coast, the natural features of the highlands, and the historical, cultural and artistic amenities of the communities. Geographically, the County is dominated by lowlands along the coast, with a significant number of harbours and beaches. The South River and West River are the biggest rivers through the County. Southern sections of the County are less populated and are primarily highlands. Mapping done for the Province of Nova Scotia indicates that highland and especially coastal areas have the conditions most favourable to wind turbine development. It is these areas where Council expects most large scale wind turbine development to occur.

The County is governed by a Council of 10 members and provides a wide range of municipal services. Planning and development services for the County are the

responsibility of the Eastern District Planning Commission. Current land use planning has been established as needed in different sections of the County at various times. At the time of this Strategy, the Eastern, Central, Fringe (adjacent to Town) and Keppoch-Beaver Mountain municipal plans regulate development for the majority of the area and population of the County, and there are plans to extend planning regulations to the remaining portions of the western end of the County at some point in the future.

2. REGULATING WIND TURBINE DEVELOPMENT

2.1 General Resource Designation

This Municipal Planning Strategy and Land Use By-law will cover the entire Municipality of the County of Antigonish. While municipal planning documents often regulate many uses, Antigonish County Council has decided that this Strategy and By-law is only going to regulate wind turbines. In keeping with this objective, Council intends to establish a "General Resource" designation which applies to the entire planning area. This designation provides the framework by which wind turbine developments will be regulated within the County; both small turbines, ("domestic scale") defined as generating under 100 kilowatts and large turbines ("utility scale") defined as generating over 100 kilowatts. In the future, as Council sees fit, this Plan can be expanded to address other County-wide issues, either within the General Resource designation, or a new one.

Currently, there are four planning areas in place within the County of Antigonish: Eastern, Central, Fringe and Keppoch-Beaver Mountain. These were each introduced at different times, usually to address a specific planning need, and each have accompanying Municipal Planning Strategies and Zoning By-laws. These existing plans will continue to remain in effect, however will now be considered secondary planning strategies, addressing local concerns. Therefore the wind turbine regulations will be in effect for the entire County, and overlay all currently zoned and unzoned areas of the County. Where the detailed area plans address wind turbines, those documents provisions will supercede those outlined in this Strategy. All development aside from wind turbines will be permitted as of right, but subject to the requirements set aside in the specific plans.

Policy R-1

It shall be the policy of Council to establish the General Resource Designation. This designation will cover the entire County of Antigonish, to specifically address wind turbine development. All other development shall be allowed as of right, subject to the existing designations within the secondary plans.

Policy R-2

It shall be the policy of Council to define the Eastern, Central, Fringe and Keppoch-Beaver Mountain planning strategies as secondary plans within the County.

Policy R-3

It shall be the policy of Council to define within the Land Use By-law "domestic scale turbines" as those with a nameplate capacity of under 100 kilowatts and "utility scale turbines" as those with a nameplate capacity greater than 100 kilowatts.

2.2 Domestic Scale Turbines

Nova Scotia Power Inc. requires turbines producing more than 100 kw of electricity to be interconnected with a contract signed by an independent power producer and treated as a "large scale wind turbine." Turbines smaller than this can supply power "behind the meter" and for the purposes of this Strategy will be considered domestic scale turbines. These turbines are becoming increasingly popular and are used to power or help power homes, farms and small businesses. Residents whose turbines are connected to the grid can use grid energy storage, where domestically produced electricity displaces purchased electricity when available. This domestic wind energy generation can result in substantial energy cost savings for residents and businesses. Council recognizes their benefits and is supportive of their use. It is the intention of Council to establish within the General Resource Designation the General Resource (GR-1) Zone which will permit domestic-scale turbines through development permit, and establish the requirements which proponents will have to meet. Initially this zone shall cover the entire County. Any existing utility scale wind turbine development shall be allowed to continue as a legal non-conforming use, and as such governed by Section 238 of the Nova Scotia Municipal Government Act.

Council feels that domestic scale turbines should be set back from all property lines, in order to contain the turbine on the lot if it were to fall, and also protecting neighbouring properties, particularly in more densely populated areas from noise, visual impact or other environmental concerns. As Council feels that domestic scale turbines are not suitable for higher density residential areas, minimum lot sizes should also be imposed. On the other hand, Council also recognizes that some domestic turbines are large enough to provide electricity to more than one household, and that residents may want to share the power generated by a turbine. As property line setbacks are used to protect neighbouring residences from potential impacts of domestic-scale turbines, if neighbours wish to waive these setbacks in order to share the benefits of wind turbines, or for any other reason, Council feels it is reasonable that the setbacks be eliminated.

