

# Project Description Report Ernestown Wind Park

Submission to: Ministry of the Environment

Renewable Energy Approval Unit 2 St. Clair Avenue West, Flr 12A

Toronto, ON M4V 1L5

Submission on behalf of: Ernestown Wind Park Inc.

Nhung Nguyen Project Manager

Phone: (416) 864-9977

1-877-389-4099

Fax: (416) 864-9568

E-mail: <u>info@ernestownwind.com</u>

Contact: **ORTECH Environmental** 

Leah Deveaux, BES

**Environmental Assessment Specialist** 

Compliance & Permitting

Tel: (905) 822-4120, Ext. 305

Fax: (905) 822-0406 E-mail: <u>ldeveaux@ortech.ca</u>

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Project Description For Ernestown Wind Park

Project No. 91035

# **SUMMARY OF CHANGES – Project Description Report**

The following changes have been made to this report to update it from the report released in July of 2012.

- 1. The report format was retooled and its presentation was altered slightly, as a result some table and figure numbers have changed
- 2. The report was updated to reflect the selection of the Enercon E92 Turbine. Additional clarifications have been added where necessary and references to the Vestas turbine have therefore been removed. The Enercon E92 has a transformer mounted inside the turbine tower, therefore all references to any other transformer type have been removed
- 3. Section 1.3 Authorizations Required was reformatted and authorizations required were elaborated on in further detail.
- 4. Clarifications regarding the transformation of connection voltages was added to section 2.2.1 Regulated Activities Construction
- 5. The proponent opted to construct a smaller less intrusive switching station instead of a substation; the location and footprint of this station remain unaltered. Minor editorial changes were made to reflect this change.
- 6. Sections of this report were updated to reflect the decision to carry the collector lines above ground, subsequently all references to below ground collector lines have been removed.
- 7. Minor typographical errors were corrected in the text
- 8. The Site Plan map in *Section 4* was updated to reflect the above changes, **no turbine locations were changed**.
- 9. Updates to the Natural Heritage section were made to reflect changes made in consultation with the Ministry of Natural Resources
- 10. Confirmation from the Ministry of Culture, Tourism and Sport was provided in Appendix B
- 11. Section 3.1, 3.2 3.3 and 3.5 were updated to reflect ongoing work and consultations in these areas.

# 2. GENERAL REQUIREMENTS

# 1.1 Project Information & Location

This project description report is a component of the *Renewable Energy Approval* (REA) permitting process and complies with *Ontario Regulation 359/09* (O.Reg. 359/09) under the *Environmental Protection Act*.

Ernestown Windpark Inc., as general partner of Ernestown Windpark LP, is proposing to develop a class 4 on shore wind energy generation facility named Ernestown Wind Park (the Project), located in the Loyalist Township, Ontario, to generate clean renewable energy for connection to the public grid. This project will promote a long-term, low-impact energy that will complement Ontario's goals of clean and sustainable electricity generation, while impacting economic growth in the rural community.

On July 1<sup>st</sup> 2012 amendments to O.Reg 359/09 came into force. Transition provisions allowed for projects such as this one to opt into following the new regulations or to remain under the previous process. Ernestown Wind Park opted to follow the July 1 2012 amended regulations.

The project is located on privately owned land, municipally zoned as agricultural and industrial and involves construction, operation and decommissioning of five Enercon E92 2.3 MW wind turbines modified to operate at 2.0 MW for a total nameplate capacity of 10MW. The Project requires construction of new access roads to the turbine sites and a new 44 kV overhead electrical connection line, which will connect with an existing distribution line located along Taylor Kidd Boulevard by way of a new switching station.

**Table 1: Description of the Energy Source** 

Wind Turbine Type and Model:	Enercon E92
Name plate capacity:	2.3 MW
	Modified to 2.0MW
Wind farm total capacity:	10 MW
Hub Height:	98 Metres
Blade length:	43.8 Metres
Blade swept area	6648 M <sup>2</sup>
Rotational speed:	5-16 rpm
Maximum acoustic emissions (95% rated):	105 dB

#### 1.2 Contacts

**Proponent:** Ernestown Windpark Inc.

as General Partner of Ernestown Windpark LP

Nhung Nguyen Project Manager 2300 Yonge Street Suite 801, PO Box 2300 Toronto, ON; M4P 1E4 Toll Free: 1-877-389-4099 Local: 613-770-6116

