ENVIRONMENTAL ASSESSMENT REGISTRATION
Fermeuse Wind Project, Newfoundland

Submitted by:
Vector Wind Energy Inc.

To:
Department of Environment and Conservation of Newfoundland

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helimax

Wind energy consultant for the world

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DEFINITIONS AND SYMBOLS

CWS	Canadian Wildlife Service
ha	hectare
km	kilometre
km/h	kilometres per hour
kV	kilovolt
m	metre
MW	megawatt
NLH	Newfoundland and Labrador Hydro
NP	Newfoundland Power
RFP	request for proposals
SARA	*Species at Risk Act*
V	volt
WTG	wind turbine generator

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1 BACKGROUND INFORMATION

The name of the undertaking is: The Fermeuse Wind Project ("Project").

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2 THE UNDERTAKING

This section describes the nature and rationale for Vector's Project.

2.1 Nature of the Undertaking

Vector proposes to develop, construct, own and operate a wind energy project on the east coast of the Avalon Peninsula, approximately 75 km south of St. John's, Newfoundland. The targeted area for the Project is located near the town of Fermeuse. More information about the location of the Project is provided in Section 3 of this document. The Project is expected to have an installed capacity of 24 MW and be completed for December 2008.

Prior to selecting the Fermeuse site, Vector conducted site assessments at several locations in Newfoundland. During the site visits, the development potential of each site was determined based on:

- Estimated wind regime from Environment Canada's Canadian wind atlas;
- Proximity to grid;
- Road access;
- Vegetation (land cover);
- Local terrain;
- Proximity to airports;
- Proximity to communities.

The Fermeuse site revealed a promising potential and was then selected for detailed wind monitoring.

On 14 January 2006, a fifty-metre meteorological tower (Figure 2-1) was installed at the site. The tower is equipped with anemometers and wind vanes mounted at the 30-m, 40-m, and 50-m levels. It is also fitted with a temperature sensor and data logger.

Figure 2-1: Wind Monitoring Tower at Fermeuse

2.2 Rationale for the Undertaking

2.2.1 Introduction to Wind Energy and Global Trends

Wind energy is the fastest growing source of power production worldwide with a compounded annual growth rate of approximately 30%. In Canada, the wind industry installed 239 MW of new wind energy capacity in 2005, a 54% growth rate from 2004, reaching a total of 751.4 MW as of March 2006 (CanWEA, 2006). A minimum of 500 MW of new capacity is anticipated for 2006 across the country. Forecasts for 2012 predict between 6000 and 10,000 MW of total installed capacity. Some of the reasons why such a large increase is expected during the next ten years are:

- Wind energy has become a proven technology in Canada;
- Federal and provincial governments are continuing to support wind energy;
- Public opposition to new power generation based on fossil fuels;
- Wind energy has an excellent public perception;
- Wind energy is immune to volatile fuel prices;
- Distributed generation decreases transmission costs;
- Quick installation time; and, furthermore,
- Wind energy is a safe, reliable, economical and environmentally sustainable energy source. It is the most economically competitive renewable energy currently available. Unlike conventional sources of power, wind energy does not generate any emissions since no fuels are combusted.

2.2.2 Newfoundland Wind Energy Opportunities

As the province's power load continues to increase, new sources of power generation are necessary. In order to meet greenhouse gas reduction targets, namely under the Kyoto Protocol, and the public's expectations of low impact power generation, the province will have to consider power generation with minimal environmental impacts. As there is a diminishing number of potential hydro sites, wind energy is the next most viable alternative.

Newfoundland has an excellent wind potential and some of the highest wind speeds in Canada. The other Maritime Provinces are already involved in developing projects and implementing Renewable Portfolio Standards. For example, PEI now draws more than 5% of its electricity from wind energy (Government of Prince Edward Island, 2005).

While Newfoundland does not yet have an installed utility-scale wind farm, a few wind farm projects have been registered with the Environmental Assessment Division in recent years, namely the 25.5- to 42-MW Argentia Wind Farm Project (Wind Project Inc.), the 10-MW St. John's (Goulds) Wind Farm Project (Anemos Energy), the 40-MW Arches and Flat Hills Wind Power Project (Kruger Inc.), the 20-MW Burnt Ridge, Elliston Wind Power Project (Wind Project Inc.) and the 5- to 25-MW St. Lawrence Wind Demonstration Project (NEWind Group.).

3 DESCRIPTION OF THE UNDERTAKING

3.1 Geographical Location

The general location of the Project as proposed by Vector is shown in Figure 3-1. The Project will be located west of the town of Fermeuse. Based on the preliminary layout, the targeted siting area measures approximately 550 ha. It should be noted, however, that the project footprint will only be a fraction of this area.

The site seeks to exploit the strong winds blowing from the west and the southwest. The proposed area for the Project is shown in Figure 3-2.

The site is located near Route 10 and adjacent to the Newfoundland Power (NP) 69-kV power line terminal station.