Domestic scale turbines come in a variety of sizes, some producing as little as 50 watts of electricity to charge a battery, though most produce in the range of 1-10 kw of electricity. These turbines can be installed as stand-alone structures, or quite often attached to the side wall or roof of a building. The Canadian Wind Energy Association defines the smallest turbines, those producing under 1 kilowatt (1000 watts) as "mini wind turbines." These turbines, which are available at some retail outlets in Canada have little impact on surrounding properties, and as such, Council believes they should be defined separately and that they do not need to be regulated as strictly. Council feels there is no need for a minimum lot size to be imposed for mini wind turbine construction and that the property line setbacks in place for other domestic scale turbines should suffice for these.

Policy R-4

It shall be the policy of Council to establish within the General Resource Designation the General Resource (GR-1) Zone in the Land Use By-law. This zone will be used to implement the General Resource Designation and shall initially cover the entire County. It shall be the policy of Council to permit within the General Resource Zone domestic scale wind turbines as of right and by way of development permit. All other uses, with the exception of utility scale wind turbines shall also be permitted as of right and not subject to development permit.

Policy R-5

Council shall establish a minimum lot size and setback requirement from all property lines for domestic scale wind turbines in the General Resource (GR-1). Notwithstanding that, where domestic scale wind turbine development is proposed on a lot where the immediately adjacent property is subject to a long term lease for that use, the setback requirement from a property line shall not apply.

Policy R-6

Council shall allow consenting landowners to waive setback requirements for domestic scale turbines.

Policy R-7

Council shall define in the Land Use By-law "mini wind turbines" as domestic scale turbines with a nameplate capacity of less than 1 kilowatt (1000 watts). It is the intention of Council that the minimum lot size requirements in the Land Use By-law be waived.

2.3 Utility Scale Wind Turbines

Utility scale wind turbines shall be defined as those producing more than 100 kw of electricity, and Council expects most utility scale wind turbines to be much bigger than that, often in the range of 750 kw to 2 MW, given that these are intended to sell their power to NSPI. Given the size of the structures, as well as the significant infrastructure and capital required for construction and servicing, such developments often occur as wind farms. Given their scale, Council feels that each utility scale turbine project should be subject to more stringent regulation, open to the feedback of residents who live near the proposed project and subject to the approval of Council. Therefore, it is the intention of Council to establish a Wind Resource (WR-1) Zone within the General Resource designation. This zone will permit utility scale wind turbines and set out requirements for any such development. No land will be pre-zoned to Wind Resource, but any proponent wishing to build a new utility scale turbine wind turbine project will need to rezone to Wind Resource and meet the zone requirements as specified in the Land Use By-law before receiving a development permit. In order to maintain control over the development, it is Council's intention to rezone only the land required for the placement of the individual turbine, although Council may consider rezoning a contiguous expanse of land in cases where a wind farm is being proposed. Before approving a rezoning request, Council will need to be satisfied that environmental concerns are met and that

where relevant, appropriate provincial and federal government agencies, including Nav Canada and Transport Canada approve the design of the project.

Given that small increases in wind velocity can have a great impact on energy produced, Council recognizes that the location and design of turbines are very important. Their development will be regulated through setbacks, which seek to address concerns of noise, visual impact, environmental protection and other off-site impacts. These setbacks shall be of sufficient distance to mitigate most adverse effects the turbines may have on residential uses. While there is some disagreement between industrial, residential and environmental interests as to appropriate setbacks, Council believes this approach will provide for wind turbine development in the future and also provide a degree of protection to homeowners to continue the use of their residential property. Additionally, in order to protect water bodies and prevent erosion, turbines should be adequately set back from watercourses. Council believes that a greater setback from coastlines should be implemented given concerns relating to increased coastal erosion and storm surges due to projected sea level rises. Likewise, due to concerns about blade throw or ice throw, turbines should also be adequately set back from public roads.

Council has therefore decided that utility scale wind turbine setbacks will be outlined in a hierarchical scale in which there are three distance thresholds. Within the closest distance threshold from the residential dwelling, no utility scale turbine will be permitted. Within the farthest threshold, utility scale turbines of any size will be permitted. In the second threshold, turbines will be permitted so long as they are not of the size that requires an environmental assessment. The Nova Scotia Department of Environment and Labour requires an environmental assessment for "an electric generating facility which has a production rating of 2 megawatts or more derived from wind energy." This will ensure that while utility scale wind turbines can be placed within an appropriate distance of residential dwellings, the largest are placed farther away.

In keeping with Council's original intent to regulate only wind turbine development, the setback requirements will not apply to future residential growth locating closely or relatively closely to existing turbines. Council's position is that homeowners who do so will be fully aware of the distance their residence will be to a turbine and will have accepted the adverse effect, if any; the turbine will have on them. The same is true of future purchasers of these residences. Existing wind turbine development that does not meet the setback requirements will be allowed to continue as non-conforming structures, but an expansion will not be permitted.

Policy R-8

Within the General Resource designation, it shall be the policy of Council to establish the "Wind Resource (WR-1) Zone" in the Land Use By-law. It shall be the policy of Council to permit within the Wind Resource Zone utility scale wind turbines and domestic scale wind turbines as of right by way of development permit. All other uses shall also be permitted as of right and not subject to development permit.

Policy R-9

In considering a proposal to rezone to the Wind Resource Zone, it shall be the policy of Council to have regard for the following:

- a) the adequacy of the area of land being rezoned in relation to the number of turbines being proposed;
- b) the potential for electromagnetic interference on radio, telecommunications or radar systems;
- c) the proposal meets the setback and other requirements in the Land Use By-law;
- d) the proposal meets the implementation criteria listed in Policy I-6.

Policy R-10

The Wind Resource (WR-1) Zone shall regulate the location of utility scale wind turbines by establishing a setback from residential uses. Council shall establish setback thresholds within the Land Use By-law from residential dwellings based on the size of the project and whether it requires an environmental assessment.

Policy R-11

To protect from erosion, Council shall establish a setback for utility scale turbines from all watercourses, with a greater setback specified for coastal areas.

Policy R-12

Council shall establish minimum setbacks from all public roads for utility scale turbines.

2.3.1 Expansion of Wind Development

There will not be a limit on the number of utility scale wind turbines in any one area. Wind farms will permitted within the County, provided that all of the turbines meet the setback requirements. There may be instances where a number of contiguous properties are leased for wind turbine development. Although the properties are leased, the property lines remain in place. If a property owner has leased his or her land for wind turbine development, the concern of a wind turbine falling onto the leased land should not apply. Therefore the setback requirement from a property line, where applicable, will be waived where the adjacent property is leased on a long term basis for wind turbine development.

As previously indicated, Council will not regulate any development within this document other than wind turbine development. Therefore the setback requirements will not apply to new residential development being located close to any utility scale wind turbine development. If such development does occur, Council is of the opinion that it should not prevent an expansion of the wind turbine development which has been established in

conformity with this Strategy. However, the expansion should not be located any closer to the residential development which has been built within the setback.

Policy R-13

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 provided the expansion is not located closer to the residence than the initial wind turbine development.

2.4 Documentation Requirements for All Turbines

The General Resource (GR-1) and Wind Resource (WR-1) Zones only address wind turbine development. Within this plan, wind turbines are grouped into two sizes: domestic and utility, and these each will have a specific set of requirements. All new wind turbines will be subject to certain site plan requirements assuring a basic level of safety and aesthetic standards, and property owners or developers shall be required to submit documentation to that effect. These standards will have to be met in order for a development permit to be issued. Council also recognizes that noise from turbines can have an impact on residences. The World Health Organization recommends 30dB as an acceptable noise standard in the interior of a house, which would roughly equate to 40dB outside the home.

Policy R-14

Council shall establish within the Land Use By-law site plan and documentation requirements to assure safety, environmental and aesthetic standards are met in order to receive a development permit.

Policy R-15

Council shall establish within the Land Use By-law noise standards for all turbines ensuring minimal disturbance to surrounding residents.

2.6 Removal of Turbine

When the time comes that a utility scale wind turbine is no longer in operation, the owner shall remove the turbine and all associated equipment from the site within a reasonable period of time. The owner shall also endeavor to restore the site to a reasonable natural condition. Council would like to be informed of the decision to remove the wind turbine as early as possible.

Policy R-16

Council shall establish within the Land Use By-law a time by which inactive wind turbines and all supporting structures must be removed

from the site, and the site be restored to a natural condition. Council shall be made aware of decisions to remove any wind turbines and determine a time by which developers must notify Council of such.