Main Office: 1-416-864-9977

Fax: 1-416-864-9568

Email: info@ernestownwind.com

Website: http://www.ernestownwind.com

#### **Consultants:**

# **Permitting Specialist**

Leah Deveaux ORTECH Environmental

804 Southdown Road Mississauga, ON; L5J 2Y4 Tel: (905) 822-4120, Ext. 305

Fax: (905) 855-0406

Email: <a href="mailto:ldeveaux@ortech.ca">ldeveaux@ortech.ca</a>

# **Permitting Senior Advisor**

Scott Manser

ORTECH Environmental 804 Southdown Road Mississauga, ON; L5J 2Y4

Tel: (519) 966-8798 Fax: (519) 966-8014 Email: smanser@ortech.ca

# 1.3 Authorizations Required

# 1.3.1 Ontario Renewable Energy Approval

Environmental impacts associated with electricity projects, including wind energy, in Ontario are governed by Ontario Regulation 359/09 (Regulation) under the Environmental Protection Act. Ontario wind energy projects greater than 50 kW with a sound power rating higher than 102 db require a Renewable Energy Approval (REA) as "Class 4" wind facilities according to the Regulation.

The REA process is a streamlined process where provincial agencies issue permits and approvals upon successful completion of the REA requirements. A completed REA will include Certificates of Approval for noise as well as any road use permits required from the Ministry of Transportation (MTO). In addition, the REA process is in step with the Ministry of Natural Resources (MNR) approval process. The Ministry of the Environment (MOE) has posted a series of technical guidance bulletins to assist proponents in organizing a "complete submission" ensuring that projects are reviewed in a timely manner.

# 1.3.2 Ministry of Transportation (MTO)

MTO approval is required where roadways or electrical line crossings occur at or over provincially controlled roadways. It is not expected that the Ernestown Wind Park will require a permit for any of these items. A transportation permit for oversized equipment will be required for delivery of components.

# 1.3.3 Ministry of Natural Resources (MNR)

The MNR is responsible for reviewing and approving the Natural Heritage Assessment component of the Renewable Energy Approval. A confirmation letter from the MNR is required for submission of the REA approval; this letter was received on October 1, 2012 and can be found in Appendix B.

# 1.3.4 Cataraqui Region Conservation Authority

The Cataraqui Region Conservation Authority is responsible for permits related to watersheds and conservation lands within the watershed. At present it is anticipated that permits will be required for two watercrossings for new access roads within the project area. Consultations with the Cataraqui conservation authority are detailed in the *Ernestown Wind Park Stakeholder Consultation Report*, and details regarding these crossings can be found in the *Ernestown Wind Park Construction Plan Report*.

# 1.3.5 Ministry of Tourism, Culture & Sport (MTCS)

The MTCS is responsible for reviewing and approving Archaeological and Cultural Heritage Assessments as a component of the REA process. On September 24, 2012 MTCS issued confirmation letter stated that they were satisfied with the assessment carried out on the project location. This correspondence can be found in Appendix C.

# 1.3.6 Loyalist Township

Loyalist Township is responsible for building permits, approving activities within the road allowances and road use agreements for municipal roadways. In order to construct the Project, the proponent will be required to obtain building permits, and approval of a new entrance onto municipal roadways and road use agreements for the construction period. These permits will be obtained by the construction contractor prior to REA approval.

# 1.3.7 County of Lennox and Addington

The County of Lennox and Addington is responsible for approving works which fall within county jurisdictions such as entrances onto county roads or works within the right of way on county roads. The Project will require approval from the County for the creation of a new entrance onto a roadway. This permit will be obtained by the construction contractor prior to REA approval

# 1.4 Federal Involvement

#### 1.4.1 Canadian Environmental Assessment

The Canadian Environmental Assessment Act (CEAA) is triggered by federal involvement in a project. The CEAA can be triggered by several factors including application for federal funding, potential effect of the project on federal lands or properties, and the project type being on the designated projects list. It is not anticipated that the Ernestown Wind Park will trigger a CEAA at this time as it does not meet criteria on the designated projects list.

# 1.4.2 Department of Fisheries and Oceans

The current development proposal does require water crossings and work in or around water. It is expected that this process will be managed by the Cataraqui Conservation Authority.