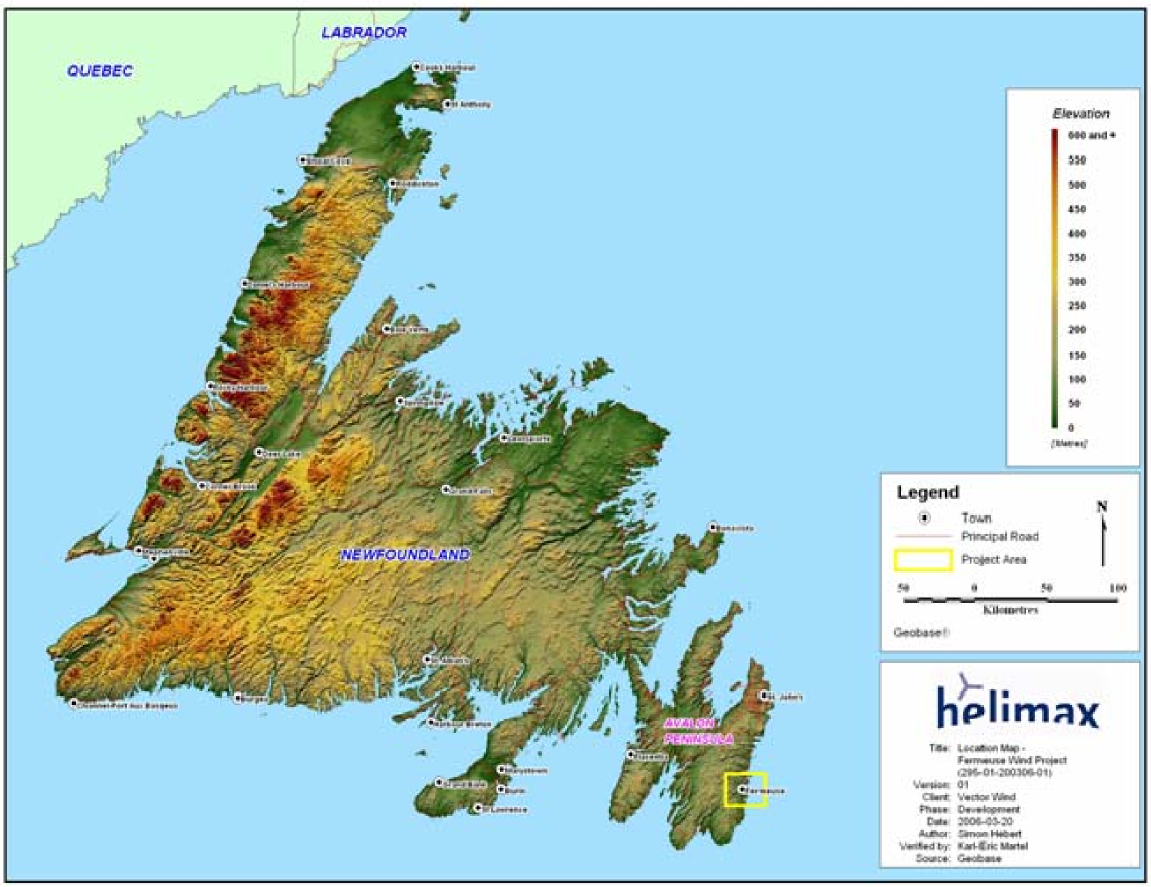


Figure 3-1: Location of the Proposed Undertaking

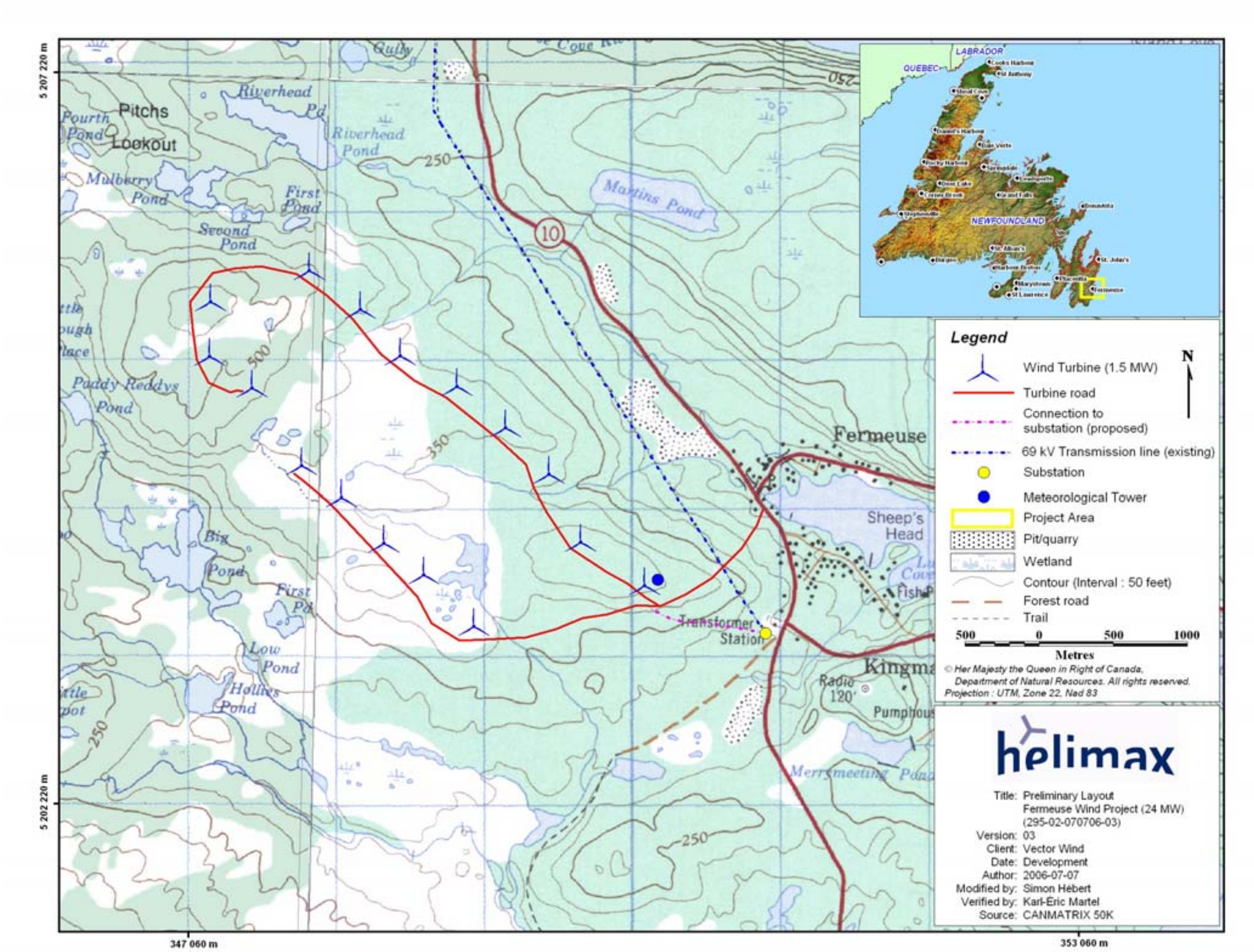


Figure 3-2: Preliminary Project Layout – 16-Turbine Alternative

3.2 Physical Features

3.2.1 Wind Farm Components

The three major components of a wind farm are:

- Wind turbines generators (WTG);
- Roads;
- Electrical collecting system and substation.