3. IMPLEMENTATION

3.1 General

The Municipal Planning Strategy for the County of Antigonish is the policy document providing the framework by which wind turbine development throughout the entire County is encouraged, controlled and coordinated. The policies of the Strategy will be implemented through a variety of means, but generally through the powers of Council as provided by the *Municipal Government act* and other statutes that may apply.

Policy I-1

It is the intention of Council that all sections of this document and Generalized Future Land Use Map shall constitute the Municipal Planning Strategy for the Municipality of the County of Antigonish.

Policy I-2

In addition to employing specific implementation measures, it shall be the policy of Council to maintain a program of ongoing planning through the Antigonish County Planning Advisory Committee and Antigonish County Council. Such a program shall include aspects of public information and participation, further study respecting such matters as the drafting or revision of Municipal By-laws which deal with wind energy or any other issues which Council may suggest.

Policy I-3

In order that development control decisions may be based on expert advice beyond that which the Planning Advisory Committee is able to supply, applications for amendment of the Land Use By-law shall be directed to the Eastern District Planning Commission and provincial and federal government agencies for their information and comment, as may be required.

3.2 Amending the Municipal Planning Strategy

Policy I-4

It shall be the policy of Council to require amendments to the policies and maps of the Municipal Planning Strategy under the following circumstances:

- (a) where any policy intent is to be changed;
- (b) where detailed areas or functional strategies are desired to be incorporated into this Strategy;
- (c) where the Strategy is in conflict with applicable provincial land use policies or regulations, in accordance with the *Municipal Government Act*.

Policy I-5

Strategy amendments shall require the approval of the Minister of Service Nova Scotia and Municipal Relations and shall be carried out in accordance with the provisions of the *Municipal Government Act*.

3.2 Amending the Land Use By-law

The Land Use By-law is the instrument by which all the policies in this Municipal Planning Strategy dealing with wind turbine development are implemented. The Land Use By-law establishes certain land use zones, identifies their location on a Zoning Map, and indicates the uses permitted and the development standards required. While all lands within the Plan Area are pre-zoned General Resource, Policy R-9 of this Municipal Planning Strategy requires developers who wish to construct utility scale wind turbines within the Plan Area to apply to Council to amend the Land Use By-law to rezone the subject property to Wind Resource. By requiring such a proposal staff, the Planning Advisory Committee, Council and the public will be able to examine the application more clearly. The applicant will also benefit from this, as it will be necessary to give full forethought to what they wish to do and to have proper plans prepared. Given the typical size of utility scale wind turbines, Council expects that all neighbouring land owners be notified of any applications to rezone property to Wind Resource.

Policy I-6

In considering amendments to the Land Use By-law, in addition to all other criteria as set out in various policies of this Strategy, it shall be the policy of Council to have consideration of the following:

- a) That the proposal is in conformance with the intents of this Strategy and with the requirements of all other Municipal By-law and regulations;
- b) That the proposal is not premature or inappropriate by reason of the following:
 - i) the financial capability of the Municipality to absorb any costs relating to the proposal;
 - ii) the intersection of any access road(s) with any public road and meeting the design and construction specifications of the authority having jurisdiction over public roads;
 - iii) the potential for the contamination of abutting watercourses or private wells or the creation of erosion or sedimentation as a result of the development as determined by a qualified person from the appropriate government department;
 - iv) the potential impact on protected wetlands or other sensitive habitat and on endangered species in the area of the proposed site;

Policy I-7

In considering amendments to the Land Use By-law, in light of the above policy, it shall be the intention of Council to require the following information to assist in the assessment of the proposal:

- a) A report from the Eastern District Planning Commission;
- b) A clear proposal including a detailed site plan drawn to an appropriate scale showing all proposed structures, lot lines and adjacent dwellings;
- c) Authorization documents, if applicable, from any government agency on which the proposed project may relate.

Policy I-8

In addition to the advertisement for public hearing requirements in the Municipal Government Act, it shall be the policy of Council to require the Municipality to notify all adjacent land owners of applications to amend the Land Use By-law.

3.3 Plan Review

Council recognizes that wind turbines are a relatively new technology, and that knowledge and experience in the field grow with practice. In accordance with the *Municipal Government Act*, this Strategy may be reviewed when either the Minister of Service Nova Scotia and Municipal Relations or Council deem it necessary.

Policy I-9

Council shall review this Municipal Planning Strategy and Land Use By-law within five years of its adoption. At that time, Council shall examine the number of wind turbines sited, the impact on the landscape and on tourism and any other issues that Council deems necessary.