If the proposed work may result in harmful alteration, destruction, or disruption of fish and fish habitat (HADD), Department of Fisheries and Oceans (DFO) authorization for project related activities may be required under Sections 35 (2) of the Fisheries Act. DFO approval may be also required under Section 36 (3), which prohibits the deposit of deleterious substances in fish bearing waters. The DFO provides proponents a series of Operational Statements which describe the conditions and the measures to be incorporated in order to avoid negative impacts to fish and fish habitat. Proponents may proceed with a project without a DFO review providing the conditions are met and Measures to Protect Fish and Fish Habitat listed in the applicable Operational Statement is followed. The Cataraqui Conservation Authority is the initial point of contact regarding DFO interests and permit requirements.

#### 1.4.3 Environment Canada

Environment Canada (EC) is responsible for the Migratory Birds Convention Act (MBCA) and for the Species at Risk Act (SARA). The MBCA protects migratory birds, their eggs and nests. Section 5 of the MBCA prohibits possession of a migratory bird or nest except as authorized by the regulations. The Migratory Bird Regulation (MBR) section 6 prohibits the disturbance, destruction, of a nest or egg of a migratory bird with the exception when a permit is issued. Under the current MBR, a permit cannot be issued for the incidental take of migratory birds caused by the development of the project. The SARA protects all wildlife species at risk listed in Schedule 1 of the Act including aquatic species and migratory birds (including their habitat) found on federal and provincial/territorial lands. MNR shares responsibilities with EC for protecting the habitat of federally listed migratory species.

While the MBCA and the SARA provides protection for many bird species, some birds are under provincial jurisdiction. The Ontario Endangered Species Act (ESA) prohibits willfully killing, injuring or interfering with all species listed under the Act as well as willful destruction or interference with their habitats. The ESA may influence the timing and location of construction activities.

It is not anticipated that an approval from Environment Canada will be required.

# 1.4.4 Transport Canada

An Aeronautical Obstruction Clearance Form, detailing the lighting requirements was submitted to Transport Canada for evaluation. Transport Canada deemed the lighting proposal to be acceptable. Notification to Transport Canada 10 days prior to the commencement of construction activities is required.

The connection line crosses a railway line operated by Canadian National Railway. No formal approvals from Transport Canada will be required however agreements between Canadian National Railway and the Proponent will be necessary. Under the Canadian Transportation Act (CTA) the Proponent will be required to reach a negotiated agreement with the railway covering construction and maintenance issues, including costs.

# 1.5 REA Report Requirements

The Renewable Energy Application process requires that the Project Description Report speak to a number of outlined topics, as detailed in Table 2.

**Table 2: REA Project Description Report Requirements** 

Requirement	Completed	Section
Any energy sources to be used to generate electricity at the renewable energy generation facility.	Yes	1.1
The facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.	Yes	1.1 Table 1
If applicable, the class of the renewable energy generation facility.	Yes	1.1
The activities that will be engaged in as part of the renewable energy project.	Yes	2.2
The name plate capacity of the renewable energy generation facility.	Yes	1.1
The ownership of the land on which the project location is to be situated	Yes	2.3
If the person proposing to engage in the project does not own the land on which the project location is to be situated, a description of the permissions that are required to access the land and whether they have been obtained.	Yes	2.3 Table 6
Any negative environmental effects that may result from engaging in the project.	Yes	3
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.	Yes	4

# 2. PROJECT INFORMATION

The proponent's wind energy generation project's purpose is to generate clean energy from wind and make it available to Ontario's electricity grid. The project is participating under Ontario's Feed-in Tariff (FIT) program and currently holds a conditional FIT contract. The FIT program is part of Ontario's Green Energy and Economy Act. Project highlights are below:

- Proponent: Ernestown Windpark Inc., as general partner of Ernestown Windpark LP
- Technology Type: Wind Energy
- Class 4 Wind Facility no contact with surface water or wetland; ≥102 dB
- Number of Wind Turbine Generators: 5
- Nameplate Capacity: 10 MW

The Study Area is shown in Figure 1: Site Location Map. Wind will be the energy source used for this facility. The project has taken over 12 months of wind data through the use of a MET tower located adjacent to the project study area and has deemed the wind source viable.

# 2.1 Project Components

The Ernestown Wind Park will be made up of five (5) Enercon E92 wind turbine generators (WTG), access roads and crane pads, transformers, collector system, power lines, a switching station, storage facilities, and ancillary infrastructure. The project will be situated on approximately 463 hectares, with an estimated footprint of 18 hectares,

# 2.1.1 Wind Turbine Information

Most modern utility scale wind turbines consist of three components: 1) the tower section which sits on a foundation, 2) a generator situated on top of the tower and housed in the nacelle, and 3) a three bladed rotor. The tower section is made of tubular steel. The blades are made of fibre-glass or carbon fibre, and come equipped with a variable pitch system to optimize energy output. Blades can also have integrated lighting protection by the presence of a thin copper wire running from the tip to the hub, and down the tower to the ground. The specifications of the wind turbines can be seen in Table 1.

An anemometer at the top of the turbine measures wind, and a yawing mechanism allows the turbine to slowly turn toward the wind to maximize energy production. Turbines have an effective operating wind speed range, defined by the cut-in and cut-out wind speed. Beyond the cut-out wind speed, the turbines automatically stop. The turbines have a dedicated telecommunication link via satellite, telephone, or fibre-optic allowing for Supervisory Control and Data Acquisition (SCADA) monitoring at a remote control center.

# 2.1.2 Associated Facilities & Equipment

- Concrete Foundations
- Gravel Access Roads
- Graveled Laydown areas, Crane Assembly Areas and Crane Pads
- 44kV Collector System
- 44kV Aboveground Electrical Line
- Switching Station Yard
- Below Ground Communications Line
- Construction of new entrance off Millhaven Road

# 2.1.3 Temporary Structures

In support of construction activities at the Ernestown Wind Park, a staging location will be required. This area will be a temporary and is depicted in Figure 1. All other infrastructure related to the Project is intended to remain for the entire lifecycle of the project.

# 2.2 Project Activities

# 2.2.1 Regulated Activities

#### Construction

The Project requires the installation of five (5) Enercon E 92 2.3 MW turbines modified to operate at 2MW. Step up transformers mounted to a concrete pad at the base of each turbine, will be connected by above ground \collector lines. The collector lines will travel along access roads to a new switching station located north of Taylor Kidd Boulevard. The switching station will facilitate the electrical connection of the Project to the Hydro One Networks Inc. (HONI) distribution system, as show in Figure 1.

The Project will require construction of ancillary components such as access roads, crane pads, laydown areas and crane assembly areas. No municipal roadway improvements will be required to facilitate delivery of project components to the project site.

The Enercon E92 is a pitch regulated upwind turbine; the major components such as the generator, converter, and braking system are located on top of the tower in the nacelle. Sensors within the nacelle communicate with operations software (Supervisory Control and Data Acquisition (SCADA) system) which controls the operations and direction of the turbine. Through this set up the turbine will follow the wind direction, control the pitch and speed of the blades automatically; it will also inform the turbine when conditions require the system to shut down. To facilitate remote monitoring and operation of the facility, fibre optic cables will be installed and will run along with the underground and overhead collector system. The nacelle and blades of each turbine will sit atop a 98 metre tower, supported by the construction of a concrete foundation. It is estimated that each foundation will be up to 3m deep and 18m in diameter. Each foundation will be designed according to the site conditions at each turbine location.

The wind turbine will generate power at 400 kV, and will be transformed by the transformers to 44kV. In order to connect to the HONI (Hydro One Networks Inc.) distribution system the voltage must be transformed upwards to 44kV, which is the voltage of the circuit the Project will connect to. An above ground collector line will deliver electricity from each turbine to a new switching station where it will connect with the HONI system.

The above ground line will require the installation of new wooden poles with 60-100m spacing, an approximate height of 13.1 metres and a wire height of 7 metres. Installation of these new poles will require holes to be augured; after which poles will be inserted, leveled and then the holes will be backfilled using the substrate which was extracted during auguring, the area will then be compacted.

The switching station will be located west of Turbine 5, on a 12m x 24m fenced gravel pad with a small driveway. A diagram of the substation and overhead and underground electrical line can be found in Figure 1.

More information on Project construction can be found in the *Ernestown Wind Park: Construction Plan Report*.

#### **Operation**

The Facility operations plan will be confirmed by the turbine manufacturer prior to turbine delivery. What follows is a general plan for operational monitoring and maintenance which will be supplemented by specific operations required by the manufacturer.

Daily Operations & Monitoring Activities: The project will be monitored remotely 24 hours a day through the SCADA system which will monitor wind speed and direction, voltage, vibration, status of the internal components, generator and bearing temperatures. This system will also control when the wind turbines operate and shut down based on internal or weather conditions. Sensors on the turbine nacelle will measure wind speed, direction and temperature. As a minimum, one site visit will occur weekly, during this site visit the operator will visually inspect the turbines for any damage and make note of any unusual or excessive noise. An inspection log will be kept which will record dates and times of the inspections. Site inspections will be used in conjunction with the prescribed timing of routine maintenance activities to initiate repairs as needed. In the event a turbine or component is found to be operating outside the range specified by the equipment supplier repairs will be initiated as recommended by the manufacturer.

**Scheduled Maintenance:** Scheduled maintenance will include a detailed inspection of the nacelle, blades, rotor, tower, and other components related to the project including the switching station. A crane will only be required for major repairs. In addition to annual maintenance, between years 7 and 10 a major overhaul of some turbine components is anticipated.

Unscheduled Maintenance: As inspections and scheduled maintenance recommend replacement of components repair crews will be dispatched to the site. Maintenance can include minor components such as small electronic parts or major components. Some large components may require mobilization of a crane to the site.

More information on Project operations can be found in the *Ernestown Wind Park: Design and Operations Report*.

# **Decommissioning**

**Probable Future Site Use:** The project has been awarded a 20 year power purchase agreement under the FIT program by the Ontario Power Authority (OPA). After the 20 year FIT Contract expires the project may apply to the FIT program to have the Project re-powered which includes upgrading or replacing the turbines and other components with a newer technology to allow continued operation of the wind facility. This process would require additional permitting and approvals. Should re-powering not be an available or viable option, the project will be decommissioned and the proponent will cease operation and the project location would return to agricultural use.

Decommissioning During Construction (Abandonment of Project): While it is very unlikely that the Project would require decommissioning or be abandoned during the construction phase, due to the large amount of investment required by the FIT Program, the project could be decommissioned at any point in the construction process without incurring additional environmental impacts as described under the report section "Procedures for Decommissioning After Ceasing Operations". Additionally, landowner commitments as defined in pre-existing legal agreements will be honored.

Procedures for Decommissioning After Ceasing Operations: Should decommissioning become necessary the site will be restored by the proponent to a level similar to the pre development condition. Any decommissioning activities will commence within one year of the FIT Contract expiration date and involve removal of above-ground and below-ground structures to a depth of at least 1.0 metre and restoration of topsoil and vegetation cover at the site. Above-ground structures include turbines, transformers, associated laydown areas, access roads, above ground electrical connection lines and the switching station. Below-ground structures include turbine foundations, a concrete slab for the switching station and all electrical and communications lines.

The following sections will outline the decommissioning and restoration activities recommended to restore the project site back to a level similar to the pre development condition.

More information on Project decommissioning can be found in the *Ernestown Wind Park: Decommissioning Report*.

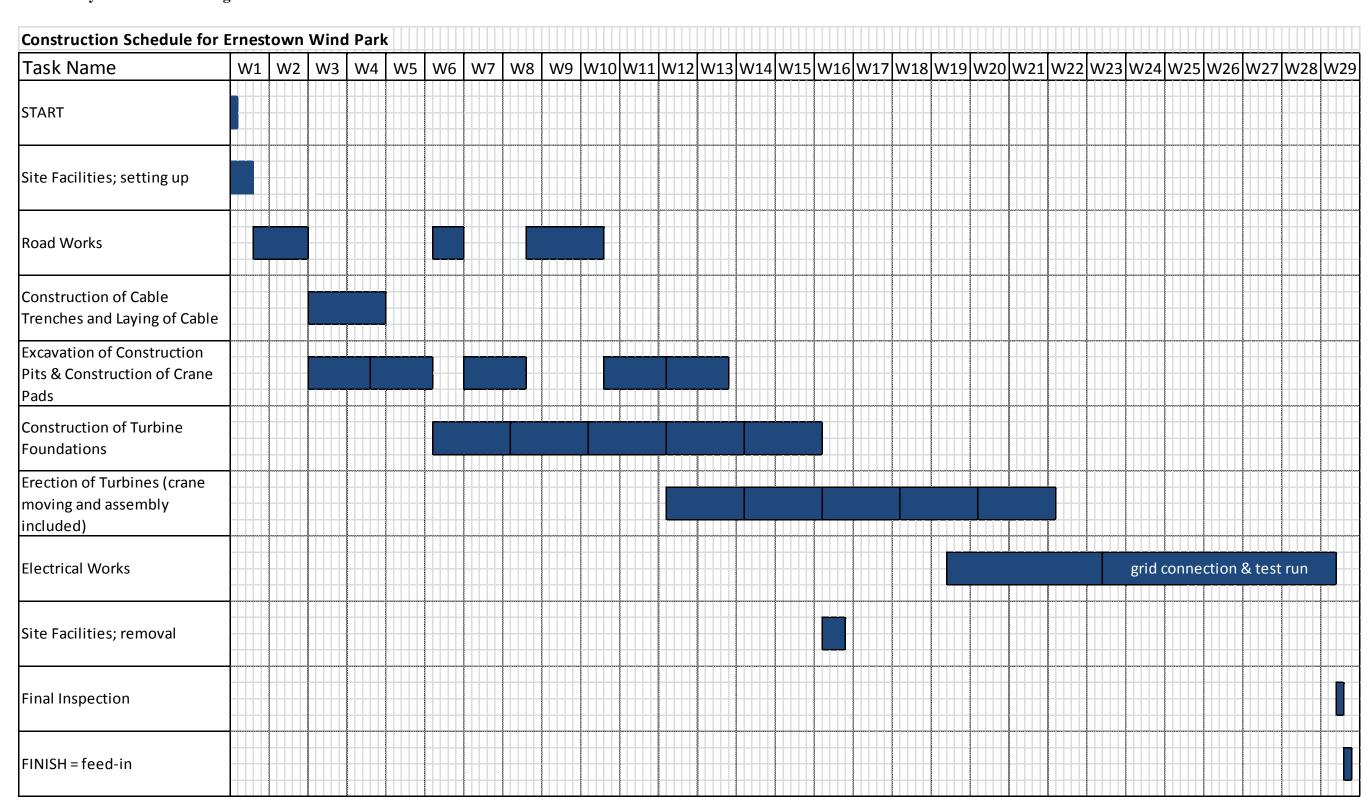
# 2.2.2 Facility Phases and Timing

The proposed wind facility requires a multi-year development timeline and consultation with many stakeholders.

**Table 3: Anticipated Project Activities Timing** 

	Date
Milestone	(Future Dates are Approximate)
Initiate Public REA Process	May 29 & 31, 2010; June 3 & 10, 2010
REA Technical Studies	September 2010 – September 2012
Public Open House #1	June 29 & 30, 2010
Draft REA Reports to the Public	July 18 2012
Public Open House #2	September 11 & 18 2012
REA Submission	October 2012
REA Approval	Early Spring 2013
Start of Construction:	Spring 2013
Commercial Operation	Fall 2013
Repowering/Decommissioning	Fall 2033

**Table 4: Facility Phases and Timing** 



## 2.2.3 *Wastes*

**Construction:** The construction of the Project will require the disposal of wastes brought onto the site such as equipment packaging and scraps of construction materials. These items will be managed in accordance with provincial waste regulations. Sanitary sewage from portable toilets will be disposed offsite by a licensed contractor.

During construction topsoil and excavated substrate will be stored on site in designated storage piles, the location of which will be confirmed by the construction contractor prior to construction and will conform to recommendations provided within the Project's Environmental Impact Statement. This material will be reused in site rehabilitation following construction. Where possible this wood waste will be provided to the participating landowners for personal uses. Excess wood waste will be disposed of in an appropriate MOE approved off-site facility. All fuels and lubricants will be transported to and from site in pick-up trucks or in appropriate delivery vehicles.

*Operations:* Wastes will be created as a result of scheduled and unscheduled maintenance and periodic parts replacement. Lubricants, packaging products, electrical wiring and component parts are expected to be the types of waste byproducts produced as a result of these activities. There will be no on site storage of any waste materials. All waste will be disposed of in an appropriate MOE registered facility. Any metal items will be taken to an appropriate scrap and salvage facility for recycling. The continued operations of the project will not require any water takings or sewage works.

**Decommissioning:** All waste generated during decommissioning stage will be disposed according to the regulatory requirements at the time of disposal. Turbine components cut in pieces and removed electrical connection cables will be recycled at the proper salvage facility. Construction and demolition materials (e.g., concrete, wood, plastic, etc.) and gravel used for access roads will be delivered for recycling to a licensed facility or disposed at the local landfill. No lubricants will be removed from heavy machinery on site.

# 2.2.4 Water-Taking

The proposed wind project resides entirely on privately held lands. No Crown lands are located within the project study area.

# 2.3 Land Ownership

The proposed wind project resides entirely on privately held lands. No Crown lands are located within the project study area.

**Table 5: Wind Turbine Coordinates** 

Turbine ID	Easting	Northing
Turbine 1	362573	4899981
Turbine 2	361968	4899586
Turbine 3	362633	4898610
Turbine 4	363041	4897871
Turbine 5	362747	4897742

The Proponent has entered into the following types of agreements for land access:

- Option to lease
- