



**AMHERST ISLAND WIND ENERGY
PROJECT
PROJECT DESCRIPTION REPORT**

DRAFT

File No. 160960595
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Prepared for:

**Windlelectric Inc.
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Prepared by:

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Executive Summary

Windlectric Inc. (Windlectric) is proposing to develop, construct, and operate the 56 - 75 megawatt (MW) Amherst Island Wind Energy Project (the Project) within Loyalist Township in the County of Lennox and Addington in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The Project Study Area includes Amherst Island, an approximately 3 - 15 kilometre wide corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Study Area stretches from the mainland shoreline, north to the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m West of Jim Snow Drive to the East. The proposed Project Study Area is shown in **Appendix A**.

The basic components of the Project include approximately 31 - 37 wind turbine generators (depending on the turbine manufacturer and model selected) with a total installed nameplate capacity of approximately 56 - 75 MW, a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a submarine cable, an operations and maintenance building, a substation, a switching station, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), as well as access roads to turbine components and infrastructure with culvert locations, as required, at associated watercourse crossings. Temporary components during construction may include a temporary dock, storage and staging areas at the turbine locations, crane pads or mats, staging areas along access roads, delivery truck turnaround areas, central laydown areas, crane paths and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. 115 kV transmission line.

Windlectric has retained Stantec Consulting Ltd. (Stantec) to prepare the Renewable Energy Approval (REA) application, as required under O. Reg. 359/09. According to subsection 6.(3) of O. Reg. 359/09, the Project is classified as a Class 4 Wind Facility. The Project Description Report is one component of the REA application for the Project, and has been prepared in accordance with Item 10, Table 1 of O. Reg. 359/09, and the Ministry of the Environment's (MOE) *Technical Guide to Renewable Energy Approvals* (MOE 2011)".

The following table summarizes the requirements of this report as specified under O. Reg. 359/09.

Project Description Report Requirements (as per O. Reg. 359/09 – Table 1)

Requirements	Completed	Section Reference
1. Any energy sources to be used to generate electricity at the renewable energy generation facility.	✓	2.2
2. The facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.	✓	2.3
3. If applicable, the class of the renewable energy generation facility.	✓	1.1
4. The activities that will be engaged in as part of the renewable energy project.	✓	2.5
5. The name plate capacity of the renewable energy generation facility.	✓	2.1
6. The ownership of the land on which the project location is to be situated.	✓	1.2
7. Any negative environmental effects that may result from engaging in the project.	✓	3.0
8. An unbound, well marked, legible and reproducible map that is an appropriate size to fit on a 215 millimetre by 280 millimetre page, showing the project location and the land within 300 metres of the project location.	✓	Appendix A

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1.0 Introduction

1.1 PROJECT OVERVIEW

Windlectric Inc. (Windlectric) is proposing to develop, construct, and operate the 56 - 75 megawatt (MW) Amherst Island Wind Energy Project (the Project) within Loyalist Township in the County of Lennox and Addington in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The Project Study Area includes Amherst Island, an approximately 3 - 15 kilometre wide corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Study Area stretches from the mainland shoreline, north to the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East. The proposed Project Study Area is shown in **Appendix A**.

The basic components of the Project include approximately 31 - 37 wind turbine generators (depending on the turbine manufacturer and model selected) with a total installed nameplate capacity of approximately 56 - 75 MW, a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a submarine cable, an operations and maintenance building, a substation, a switching station, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), as well as access roads to turbine components and infrastructure with culvert locations, as required, at associated watercourse crossings. Temporary components during construction may include a temporary dock, storage and staging areas at the turbine locations, crane pads or mats, staging areas along access roads, delivery truck turnaround areas, central laydown areas, crane paths and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. 115 kV transmission line.

Windlectric has retained Stantec Consulting Ltd. (Stantec) to prepare the Renewable Energy Approval (REA) application, as required under O. Reg. 359/09. According to subsection 6.(3) of O. Reg. 359/09, the Project is classified as a Class 4 Wind Facility. The Project Description Report is one component of the REA application for the Project, and has been prepared in accordance with Item 10, Table 1 of O. Reg. 359/09, and the Ministry of the Environment's (MOE) *Technical Guide to Renewable Energy Approvals* (MOE 2011)".

1.2 PROJECT LOCATION

The Project will be located on privately owned lands on Amherst Island and on a portion of land located on the mainland, with the exception of the submarine cable. The legal description of the parcels of land that will be used for the Project will be provided as part of the REA application.

The Project will be entirely located within Loyalist Township in the County of Lennox and Addington in eastern Ontario. A map showing the location of the project is provided in **Appendix A**.

In accordance with O. Reg. 359/09, the Project Location includes all land and buildings/structures associated with the Project and any air space in which the Project will occupy. This includes structures such as turbines, access roads and power lines as well as any temporary work areas (the 'constructable area' for the Project) which are required to be utilized during the construction of the Project.

Although O. Reg. 359/09 considers the REA process in terms of the Project Location, the siting process for wind projects is an iterative process, and final location of Project components is not available at Project outset. Therefore, a Project Study Area is developed to examine the general area within which the Project components may be sited; information gathered within this larger area feeds into the siting exercise.

The Project Study Area includes Amherst Island, an approximately 3 - 15 kilometre wide corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Study Area stretches from the mainland shoreline, north to the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East. The proposed Project Study Area is shown in **Appendix A**.

Over the past several months, Windelectric has been refining the Project Location and completing various technical and environmental studies in preparation for finalizing the project layout, including identification of the mainland project components. Through these studies, the Project Study Area has been amended as follows: A small area on the mainland has been added to accommodate the potential location of project components on the mainland adjacent to the east side of the original Project Study Area. The revised Project Study Area is included in **Appendix A**.

Settlements in the general vicinity of the Project include Stella, Emerald, Millhaven, Ernestown, Amherstview, and Bath. There are no Provincial Parks located within the general vicinity of the Project Study Area.

1.3 CONTACTS

The proponent for the Project is Windlectric Inc. (a subsidiary of Algonquin Power and Utilities Corp. ("APUC")). Windlectric's office and contact for the Project is:

Name: Sean Fairfield
Title: Manager, Environmental Planning
Company: Algonquin Power Co.
Address: 2845 Bristol Circle,
Oakville, ON L6H 7H7
Tel: 905-465-4518

or,

Name: Alex Tsopelas
Title: Project Manager, Renewables
Company: Algonquin Power Co.
Address: 2845 Bristol Circle,
Oakville, ON L6H 7H7

The lead consultant for preparation of the Renewable Energy Approval (REA) application is Stantec Consulting Ltd. ("Stantec"). Stantec provides professional consulting services in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics for infrastructure and facilities projects. The consultant's office and Project contact is:

Name: Rob Rowland
Title: Senior Project Manager
Company: Stantec Consulting Ltd.
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Tel: 519-836-6966 ext. 550

or,

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Title: Project Manager
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Burlington, ON L7N 3T9
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1.4 AUTHORIZATIONS REQUIRED

At the federal, provincial and municipal level multiple permits, licenses and authorizations may be required to facilitate the development of the Project, in addition to the REA. The ultimate applicability of all permits, licenses and authorizations will be determined and based on the Project's detailed design.