3.2.1.1 Wind Turbine Generators (WTG)

Wind turbines convert the energy contained in the wind into electricity. Utility-grade horizontal axis wind turbines, such as the ones that will be used by the Proponent, produce electricity to be delivered to the electrical grid. The major components of modern utility-scale wind turbines are:

- Rotor, including the hub and three blades;
- Nacelle, which houses the control system, generator and drive train;
- Tower and foundation.

Turbine components are illustrated in Figure 3-3 and Figure 3-4.

The Proponent proposes two alternatives for its Project: 1) installation of sixteen 1.5-MW turbines, or 2) installation of twenty 1.2-MW turbines, for a total project capacity of 24 MW. Permanent magnet direct drive turbines, such as the Vensys models, are considered at this stage. Direct drive turbines have evolved as a superior technology in response to the practical challenges associated with gearboxes in wind turbines. Conventional wind turbines have been prone to gearbox failure and electrical output quality problems. However, the particular manufacturer of the wind turbines for the Project has not yet been designated.

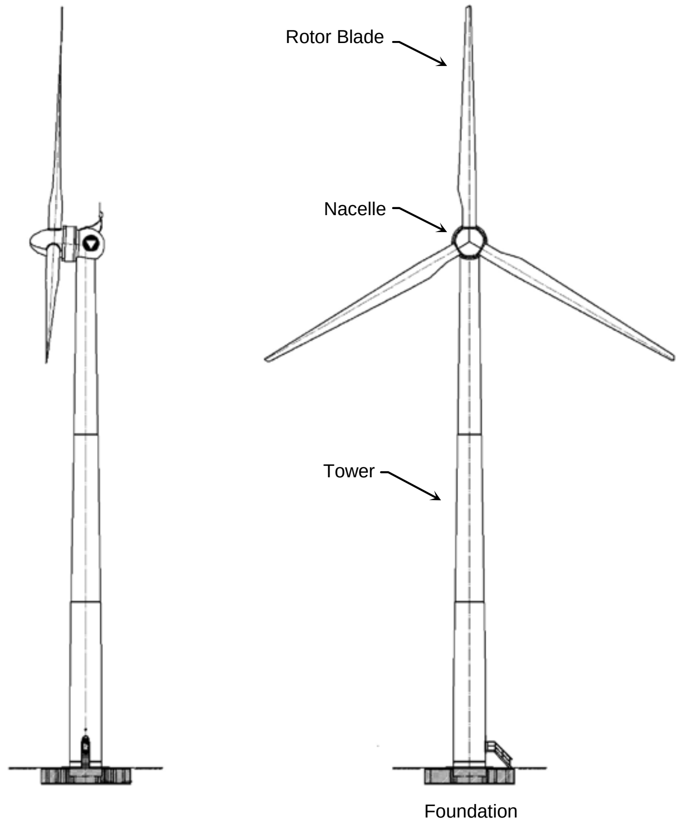


Figure 3-3: Wind Turbine Components

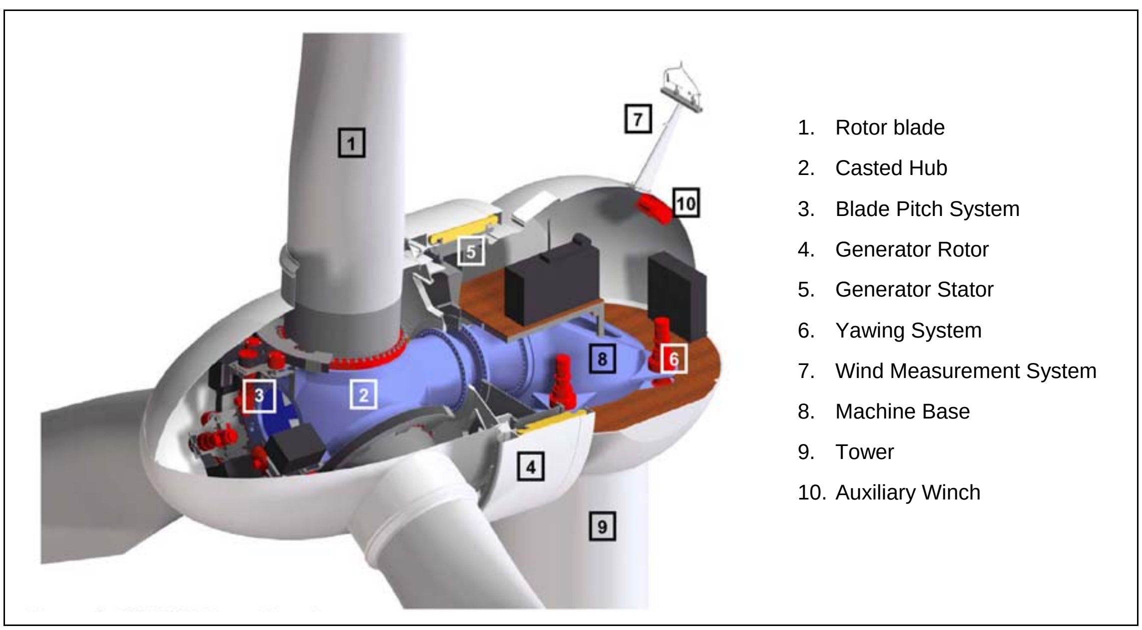


Figure 3-4: Nacelle Components (Example from a Vensys Turbine)

The tower of the wind turbines considered is made of steel and is composed of 3 or 4 sections, totalling between 69 and 85 m in height.

The rotor comprises the hub, the nose cone, and three blades. The rotor diameter can vary between 62 and 77 meters, with a swept area between 3019 and 4657 m^2, depending on the turbine model selected. The blades are equipped with a variable pitch system that adjusts the blade's angle to optimize energy output. To protect against lightning, each blade is equipped with a copper wire running from its tip to the hub and nacelle and then down the tower to a ground grid in the tower's foundation.

The WTG's nacelle includes all of the electrical and mechanical components enabling the production of electricity. The main components of the nacelle are shown in Figure 3-4. The nacelle is insulated to minimize noise emissions, although direct drive turbines are much quieter than gearbox machines as they do not produce mechanical or tonal noise, due to the absence of gearbox or drive train, and consequently no high-speed mechanical (or electrical) components. The nacelle is topped by a lightning rod, connected to a ground grid in the tower's foundation. A yawing mechanism allows the turbine to face the wind at any given time during operations.

Each turbine will be equipped with a step-up transformer at its base that will elevate the voltage from 500-690 V (turbine output) to the wind farm collecting network voltage.

A crane pad of approximately 15 m × 30 m will need to be maintained adjacent to all turbines to support a crane for installation, maintenance (if necessary) and disassembly of the WTG. The crane pad will be an extension of the access roads and will be constructed of the same material. Each turbine will also require a cleared area for assembling and installing the rotor and other turbine components. The temporary footprint for turbine installation is typically one ha.

The type of foundation will be determined based on subsurface conditions evaluated during a geotechnical assessment. Two types of concrete- and steel-reinforced foundations might be considered: a shallow spread foundation of approximately 15-m diameter and 1.5 m deep; or a deeper and narrower cylindrical foundation. The tower, nacelle and rotor will be attached and installed with large cranes on site. Beside each tower base, the transformer will occupy a footprint of approximately 9 m^2.

3.2.1.2 Roads

Service roads will be built from the Route 10 to each wind turbine. The total length and width of these gravel roads will be kept to a minimum so as to reduce the environmental impact. The roads will be built to support the weight of the equipment and machinery required to build the wind farm. Once construction is finished, only access roads for lightweight vehicles will be necessary during the lifetime of the Project. These roads will be used for operation and maintenance of the wind turbines. It is expected that approximately 8.5 km of new roads will be built.

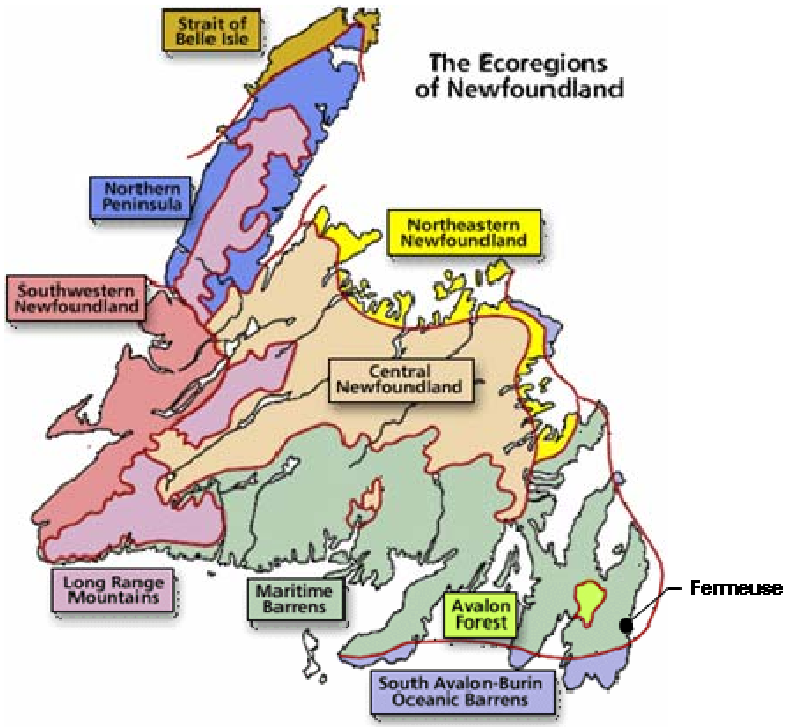
Whenever possible, existing roads are used instead of building new ones. To reduce the environmental impact from construction and deforestation on the ecosystem, the new access roads will be optimized with respect to surface area and environmental protection.

3.2.1.3 Electrical Collecting System and Substation

The wind farm's electrical collecting system (approximately 30 kV) will direct the electricity from each turbine transformer to the existing NP substation. The engineering details of electrical connection to this substation will be evaluated at a later time. The substation will elevate the voltage to 69 kV – the voltage of the Newfoundland Power (NP) utility line – to allow the wind farm to be interconnected to the NP transmission grid. To minimize impact on the targeted site, the wind farm's electrical system will follow as much as technically possible the access roads and will used standard wooden utility poles and single cable lines.

3.2.2 Physical and Biological Environments

The Fermeuse Project is located in the southeastern part of the Maritime Barrens Ecoregion, as shown on Figure 3-5. This area is characterized by exposed bedrock and extensive barrens. Slope bogs, basin bogs and fens are scattered throughout the barrens, reflecting the poor drainage and wet climate of this ecoregion. The landscape was modeled by the last glaciations and as such is characterized by glacial lakes and ponds, erratics and a gently rolling ground moraine covering most of the area (Newfoundland and Labrador Environment and Conservation).



(Source: Newfoundland and Labrador Heritage Web Site Project)

Figure 3-5: Geophysical Regions of Newfoundland

3.2.2.1 Vegetation and Landscape

The topography at the Fermeuse site is characterized by a slope rising from Fermeuse Bay, at sea level, to an elevation of about 165 m above sea level approximately 4 km inland at the north end of the site. Barrens are characteristic of the subregion and the landscape is dominated by heathlands. Forests are found only in small patches which escaped periodic fires (Newfoundland and Labrador Forest Resources). Thickets 30-50 cm in height are common, mostly consisting of sheep laurel heath. The Clintonia-Balsam Fir type is the dominant tree species where the forest is still present. In the subregion, black and pink crowberry and partridgeberry are common on inland hills and coastal headlands (Newfoundland and Labrador Environment and Conservation). At the site location, the land is covered with 0.5-m to 1-m high bushes and scattered trees. To the west, the plateau gains about 20 m in altitude. Photos of the site, dated from December 2005, are shown in Figure 3-6 through Figure 3-8.

Figure 3-6: Views Looking North

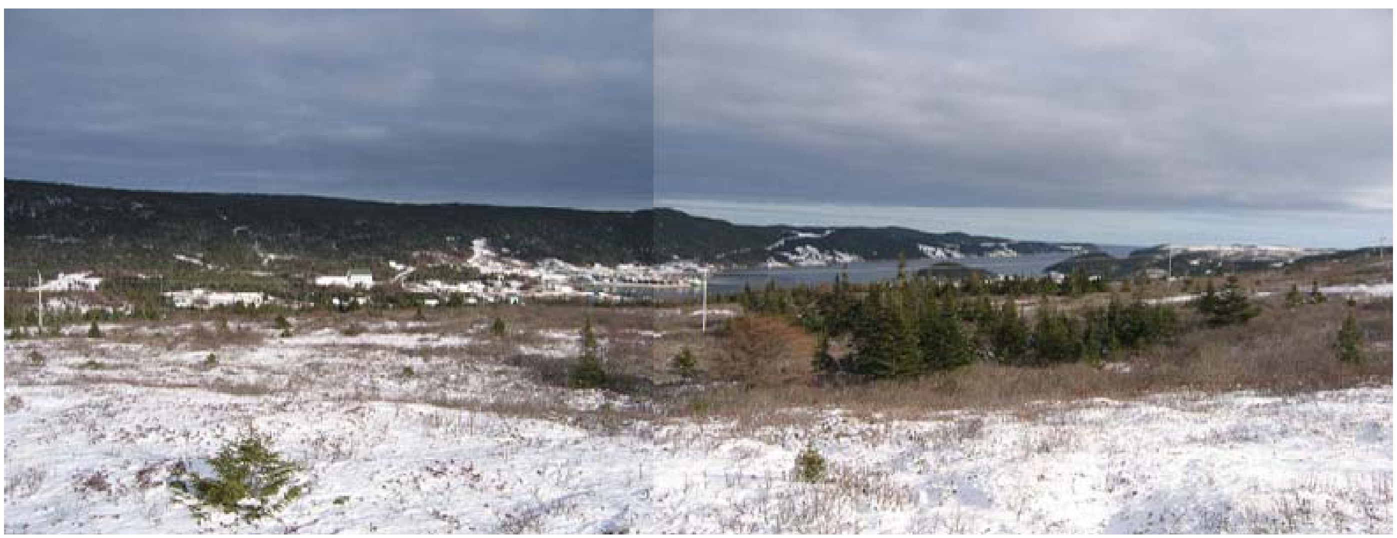


Figure 3-7: View of the Town of Fermeuse from Hillside

Figure 3-8: View from bottom of Hill looking Southwest

3.2.2.2 *Soils and Geology*

Soils found in the lower part in the site area, below the exposed bedrock zone, are mostly brown inorganic "humo ferric podzols". In general, the Avalon Peninsula is dominated by Late Proterozoic clastic sedimentary, metasedimentary, and bimodal volcanic rocks (McCartney, 1967; King, 1988; Colman-Sadd et al., 1990, cited in Catto, 1998). Mafic and granitic intrusive igneous rocks of Late Proterozoic to earliest Cambrian age can be found on the Peninsula, with limited distribution. Granitic intrusions, which locally include mafic units, outcrop throughout the Holyrood - Witless Bay Barrens area; west of Cape Broyle, Renews, and Fermeuse; and south of Harbour Main (Catto, 1998).

3.2.2.3 *Climate*

The Avalon Peninsula east coast has relatively mild winters with considerable variation in snow cover. Summers are relatively cool with low clouds and fogs. As shown on Figure 3-9, data obtained from *St. John's A* climatological station – which lies at a similar elevation as the Project site – show average daily temperatures varying from -2°C to -5°C, between December and March, and from 10°C to 16°C, between June and September. Heavy rainfalls are common from October through December. Average annual precipitation is 1514 mm. Prevailing winds are from the southwest, with an average annual wind speed of 23.3 km/h (Environment Canada, 2006).

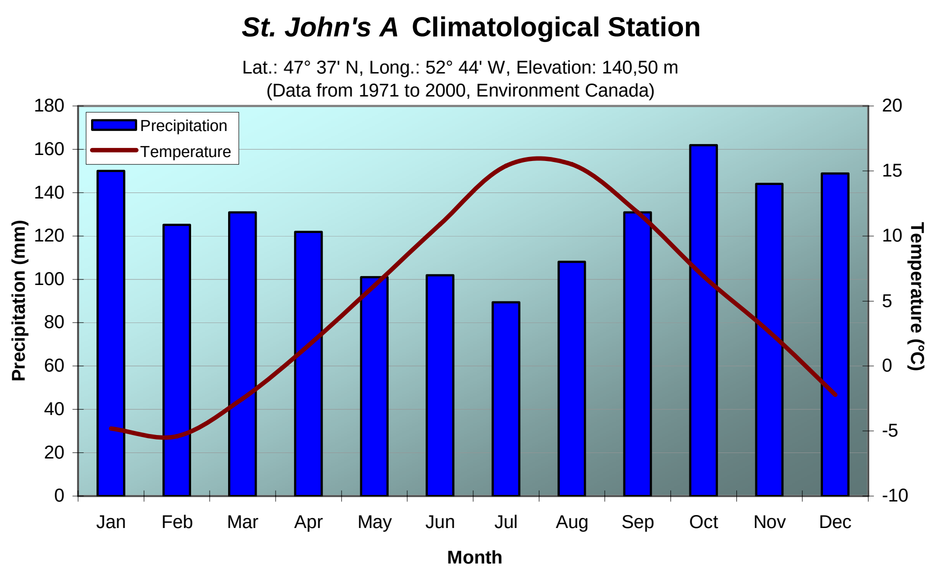


Figure 3-9: Average Monthly Precipitation and Temperature near Project Region

3.2.2.4 *Resource and Land Use*

The proposed project is located entirely on Crown land, within the boundaries of the Community of Fermeuse. Residences would be located at 800 meters from the nearest WTG. There is an ATV trail used by the Fermeuse Trail Association and two cabin claims in the area (see Figure 3-2), one of which is no longer valid. The project area is used for hunting (moose, caribou) and for berry picking.

3.2.2.5 *Fish*

As the wind farm would be built inland, the only fish that may be affected are those native to the ponds and streams in and around the Project area. Fish may be affected if their natural environment is altered during the construction process. Precaution will be taken to minimize any such adverse effects, namely through common and site-specific mitigation measures.

3.2.2.6 Mammals

While wind farms have not been found to affect mammals living in the environment, it is still important to assess their presence and abundance, and evaluate any loss of habitat. Table 3-1 lists the mammals that are common or abundant in the Avalon Peninsula. As the Avalon Wilderness Reserve is located nearby, the mammals found in the park are likely to be found at the proposed wind farm site.

Table 3-1: Land Mammals of Avalon Peninsula and Avalon Wilderness Reserve

(Dept. of Environment and Conservation, Parks and Natural Areas Division)

Common Name	Scientific Name
Woodland caribou (Avalon herd)	*Rangifer tarandus*
Moose	*Alces alces*
Mink	*Mustela vison*
Snowshoe hare	*Lepus americanus*
Red fox	*Vulpes vulpes*
Red squirrel	*Tamiasciurus hudsonicus*
Little brown bat	*Myotis lucifugus*
Meadow vole	*Microtus pennsyvanicus*
Masked shrew	*Sorex cinereus*
Eastern chipmunk	*Tamias striatus*

None of these mammals are considered endangered, threatened and concerned species as defined by Environment Canada or the Province of Newfoundland The woodland caribou is considered threatened for the boreal forest region of Canada, except for insular Newfoundland where it is considered to be not at risk (Newfoundland Department of Environment and Conservation).

3.2.2.7 Birds

One of the main environmental concerns to be evaluated prior to and during the implementation of a wind energy project is the possible impact on bird populations. These impacts vary from loss or disruption of habitat to actual mortality due to collisions with the towers and blades. Although studies have shown that avian collisions with wind turbines are not as significant as with other structures, such as transmission lines and windowed buildings (National Wind Coordinating Committee, 2001), it is important to assess bird presence and abundance.

The birds common to the scattered forested areas of the south-eastern subregion of the Maritime Barrens ecoregion, according to the Dept. of Environment and Conservation, include ruby-crowned kinglet, northern waterthrush, white-throated sparrow, hermit thrush, fox sparrow, and yellow-rumped warbler as migratory breeders (birds that breed locally but migrate south for winter). Dark-eyed junco and pine grosbeak are both year-round residents in this same habitat. In the barrens, residents include willow ptarmigan (or "partridge"), while the savannah sparrow, American pipit, and horned lark occur as migratory breeders. Swamp sparrow and shorebirds such as Wilson's snipe, greater yellowlegs, and least sandpiper are migratory breeders in wetland habitats.

According to Environment Canada, the only listed bird species that could potentially be found in the Project area is the Red Crossbill *percna* subspecies, considered as endangered and protected under the federal *Species at Risk Act* (SARA) and listed as endangered by the Province of Newfoundland. It should be noted that the species is reported most frequently and in the highest numbers in older mature forests of Western Newfoundland, and that the last recorded nest sightings occurred in 1977 (Newfoundland Department of Environment and Conservation).

3.3 Construction

3.3.1 Activities

The construction of a wind farm involves installing the three components described in the previous section: wind turbines, roads, and substation and electrical network. The construction is expected to occur from spring to fall in order to avoid the harsh winter construction period and possibly in two stages, in 2007 and in 2008.

Before construction begins, the site will be prepared for the installation of the turbines. Deforestation and excavation will occur only when absolutely necessary for construction and will be kept to as small an area as possible. The site will be prepared for construction in order to accommodate 16 or 20 turbines, 16 or 20 transformers, a storage area for maintenance equipment and spare parts, and the necessary road access to each of the turbines.

The activities related to construction include:

- Tree cutting, grubbing and clearing;
- Top soil stripping;
- Construction of an access road and crane pads;
- Pouring of concrete foundations;
- Installation of turbines;
- Installation of electrical network;
- Transportation;
- Site reclamation.

3.3.2 Sources of Pollutants

The main hazardous substance that will be hauled on site during construction is diesel fuel. Fuel will be hauled to the project sites to supply heavy machinery, namely the cranes. Hauling of fuel and its presence on site create the possibility of spills on access roads and at turbine sites, potentially affecting vegetation and watercourses. The risk of such spills will be minimized by ensuring that all fuel trucks are inspected and compliant to industry standards. Cranes will be fuelled from fuel trucks at the crane pads. Refuelling will follow accepted industry practices. All refuelling will occur at the crane pad or at designated refuelling sites, away from potential sensitive receptors. Emergency response spill kits will be maintained on site to contain any spill of hazardous fluids.

3.3.3 Potential Effects on the Environment

Throughout the period of site preparation and construction, particular attention will be paid to the environment to limit any significant and/or long-term alterations to the site with respect to soil and vegetation.

Most of the potential effects on the environment related to construction activities such as increased traffic, noise and dust emissions will be of limited duration. Nonetheless, mitigation measures to avoid or minimize the potential impacts of construction will be carefully defined beforehand and applied whenever required. All of the work performed, along with the materials and methodology, will conform to provincial regulations.

3.4 Operations

3.4.1 Activities

The main potential effects of the operations phase on the surrounding environment are presented in the following sub-sections. Activities related to operations include:

- Operation of turbines;
- Maintenance;
- Occasional transportation and traffic;
- Brush clearing.

3.4.2 Sources of Pollutants

The main potential pollutants are hydraulic oil, coolants and transformer oil. In all cases, retention gutters, as part of the nacelle or the concrete transformer pad, will serve to contain any leak or spill should one occur. Any hazardous substance disposal will be conducted in conformity with local regulations.

3.4.3 Potential Effects on the Environment

This section presents a list of the most common issues raised in the context of wind farms.

3.4.3.1 General Safety

As soon as the project is commissioned, all necessary precautions will be taken to ensure the safety of people that may visit the site. The electrical connections will be made following industry standards. All transmission line and electrical equipment will be accessible only to authorized personnel responsible for the operation and maintenance of the site. Strict procedures will be implemented to ensure that the people responsible are properly trained and that procedures are followed.

Procedures recommended by the manufacturer will be implemented to secure the wind farm and its operation. The wind turbines will feature redundant emergency brakes in case there is a problem during operation. A procedure will be implemented in order to stop the turbines even when there is no available electricity from the electrical grid. Furthermore, personnel required to perform work in the nacelle will at all times follow strict procedures defined by the manufacturer.

The accumulation of ice on turbine blades is a common concern in the industry as it can increase downtime and produce ice masses that could fall from the blades, potentially creating a safety risk. In the event of icing, the most likely response is that the control system will detect an unbalance of the rotor and stop the affected turbine. In this case, ice falls would be limited to the turbine site. Nevertheless, ice throws are known to occur, which is why the wind industry normally recommends a 200-m distance of turbines from frequented areas (e.g. walking trails) or inhabited areas. Given that the Project is not in a populated area, incidents are considered highly unlikely; however, this issue will be addressed specifically before construction.

3.4.3.2 Aerial Security

Lighting for the turbines will be realized in accordance with Transport Canada guidelines.

3.4.3.3 Visual Impact

The Project will have a visual impact because wind turbines are large structures. The effect of the impact is subjective and as such varies from one person to another. As much as possible, the wind farm will be configured by taking advantage of topography and other site features to minimize the visual impact.

3.4.3.4 Noise Impact

Conventional wind turbines produce noise because of the aerodynamic effect of the wind moving over the blades, the speed of the moving blades, and the electrical generator when it spins at high speeds. However, well designed, modern wind turbine generators are relatively quiet in operation. It is quite possible to carry out a normal conversation at the base of a turbine running at maximum power, without raising one's voice. Typically, an operating wind farm at a distance of 350 to 500m is not noisier than a moderately quiet room. Even in rural or low-density areas, where there is little additional sound to mask that of the wind turbines, the sound of the blowing wind is often louder.

The best method for dealing with a potential noise issue is to use a "setback", or minimum distance between the turbines and the nearest residence, that is sufficient to reduce the sound level to an acceptable level. In Fermeuse, the closest residences being located at more than 800 meters, potential noise issues are not expected.

3.4.3.5 Avifauna

Wind power projects have the potential to adversely affect avifauna mainly due to collisions with Project infrastructure, disturbance, and habitat loss. In order to clearly identify the issues related to birds in the Project area, migratory and breeding bird surveys will be conducted prior to construction. The scope of work for the bird baseline studies will be determined following discussions with a local representative of the Canadian Wildlife Service (CWS) and in accordance with the most recent version of *Wind Turbines and Birds: A Guidance Document for Environmental Assessment* (CWS, 2006).

To minimize attracting birds to operating wind turbines, minimum lighting will be used, as well as short-flash duration lighting, with the minimum number of flashes per minute and the briefest flash duration allowable. Lighting will however be needed to abide by all Transport Canada safety regulations. Unnecessary lighting will be avoided.

3.4.3.6 Land Use

Access to the site for hunters and for berry pickers will be limited during the construction period, but the entire site will be reopen once the wind farm is operational. However, subject to safe gun handling practice and provincial firearms or hunting regulations, shooting will be restricted in the vicinity of the wind turbines. A meeting with municipal representatives is scheduled in the first week of July to identify potential land use issues.

3.5 Occupations

The construction period will require between 10 to 20 people to build access roads, install pole lines and electrical cable, prepare the foundations and erect the wind turbines.

Occupations anticipated to be essential for this project include (as per National Occupational Classification 2001):

- Contractors and supervisors (construction and electrical trades);
- Crane operators;
- Electrical power line and cable workers;

- Engineers (construction and electrical);
- Heavy equipment operators;
- Iron workers;
- Labourers and helpers;
- Millwrights;
- Truck drivers;
- Welders.

Wind generation projects require little maintenance compared to fossil fuel plants. During operations, approximately 2 to 4 full-time trained wind technicians will be required. Wind turbines are typically maintained twice a year to reduce mechanical or electrical problems. Scheduled maintenance will be carried out, where practicable, during periods of low wind. The half-year service generally takes 1 to 2 days and consists of greasing, hydraulic filter changes where applicable, visual inspection and some diagnostic testing. The annual service generally lasts 2 to 4 days.

3.6 Project-related Documents

An expression of interest was submitted to Newfoundland and Labrador Hydro on January 27, 2006.

4 APPROVAL OF THE UNDERTAKING

Table 4-1 lists the permits required before wind farm construction may commence and the authorities responsible for issuing them. This list is subject to modification.

Table 4-1: Permits Required for the Project

Permit	Authority
Building Accessibility Exemption Registration	Municipal Council
Environmental Permits	Department of Environment and Conservation, Environment Canada, Natural Resources Canada, Fisheries and Oceans Canada
Permits for Crown Lands	Department of Environment and Conservation
Application for Environmental Permit for Culvert Installation	Department of Environment and Conservation
Highway Access Permit	Department of Transportation and Works
Tall Structures Obstruction Clearance	Transport Canada
Electrical Permit	Customer Services / Operations

5 PUBLIC CONSULTATIONS

A timely and transparent consultation process with the public will be undertaken by Vector. Consultations will begin early to ensure that all important concerns brought up by local communities are addressed.

A meeting with the Municipal Council of Fermeuse was held on July 5, 2006, to provide information about the project. An open house for the community of Fermeuse is planned before the end of August.

6 SCHEDULE

The start date of construction is contingent on completion of environmental assessment requirements and the wind monitoring study, granting of all necessary permits, negotiation of the power purchase agreement and obtaining necessary financing. It is anticipated that first phase of the construction will occur between June and November 2007. The second phase is planned between May and September 2008, the objective being to have the Project in service by December 31, 2008, as per Newfoundland & Labrador Hydro's RFP requirements. A tentative preliminary construction schedule is presented in Figure 6-1. The commissioning date is subject to NLH's approval and may be modified.

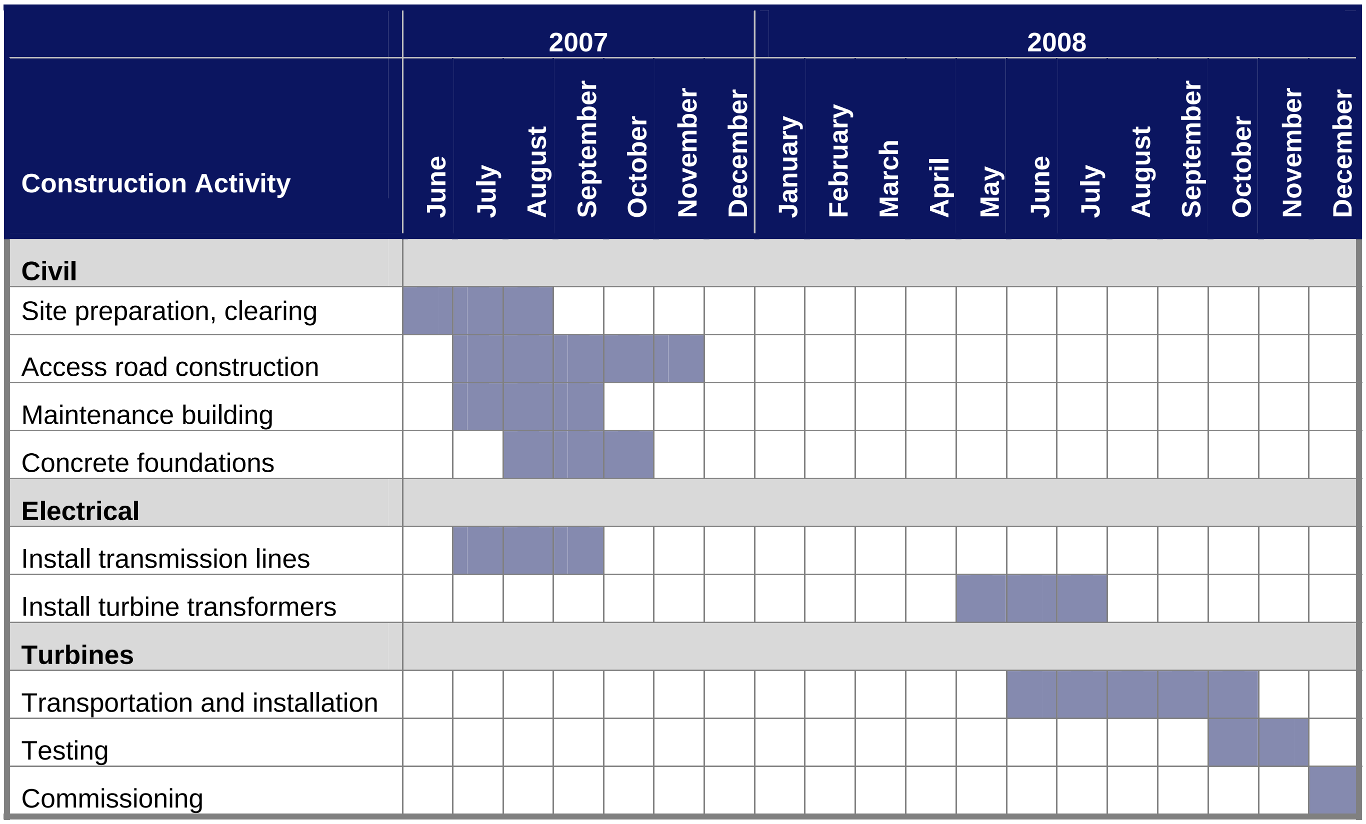


Figure 6-1: Preliminary Construction Phase Schedule

7 FUNDING

The Project will be funded by Vector Wind Energy Inc. and its partners. Additional funding will be obtained from programs such as the federal government’s Wind Power Production Incentive. The total project cost is estimated to be approximately $57.6 M, or $2.4 M per installed MW.

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