1.4.1 Provincial

According to subsection 6.(3) of O. Reg. 359/09, the Project is classified as a Class 4 Wind Facility. At the provincial level there are multiple permits and approvals that may be required to facilitate the development of the Project, in addition to the REA. Their ultimate applicability will be determined during the REA process and based upon the Project's detailed design. The following is a list of key permits and approvals that may be required; however additional permits may also be required.

Table 1.1: Key Provincial Permits and Authorizations

Key Permit / Authorization	Administering Agency	Rationale
Approval of Connection	IESO	Electrical interconnect with IESO regulated network
Connection Assessment	IESO	Integration of project with IESO-controlled transmission system
Customer Impact Assessment	Hydro One Networks Inc. (HONI)	Integration of project with Hydro One and effects to customers
Connection Cost Recovery Agreement (CCRA)	HONI	Recovery of costs to grid operator of changes to allow connection
System Impact Assessment	IESO	Integration of project with IESO-controlled transmission system
Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Permit	Cataraqui Region Conservation Authority	Work within floodplains, water crossings, river or stream valleys, hazardous lands and within or adjacent to wetlands. Projects requiring review, <i>Fisheries Act</i> authorization and/or assessment under the <i>Canadian Environmental Assessment Act</i> are forwarded to the Department of Fisheries and Oceans (DFO)
Certificate of Inspection	Electrical Safety Authority (ESA)	A record that electrical work complies with the requirements of the Ontario Electrical Safety Code.
Generator's License	Ontario Energy Board (OEB)	Generation of electrical power for sale to grid
Leave to Construct	OEB	Authorization to construct power transmission lines
Notice of Project	Ministry of Labour	Notify the Ministry of Labour before construction begins.
Special vehicle configuration permit	Ministry of Transportation (MTO)	Use of non-standard vehicles to transport large components
Transportation Plan	MTO	Adherence to road safety and suitability
Highway Entrance Permit	MTO	Entrance permit for new or upgraded road entrances onto a provincial highway Interference or obstruction of the highway
Change of Access and Heavy/Oversize Load Transportation Permit	MTO	Compliance with provincial highway traffic and road safety regulations

Table 1.1: Key Provincial Permits and Authorizations

Key Permit / Authorization	Administering Agency	Rationale
Wide or excess load permit	MTO	Transportation of large or heavy items on provincial highways

1.4.2 Municipal

Several permits and authorizations may also be required from Loyalist Township and the County of Lennox and Addington (Table 1.2).

Table 1.2: Key Municipal Permits and Authorizations

Key Permit / Authorization	Rationale
Municipal Consent, Work with the R.O.W	Required for works in municipal road allowances
Consent/Severance Application	Required if easements over private lands required
Road Cut Permit	May be required for access roads off of county roads or works to county roads
Pre-Condition Survey	Assessment of pre-construction conditions for engineering staff
Building Permit	Compliance with building codes
Entrance Permit	Entrance from county roads
Transportation Plan	Adherence to road safety and suitability
Additional Plans related to general engineering (e.g. siltation control, lot grading, plan of services, etc.), installation of temporary dock, water, wastewater, storm water, transportation, and geotechnical	Required supporting information/plans required by Loyalist Township and the County of Lennox and Addington

1.4.3 Federal Involvement

It is expected that a Federal Screening report will not be required for the Project, as it is not anticipated that it will cause a 'trigger' under the *Canadian Environmental Assessment Act* (CEAA), such as a Harmful Alteration, Disruption or Destruction of fish habitat under the *Fisheries Act*, or application for project funding under a future program similar to *ecoEnergy for Renewable Power*. However, the agency consultation program for the Project will include all federal departments and agencies typically interested in wind power projects (e.g., Department of National Defense, Environmental Canada, Transport Canada, etc.). All required federal permits and approvals required for the Project will be determined during the REA process, but may include those listed in Table 1.3.

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Table 1.3: Key Federal Permits and Authorizations

Permit / Authorization	Administering Agency	Rationale
Aeronautical Obstruction Clearance	Transport Canada – Aviation Division	Turbine lighting and marking
Land Use Clearance	NavCanada	Aeronautical safety mapping and designations
Navigational Clearance	Transport Canada – Marine Division	Crossing a navigable watercourse Installation of temporary dock

2.0 Project Information

2.1 NAMEPLATE CAPACITY OF THE PROJECT

The Project will consist of 56 - 75 MW (nameplate capacity) of wind power.

2.2 ENERGY SOURCES

The Amherst Island Wind Energy Project will utilize the wind as the source of energy for the Project. No supplementary fuel sources would be used to generate electricity for the Project.

2.3 PROJECT COMPONENTS

This section provides a general description of the major equipment and infrastructure associated with operation of the Project. The preliminary project description provided in this document will be refined and finalized as Windlectric proceeds through the REA process.

2.3.1 Wind Turbine Generators

The Project will include 31 - 37 model wind turbine generators with a total installed nameplate capacity of approximately 56 - 75 MW. The Siemens SWT 2.3-113 (manufacturer and model) is being contemplated, at this time, for the Project.

Details of the turbine are provided below in Table 2.1.

Operating Data	Specification
General	
Rated capacity (kW)	2300 kW
Cut-in wind speed (m/s)	3 m/s
Cut-out wind speed (m/s)	25 m/s
Rotor	
Number of rotor blades	3
Rotor diameter (m)	113 m
Blade length (m)	55 m
Swept area (m ²)	10000 m ²
Rotor speed (rpm)	6 - 13 rpm
Tower	
Hub height (m)	99.5 m or site-specific
Tip height (m)	154.5 m or site-specific

A more detailed description of the turbines is provided in **Appendix B**.

2.3.2 Electrical Interconnection

A step-up transformer, located in a separate locked room in the nacelle of each wind turbine, is required to transform the electricity created in the nacelle to a standard operating power line voltage (i.e. 690 V to 34.5 kV).

From each step-up transformer, a high voltage cable runs down the turbine tower to the 34.5 kV switchgear located at the bottom of the tower. From the switchgear, underground and/or overhead 34.5 kV collector lines will carry the electricity to the municipal road allowances following the turbine access roads.

The electricity will be transported by the electrical power line collector system to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. 115 kV transmission line.

At the substation the voltage is stepped up from 34.5 kV to 115 kV via a main output transformer. The substation will be operated, monitored and controlled 24-hours a day via a telecommunication system. To facilitate the Project's connection to the provincial grid, a new 3-6 km long (approximate) 115 kV submarine cable will be constructed as part of the project. The configuration and route for the power line will be determined as part of the REA process.

2.3.3 Access Roads

Existing provincial and municipal roads will be used to transport project-related components, equipment and personnel to the Project Study Area. The Project will be installed on private lands. Access to these lands will be required for installation and operation of the project components including wind turbines, met tower, operations and maintenance building, substation and switching station. Existing agricultural laneways will be utilized where possible. New access roads will be constructed as required to provide access to the individual turbine sites. Permanent access roads will be approximately 3 - 5 metres wide.

2.3.4 Operations and Maintenance Building

Associated with the Project will be an operations and maintenance building. The size and location of this building will be determined and examined during the REA process.

2.3.5 Substation

Associated with the Project will be a substation. The substation will be located on private land. The size and location of the substation will be determined and examined during the REA process.

2.3.6 Switching Station

Associated with the Project will be a switching station where the electrical infrastructure will be connected to the existing Hydro One Networks Inc. transmission system. The switching station

will be located on private land. The size and location of the switching station will be determined and examined during the REA process.

2.3.7 Met Tower

One permanent met tower is anticipated to be required for use during the operation phase of the Project. The required met tower(s) will be located on private land. The number of met towers, their size and location will be determined and examined during the REA process.

2.3.8 Water Crossings

All crossings will require permit approval from the Cataraqui Region Conservation Authority. The final configuration and route for the collector lines will be determined as part of the REA process. All temporary crossings would comply with the DFO's Ontario Operation Statement '*Temporary Stream Crossings*' where possible.

2.4 TEMPORARY COMPONENTS

Temporary components during construction may include a temporary dock, storage and staging areas at the turbine locations, crane pads or mats, staging areas along access roads, delivery truck turnaround areas, central laydown areas, crane paths and associated watercourse crossings. The final configuration and location of these components will be determined as part of the REA process.

At this time, it is anticipated that a temporary dock will be installed to transport Project components to and from the Island. However, if required, a permanent dock may be installed instead. The requirement for a temporary or permanent dock will be determined and examined during the REA process. As previously discussed, installation of all Project components will comply with the required federal, provincial and municipal level multiple permits, licenses and authorizations.

2.5 PROJECT SCHEDULE

The table below provides an overview of the projected dates associated with the Project.

Table 2.1: Project Schedule Overview

Milestone	Approximate Date
Initiate Public REA Process	May 2011
REA technical studies	Ongoing through to December 2011
Public Open House #1	December 2011
Draft REA Reports to Public	October
Public Open House #2	January 2013
REA Approval	August 2013
Start of Construction	September 2013
Commercial Operation Date (COD)	Approximately February 2014
Repowering/Decommissioning	2034 (approximately 20 years after COD)

2.6 PROJECT ACTIVITIES

A general overview of the activities during construction, operation, and decommissioning phases of the Project are provided below.

Table 2.2: Key Project Activities

Project Phase	Activities
Construction	Turbine Sites
	Delineation of temporary work areas
	Completion of necessary site grading
	Access road construction and culvert installation
	Installation of turbine and met tower foundations
	Installation of crane pads or mats
	Turbine and met tower erection
	Installation of collector lines, usually parallel to access roads
	Reclamation of temporary work areas
	Site landscaping (final grading, topsoil replacement, etc.)
	Substation Site
	Installation of substation and connection with grid
	Reclamation of temporary work areas
	Switching Station Site
	Preparation of laydown area
	Installation of switching station and connection with grid
	Reclamation of temporary work areas
	Operations and Maintenance Building Site
	Preparation of laydown area
	Construction of operations and maintenance building
	Reclamation of temporary work areas
	Off-Site Activities
	Preparation of laydown area and landing area
	Installation of collector lines in municipal road right of way
	Installation of submarine cable
	Installation (and removal, if required) of temporary docks
	Additional Activities
Component transportation to Project Location	
Operation	Turbine Sites
	Preventative maintenance
	Unplanned maintenance
	Meter calibrations
	Grounds keeping
	Substation Site
	Preventative maintenance for substation
	Unplanned maintenance for substation
	Switching Station Site
	Preventative maintenance for switching station
	Unplanned maintenance for switching station
	Operations and Maintenance Building Site
	Remote wind farm condition monitoring

Table 2.2: Key Project Activities

Project Phase	Activities
	Operations and maintenance building maintenance
	Off-Site Activities
	Electrical line maintenance
Decommissioning	Turbine Sites
	Removal of turbine and met tower infrastructure
	Site grading (dependent upon new proposed use)
	Possible removal of access roads dependent upon agreement with property owner
	Possible excavation and removal of collector lines depending upon agreement with property owner
	Substation Site
	Removal of substation
	Switching Station Site
	Disconnection of switching station from provincial grid
	Removal of switching station
	Operations and Maintenance Building Site
	Removal of operations and maintenance building, dependent on agreement with property owner
	Off-Site Activities
	Removal of collector system in municipal right of way (remove wires and poles as required, dependent upon agreement with municipality)
	Removal of docks (if required)

2.6.1 Waste Generation

Construction and Decommissioning

During construction and decommissioning, waste material would be generated at, and transported from, the Project Location. Waste material produced by the Project is expected to consist of construction material (e.g. excess fill, soil, brush, scrap lumber and metal, banding, plastic wrap removed from palletized goods, equipment packaging, grease and oil, steel, etc.) and a minor amount of domestic waste (i.e. garbage, recycling and organics). Similar waste material may be generated during decommissioning.

All wastes will be handled and recycled or disposed of in accordance with regulatory requirements. Further details on waste management and disposal will be developed during the REA process.

Operation

During operation, the operations and maintenance building will produce waste materials typical of an office setting, including recyclables and domestic waste.

Lubricating and hydraulic oils associated with Project maintenance and operation would be used for the facility, and waste materials such as oil, grease, batteries, and air filters and a minor amount of domestic waste (i.e. garbage, recycling, and organics), would be generated during standard operation and maintenance activities. Although the exact oil and grease requirements

for the Project are not known at this time, oil changes will be completed in accordance with oil analysis recommendations. The amount of oil and grease stored on site would depend on availability, transportation schedules, and the service cycle. Used oil would be stored in a designated area of the operations and maintenance building, and picked up by certified contractor with the appropriate manifests in place.

All wastes will be handled and recycled or disposed of in accordance with regulatory requirements. Further details on waste management and disposal will be developed during the REA process.

2.6.2 Emissions

Construction and Decommissioning

During construction, dust and acoustic emissions will be generated as a result of operating heavy equipment and due to construction related traffic and various construction activities (e.g., excavation, grading, etc.). Similar emissions may be expected during decommissioning.

Operation

During operations, minor localized air emissions would occur from the periodic use of maintenance equipment to repair Project infrastructure over the life of the Project and from personnel vehicles and waste management haulers travelling to and from the operations and maintenance building during regular business hours.

Acoustic emissions from the Project (turbines and substation) will be assessed in detail during the REA process. All emissions will be managed within the limits set by regulatory requirements.

2.6.3 Hazardous Materials

Hazardous materials on-site are limited to fuel, lubricating oils, and other fluids associated with project construction, maintenance and operation. These materials are contained within Project components and/or the operations and maintenance building. Typical containment facilities and emergency response materials will be maintained on-site as required. Disposal of any hazardous materials will be in accordance with regulatory requirements. The process for final disposal of any hazardous waste will be developed during the REA process.

2.6.4 Sewage and Stormwater Management

Sanitary waste generated by the construction crew will be collected via portable toilets and wash stations supplied by the construction contractor. Disposal of these wastes will be the responsibility of the contracted party and will be done in accordance with regulatory requirements.

To support the operations and maintenance building, a septic system and water well will likely need to be installed. This system will be designed to the standard specifications for the area as defined by the MOE and/or County. More detailed information on the water well and septic

system will be provided later in the REA process. The specific service requirements for the operations and maintenance building will be assessed during the REA process.

Stormwater management works may be required in association with the operations and maintenance building and substation. The specific requirement for these works will be assessed during the REA process.

2.6.5 Water-taking Activities

Construction and Decommissioning

There is potential for groundwater to be encountered during the installation of the turbine foundations, turbine access roads, underground collector lines, substation, switching station and operations and maintenance building. As such, it is possible that some dewatering activities may be required when installing these project components; however withdrawal amounts are anticipated to be below 50,000 l/d. More information on water-taking activities will be provided later in the REA process.

Operation

Groundwater may be required during operation of the operations and maintenance building. The specific service requirements for the operations and maintenance building will be assessed during the REA process.

3.0 Description of Potential Environmental Effects

The effects of constructing, operating, and maintaining a renewable energy facility is well understood and can be typically mitigated through well known and accepted techniques and practices. For example, siting infrastructure outside of wetlands and away from residential (sound) receptors reduces the potential for negative environmental effects.

A screening of environmental features was undertaken on potential issues and effects relevant to the Project (see **Appendix C**). Based upon the above screening of environmental features, experience gained as part Project planning, and the requirements of the REA process, the following Project-specific issues and potential effects have been identified and are expected to be further analysed as part of the REA application process:

- Heritage and Archaeological Resources;
- Natural Heritage Resources;
- Water Bodies;
- Air, Odour, Dust;
- Environmental Noise;
- Land Use and Resources;
- Provincial and Local Infrastructure; and,
- Public Health and Safety.

Detailed descriptions of the potential effects, mitigation measures, and net effects to these features during the construction, operation, and decommissioning phases of the Project will be provided in the REA application and summarized in the final Project Description Report.

3.1 PROJECT RELATED SETBACKS

A key component of the REA process is the establishment of common setbacks for all renewable energy facilities in the Province. Where Project related infrastructure will be located within the setbacks, additional analysis (i.e., Environmental Impact Study) will be provided in the REA application and summarized in the final Project Description Report. Setbacks (e.g., non-participating receptors, significant wildlife habitat, etc.) have not yet been mapped as site investigations and other analyses have not yet been completed to confirm the locations of the features.

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Key setbacks which will be applied throughout the design of the Project are as follows:

Feature	Setback Distance	Study Alternative When Within Setback
Non-participating receptor	550 m (from turbine base)	An Environmental Noise Impact Assessment will be completed for the Project according to MOE Noise Guidelines.
Public road right-of-way and railway right-of-way	Turbine blade length + 10 m (from turbine base)	N/A
Property line	Turbine height (excluding blades) (from turbine base)	Does not apply to parcels of land if the abutting parcel of land is a participant in the Project or if it is demonstrated that the wind turbine will not result in adverse impacts on nearby business, infrastructure, properties or land use activities.
Provincially significant southern wetland	120 m	Development not permitted within feature. Development and site alteration may be possible within setback area; EIS required.
Provincially significant ANSI (Earth Science)	50 m	Development and site alteration may be possible within natural feature and setback area; EIS required.
Provincially significant ANSI (Life Science)	120 m	Development and site alteration may be possible within natural feature and setback area; EIS required.
Significant valleyland	120 m	Development and site alteration may be possible within natural feature and setback area; EIS required.
Significant woodland	120 m	Development and site alteration may be possible within natural feature and setback area; EIS required.
Significant wildlife habitat	120 m	Development and site alteration may be possible within natural feature and setback area; EIS required.
Lake	120 m from the average annual high water mark	Development and site alteration may be possible within setback area; additional report required. No turbine or transformer located within a lake or within 30 m of the average annual high water mark.
Permanent or intermittent stream	120 m from the average annual high water mark	Development and site alteration may be possible within setback area; additional report required. No turbine or transformer located within a permanent or intermittent stream or within 30 m of the average annual high water mark.
Seepage area	120 m	Development and site alteration may be possible within setback area; additional report required. No turbine or transformer located within 30 m of a seepage area.

4.0 Closure

The Amherst Island Wind Energy Project 'Project Description Report' has been prepared by Stantec for Windlectric in accordance with Item 10, Table 1 of Ontario Regulation 359/09, and the *Technical Guide to Renewable Energy Approvals* (MOE 2011).

This report has been prepared by Stantec Consulting Ltd. for the sole benefit of Windlectric, and may not be used by any third party without the express written consent of Windlectric and Stantec Consulting Ltd. The data presented in this report are in accordance with Stantec's understanding of the Project as it was presented at the time of the Report.

STANTEC CONSULTING LTD.

DRAFT

Rob Rowland
Senior Project Manager

DRAFT

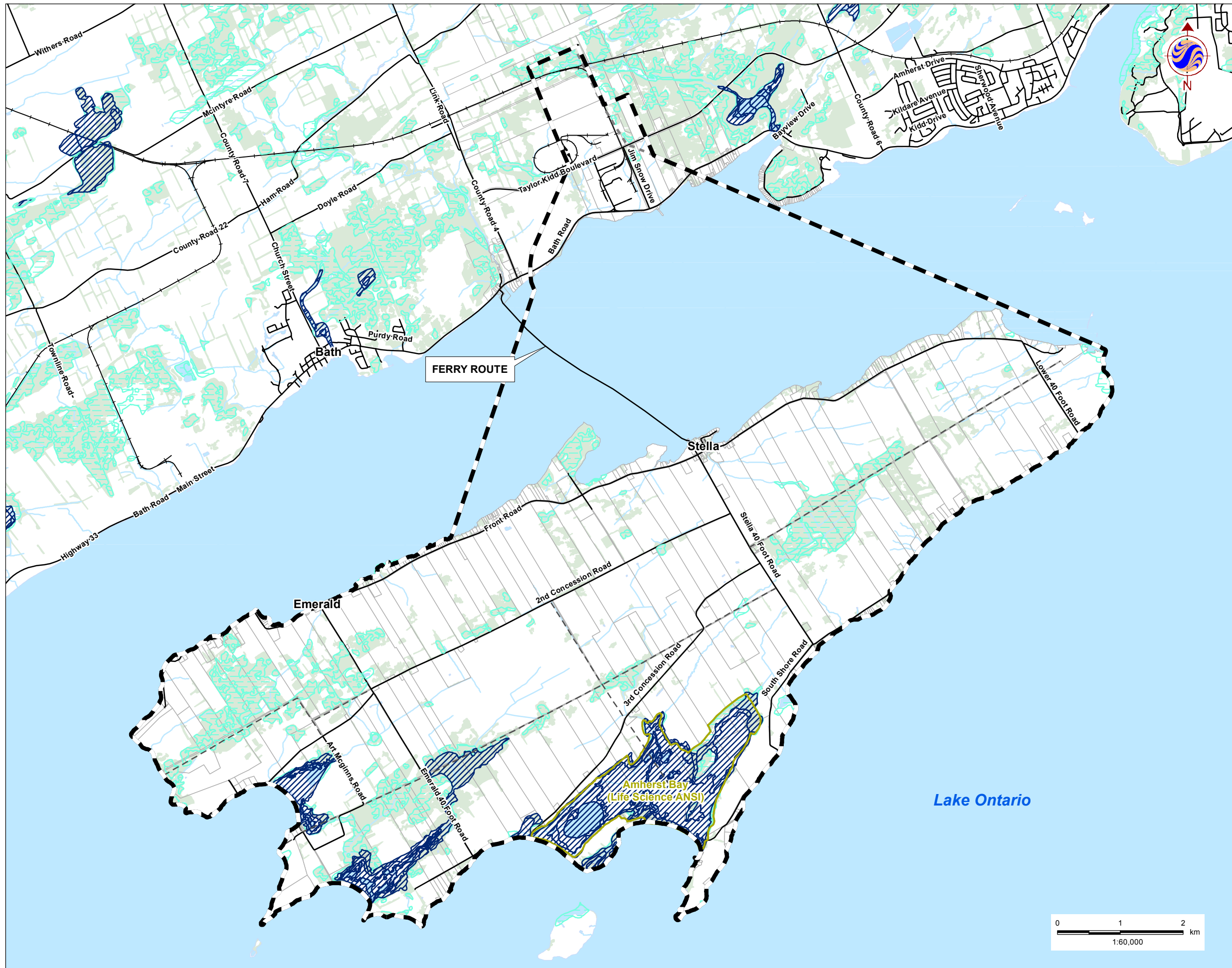
Kerrie Skillen
Project Manager

5.0 References














Ontario Ministry of the Environment. 2011. Technical Guide to Renewable Energy Approvals.
O. Reg. 359/09. 2009. Ontario Regulation 359/09 made under the Environmental Protection
Act Renewable Energy Approvals Under Part V.0.1 of the Act.

Appendix A

Project Study Area



Legend

-  Current Project Study Area
-  Previous Project Study Area
-  Road
-  Unopened Road Allowance
-  Railway
-  Watercourse
-  Waterbody
-  Wooded Area
-  ANSI Boundary
-  Property Boundary
-  Provincially Significant Wetland
-  Locally Significant Wetland
-  Unevaluated Wetland

Notes

1. Coordinate System: UTM NAD 83 - Zone 18 (N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.



Stantec

August 2012
160960595

Client/Project

WINDLECTRIC INC.
AMHERST ISLAND WIND ENERGY PROJECT

Figure No.

1

Title

Project Study Area

Appendix B

Turbine Specifications



SIEMENS

SWT - 2.3 - 113

Turning moderate wind into maximum results

www.siemens.com/energy

Answers for energy.

At the leading edge of evolution

The new Siemens SWT-2.3-113 wind turbine is the ultimate choice for low to moderate wind conditions. The revolutionary direct drive generator and the new, optimized Quantum Blade are paired to extract as much energy as possible from the wind.

Efficient. Quiet. Robust and reliable. The Siemens SWT-2.3-113 is the new benchmark wind turbine for low to medium wind speeds. As a result of more than 30 years of research and development, it is designed to harvest more energy out of moderate wind conditions than anyone thought possible.

Proven design

The SWT-2.3-113 is built around the same revolutionizing direct drive generator as the SWT-3.0-101. The direct drive turbine offers exceptional reliability and efficiency – with only 50% of the parts normally required for a conventional wind turbine. By using the same proven design and sharing the majority of components with its larger sibling, production costs and lead times can be kept down.

Unique aerodynamics

The Quantum Blade combines exceptional aerodynamic performance with patented manufacturing technology. Based on innovative aerodynamic solutions in the root and tip sections, the Quantum Blade offers maximum efficiency at low to medium wind speeds.

Maximum availability

Simplicity is the ultimate sophistication. With the simple and robust direct drive concept with 50% fewer parts, the SWT-2.3-113 wind turbine is designed for maximum availability. Furthermore, the spacious nacelle and the ergonomic working conditions facilitate serviceability and contribute to minimizing downtime for scheduled maintenance.

“You cannot change the wind.
It may be strong, it may be light.
This leaves it up to us to extract
as much energy as we can from it.

Anne Schannong Vinther, Quality Engineer



Innovation for efficiency

Siemens direct drive technology and the new Quantum Blade represent groundbreaking wind turbine design and technology. The result of these two key innovations is a turbine with maximum efficiency and reliability, which helps to enable a solid return on investment.

Maximized performance with 50% fewer parts

The Siemens direct drive design incorporates a permanent magnet generator with fewer moving parts than ever before.

The simple permanent magnet design offers increased efficiency directly by minimizing energy losses and indirectly by reducing maintenance needs. The outer rotor arrangement leads to a more compact and lightweight generator, making transportation and installation easier and faster.

The B55 Quantum Blade

The new generation of Siemens wind turbine blades is lighter than previous designs but retains the superior

strength known from earlier generations of blades. Thanks to unique airfoils and redesigned tip and root sections, the blade offers superior performance at low to medium wind speeds. The root section uses Siemens “flatback” profiles to minimize root leakage and provide higher lift. The tip has also undergone a fine-tuning process to give enhanced lift and acoustic performance.

One-piece moulding

Like other Siemens blades, the new Quantum Blades are manufactured in Siemens proprietary IntegralBlade® process. Each blade is moulded in one single production step from fiberglass-reinforced epoxy resin, resulting in a stronger, lighter blade without any joints.



Lower noise

With a low 105 dB noise level, the SWT-2.3-113 is one of the quietest wind turbines on the market. As a result, this turbine type has an extremely high ratio of energy output per noise affected area, resulting in fewer disturbances to people and wildlife.

Superior grid compliance

The Siemens NetConverter® is designed for maximum flexibility in the turbine's response to voltage and frequency variations, fault ride-through capability and output adjustment. The advanced wind farm control system provides state-of-the-art fleet management.

Technical specification

Rotor

- Type: 3-bladed, horizontal axis
- Position: Upwind
- Diameter: 113 m
- Swept area: 10,000 m²
- Speed range: 6–13 rpm
- Power regulation: Pitch regulation with variable speed
- Rotor tilt: 6 degrees

Blade

- Type: Self-supporting
- Blade length: 55 m
- Tip chord: 0.63 m
- Root chord: 4.2 m
- Aerodynamic profile: NB 1-7, SWPNA1_XX12, FFAxxx
- Material: GRE
- Surface gloss: Semi-mat, <30 / ISO2813
- Surface colour: Light grey, RAL 7035

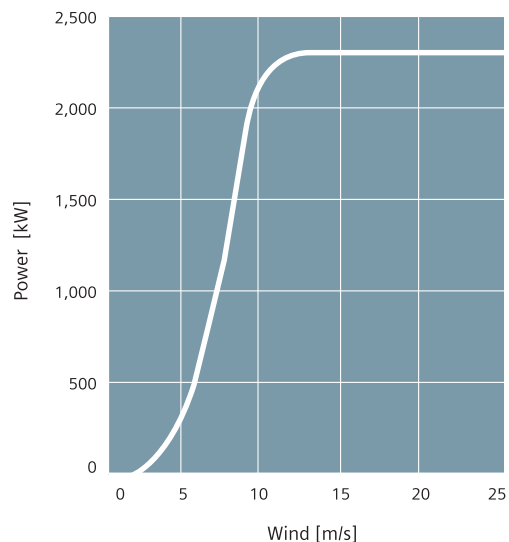
Aerodynamic brake

- Type: Full span pitching
- Activation: Active, hydraulic

Load-supporting parts

- Hub: Nodular cast iron
- Main shaft: Cast
- Nacelle bed plate: Cast

Sales power curve



Mechanical brake

- Type: Hydraulic disc brake
- Position: Generator rear end
- Number of callipers: 3

Canopy

- Type: Totally enclosed
- Surface gloss: Silk mat, 30–40 / ISO2813
- Colour: Light grey, RAL 7035

Generator

- Type: Synchronous, PMG
- Nominal power: 2,300 kW

Grid terminals (LV)

- Nominal power: 2,300 kW
- Voltage: 690 V
- Frequency: 50 Hz or 60 Hz

Yaw system

- Type: Active
- Yaw bearing: Externally geared
- Yaw drive: 8 (optional 10) electric gear motors
- Yaw brake: Passive friction brake

Controller

- Type: Microprocessor
- SCADA system: WPS
- Controller designation: SWTC, STC-1, SCS-1

Tower

- Type: Cylindrical and/or tapered tubular
- Hub height: 99.5 m or site-specific
- Corrosion protection: Painted
- Surface gloss: Silk mat, 30–40 / ISO2813
- Colour: Light grey, RAL 7035

Operational data

- Cut-in wind speed: 3 m/s
- Nominal power at: 12–13 m/s
- Cut-out wind speed: 25 m/s
- Maximum 3 s gust: 59.5 m/s (IEC version)

Weights (approximately)

- Rotor: 66,700 kg
- Nacelle: 73,000 kg
- Tower: Site-specific

1 Quantum Blade

- Unique design and manufacturing process
- IntegralBlade® one-piece moulding for maximum strength
- Optimized aerodynamics for low to medium wind conditions
- Increased length for higher energy yield
- Blade root – designed for minimized root leakage and increased lift

2 Direct drive generator

- Permanent magnet design
- Totally enclosed, easy to handle and lightweight design
- Optimum reliability and efficiency

3 Nacelle

- Solid, compact and lightweight structure
- Spacious, ergonomic design – maximum serviceability
- 50% fewer parts compared to geared turbines

4 Cooling

- Simple and robust LiquidLink® water cooling system
- Top-mounted passive cooling radiators
- High-efficient two-stage cooling as function of power



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Energy Sector
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91058 Erlangen, Germany

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Phone: +49 180 524 70 00

Fax: +49 180 524 24 71

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E-mail: support.energy@siemens.com

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general descriptions of the technical options
available, which may not apply in all cases.
The required technical options should therefore
be specified in the contract.

Stantec

**AMHERST ISLAND WIND ENERGY PROJECT
PROJECT DESCRIPTION REPORT**

Appendix C

Environmental Features Screening Checklist

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

1. Heritage and Archaeological Resources	
1.1 Protected properties and heritage resources	<ul style="list-style-type: none"> • These features may be located in the Project Study Area; there is potential for these features to be affected during construction of the Project. • Project siting will avoid these areas to the greatest extent possible. • A Protected Properties Assessment and Built Heritage and Cultural Landscape Inventory will be undertaken for the Project, which will evaluate potential effects to these features, and propose measures to avoid, eliminate or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Culture prior to submission of the REA application.
1.2 Archaeological resources	<ul style="list-style-type: none"> • There is potential for archaeological resources to be affected, if present, during construction. Potential effects would consist of direct disturbance (such as physical removal) of these resources from any subsurface works required during construction, including the installation of access roads, power lines, and foundations. • Stage I and II (if recommended by the Stage I) Archaeological Assessments will be undertaken for the Project. These reports will identify and document these resources within the Project footprint and provide recommendations regarding additional work required prior to or during construction. These reports will be reviewed and commented on by the Ontario Ministry of Culture prior to submission of the REA application.
2. Natural Heritage Resources	
2.1 Wetlands	<ul style="list-style-type: none"> • Wetlands (provincially significant and non-provincially significant) are located in the Project Study Area. • Project siting will avoid these areas to the greatest extent possible. • No Project related activities will occur within provincially significant wetlands. • Wetlands may be affected during construction if installation of project infrastructure takes place within 120 m of wetlands. Potential effects may be related to sedimentation from earth moving activities or stockpiled material, accidental spills, or direct loss of non-provincially significant wetland areas if Project components are sited in these features. • If Project infrastructure is located within 120 m of a provincially significant wetland, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application.

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

<p>2.2 Areas of Natural and Scientific Interest (ANSIs)</p>	<ul style="list-style-type: none"> • One provincially significant life science ANSI is located within the Project Study Area. Additional information about this feature will be collected as part of the records review for the Natural Heritage Assessment. • Project siting will avoid these areas to the greatest extent possible. No effects are anticipated if infrastructure is not within 120 m of the ANSIs. If Project infrastructure is located within 120 m of an ANSI, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application.
<p>2.3 Valleylands and hazard lands</p>	<ul style="list-style-type: none"> • Municipally designated Environmentally Sensitive areas (which may include floodplain, valleylands and hazard lands) are present within the Project Study Area; there is potential for these lands to be crossed with Project infrastructure, particularly watercourse crossings. • Potential effects may be related to the installation of watercourse crossings and are related to erosion or an increase in instability of these slopes. • Permit applications to local conservation authorities and/or the Department of Fisheries and Oceans for watercourse crossings will be included with the REA application, and will include standard mitigation measures for slope stabilization for each watercourse crossing. • If Project infrastructure is located within 120 m of a significant valleyland, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application.
<p>2.4 Woodlands</p>	<ul style="list-style-type: none"> • Woodlots are located within the Project Study Area, and some are likely to be determined as significant. • Potential effects may result from direct vegetation removal for project related infrastructure or damage to root systems from adjacent infrastructure. • If Project infrastructure is located within 120 m of a significant woodland, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application.
<p>2.5 Provincial parks and conservation reserves</p>	<ul style="list-style-type: none"> • There are no provincial parks located within the Project Study Area. No project related activities will occur within the provincial parks. • If Project infrastructure is located within 120 m of a provincial park, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application. • No conservation reserves are located within the Project Study Area.
<p>2.6 Other designated natural areas</p>	<ul style="list-style-type: none"> • No other designated natural areas are located within the Study Area.

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

<p>2.7 Significant wildlife species and wildlife habitat</p>	<ul style="list-style-type: none"> • The Natural Heritage Information Centre and the Ministry of Natural Resources have identified historical sightings of species at risk within the general area of study for the Project. • Area habitats may support such species and there is potential to affect these species directly, and indirectly (e.g. disruption/alteration of the habitat). • Significant wildlife habitat may be present in the Project Study Area. If Project infrastructure is located within 120 m of significant wildlife habitat, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application.
<p>2.8 Other wildlife and wildlife habitat</p>	<ul style="list-style-type: none"> • Birds, mammals, amphibian and reptile species are known to use the Project Study Area. Construction and operation of the Project has the potential to disturb wildlife (including mortality from direct collisions with project infrastructure) and wildlife habitat. • The majority of Project infrastructure will be located on lands that are already a source of disturbance to wildlife, including right-of-ways and agricultural lands.
<p>2.9 Significant flora species and vegetation communities</p>	<ul style="list-style-type: none"> • The Natural Heritage Information Centre has identified significant flora species within the general area of study for the Project. • There is potential to affect these species during construction, however most of the Project will be located within areas already cleared for rural and agricultural use. Potential effects may result from direct removal of vegetation or from works within 120 m of the feature.
<p>2.10 Other flora species and vegetation communities</p>	<ul style="list-style-type: none"> • The Project will be mostly located within areas already cleared for rural and agricultural land uses. Potential effects may result from direct removal of vegetation or introduction of non-native species to existing vegetation communities.
<p>2.11 Fish and fish habitat</p>	<ul style="list-style-type: none"> • Project related works may be within areas of fish and fish habitat (watercourse crossings). Additional potential effects may be related to the installation of watercourse crossings (e.g. sedimentation). Where required, mitigation measures are available to reduce or eliminate potential effects. • Permit applications to local conservation authorities and/or the Department of Fisheries and Oceans for watercourse crossings will be included with the REA application, and will include standard mitigation measures for protection of fish and fish habitat for each watercourse crossing. • If Project infrastructure is located within 120 m, or within, an area of fish habitat, an Environmental Impact Study will be conducted to identify the potential effects and propose measures to avoid, eliminate, or mitigate these effects. This report will be reviewed and commented on by the Ontario Ministry of Natural Resources prior to submission of the REA application.

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

3. Water Bodies

<p>3.1 Surface water (watercourses) quality, quantities, or flow</p>	<ul style="list-style-type: none"> • Watercourses are located throughout the Project Study Area. The Project Study Area is bordered by Lake Ontario. • Construction (e.g., culverts for access road crossings) may be proposed within surface water courses and limited works (e.g. stringing overhead power lines) may be proposed within 30 metres of a watercourse. Turbines and transformers will not be located within 30 m of these features. • The proposed development does not involve the storage or consumption of surface water. • The proposed development will not require significant alteration of surface runoff patterns. • Surface water quality could be affected by accidental spills/releases to the environment and sedimentation and/or erosion during construction of access roads. • If Project infrastructure is located within 120 m of a water body, a Water Body report will be prepared that identifies and assesses potential effects and proposes measures to avoid, eliminate, or mitigate these effects.
<p>3.2 Groundwater quality, quantity, or movement</p>	<ul style="list-style-type: none"> • It is possible that some dewatering activities may be required when installing Project infrastructure (e.g. tower foundations). Geotechnical investigations will gather information related to location and depth of groundwater in the Project area. • Withdrawal quantities will be below 50,000 l/d and are unlikely to affect groundwater quality or quantity. • There is potential to affect water quality of water wells in close proximity to the construction sites. Groundwater quality could be affected by accidental spills/releases to the environment.

4. Air Quality

<p>4.1 Emissions of pollutants or greenhouse gases</p>	<ul style="list-style-type: none"> • Construction equipment will generate emissions of pollutants and greenhouse gases; however this will be short in duration and limited in extent. • Operation of the Project will not result in negative effects on air quality since no emissions of pollutants or greenhouse gases are generated by the wind turbines.
<p>4.2 Emission of dust or odour</p>	<ul style="list-style-type: none"> • During construction dust may be generated from earthmoving or vehicular activity – any emissions will be short in duration and limited to the lands surrounding the work areas. • No odour emissions are expected to result from construction, operation, or decommissioning of the Project.

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

5. Environmental Noise

5.1 Emission of noise	<ul style="list-style-type: none"> • There will be an increase in ambient environmental noise during construction related to increased traffic, the operation of construction equipment and construction activities. • Mechanical and aerodynamic noise will be emitted from the wind turbines. Noise is emitted from transformers. • There is potential for limited environmental noise effects at sensitive receptors. • A detailed environmental noise impact assessment will be undertaken as per the MOE’s document <i>Noise Guidelines for Wind Farms - Interpretation for Applying MOE NPC Publications to Wind Power Generation Facilities</i> (October 2008). Noise assessments are also required by the MOE for transformer stations.
-----------------------	---

6. LandUse and Resources

6.1 Existing land uses	<ul style="list-style-type: none"> • Project is located in a predominantly rural and agricultural area. • Lands for project infrastructure will be required for the lease period. • During the lease period these lands will be changed from their present land use. Potential effects are related to the change in land use (i.e., from agricultural use to Project related use).
6.2 Local businesses and facilities	<ul style="list-style-type: none"> • Area businesses will benefit financially from spending associated with construction activities and fulfilling operational supplies.
6.3 Recreation areas	<ul style="list-style-type: none"> • Construction activities will not directly affect recreation areas. • Increased noise during construction may interfere with nearby recreational uses. • No effects are anticipated during the operation phase.
6.4 Landfill sites and waste disposal	<ul style="list-style-type: none"> • Construction wastes, such as excavated soils, equipment packaging and wrappings, and scraps, will be produced. • The Project will generate waste associated with turbine construction, maintenance and operation, and decommissioning. A waste collection and disposal management plan will be developed for each phase of the Project. • No negative effects are anticipated on local landfill sites.
6.5 Agricultural Lands	<ul style="list-style-type: none"> • Project infrastructure will occupy areas of prime agricultural land and potential effects are related to the change in use of the agricultural land. • The operation of the project will not negatively affect the use of adjoining prime agricultural lands, field crop production, or livestock pasturing, all of which can occur in close proximity to the project. • The 2005 PPS contains policies that support the establishment of renewable facilities in rural and agricultural areas.
6.6 Mineral, aggregate, or petroleum resources	<ul style="list-style-type: none"> • There are designated aggregate areas within the Project Study Area. • No potential effects are anticipated to existing mineral or aggregate resources. • Petroleum resources may be located in the Study Area. If Project infrastructure is located within 75 m of petroleum wells or works, it will be identified during the Natural Heritage Assessment. This report will be reviewed and commented on by the Ontario Ministry of Natural

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

	Resources. Additional consultations will be undertaken with the Petroleum Resources Centre to avoid potential effects to these features.
6.7 Forest resources	<ul style="list-style-type: none"> • Forest resources may be located in the Study Area; there is potential for these features to be affected during construction. • Project siting will avoid these areas to the greatest extent possible.
6.8 Game and fishery resources, including creating access to previously inaccessible areas	<ul style="list-style-type: none"> • The area is largely cleared for agriculture and there are no areas that could be deemed inaccessible. • There are potential fisheries resources that may be affected by the construction of the Project during work near/in water (see items 2.3, 2.7, 2.11, 3.1).
6.9 Remediation of contaminated land	<ul style="list-style-type: none"> • History of the area is generally rural and agricultural, therefore there is limited potential for contaminated sites, however the possibility of encountering such lands cannot be completely ruled out. • Historically the lands located on the mainland within the Project Study Area have been used for industrial purposes. There is potential for contaminated sites to be encountered during construction of the Project.
6.10 Telecommunications network	<ul style="list-style-type: none"> • There is potential to interfere with telecommunications networks in the Project Study Area. Potential effects may be due to infrastructure being located within the “line of sight” of telecommunications networks, or due to interference with radar systems. • Consultation with appropriate agencies regarding potential effects to these systems will be undertaken for the Project.
7. Provincial and Local Infrastructure	
7.1 Provincial and other major infrastructure	<ul style="list-style-type: none"> • Potential for an increase of traffic during construction on provincial roads due to commuting workforce and the transport of equipments and supplies. Potential effects are related to traffic congestion/safety and road damage from construction equipment and excess loads. • Other provincial infrastructure in proximity to the Project location will be identified as part of the records reviews and site investigations completed for the REA process.
7.2 Local infrastructure and services	<ul style="list-style-type: none"> • The transport of equipment and supplies during the construction phase will result in additional (temporary) road use and traffic to the Project sites. • Excess loads and numerous truck trips may deteriorate local road conditions. • Municipal consultations will include discussions regarding mitigation and potential compensation should municipal roads be affected by the Project. • During operation supplies will be intermittently delivered to the Project as required. • Other local infrastructure in proximity to the Project Location will be identified in consultation with local municipalities. Discussions with local municipalities will include measures to avoid or mitigate potential effects to this infrastructure. • The construction period will result in additional demand for local goods and services. • A limited number of operating personnel may be required to maintain the facility; therefore there will be only a nominal demand on/for public services (e.g., housing, hospitals, and

Appendix C – Amherst Island Wind Energy Project Environmental Features Screening Checklist

	schools).
8. Public Health and Safety	
8.1 Public health and safety	<ul style="list-style-type: none"> • Potential effects during construction are generally associated with increased traffic in the Project Study Area and unauthorized access to the work areas. Health and safety protocols and procedures will be developed during the REA process and by the construction contractor. • Potential exists for accidents and malfunctions during operation and thus there may be general public safety concerns with the new infrastructure. Health and safety protocols and procedures will be developed during the REA process and prior to Project commissioning. • There is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects.
9. Areas Protected under Provincial Plans and Policies	
9.1 Greenbelt (Protected Countryside and Natural Heritage System), Oak Ridges Moraine Conservation Plan Area, Niagara Escarpment Plan Area, Lake Simcoe Watershed Plan Area	<ul style="list-style-type: none"> • No areas protected under the specified Provincial Plans and Policies are located within the Project Study Area.
10. Aboriginal Interests	
10.1 First Nations or other Aboriginal communities	<ul style="list-style-type: none"> • Aboriginal communities identified by provincial and federal governments will be engaged as part of the REA process. • Potential effects to aboriginal or treaty rights, and measures for mitigation, will be identified during engagement with the aboriginal communities.
<ul style="list-style-type: none"> • Other 	
11.1 Aeronautical obstruction	<ul style="list-style-type: none"> • Some of the wind turbines may require aviation safety lighting. Specific lighting requirements for the project will be determined by Transport Canada.
11.2 Interference with navigable waters	<ul style="list-style-type: none"> • Project may cross or affect potentially navigable waterways. Confirmation of the presence of these features in the project area will be obtained from Transport Canada.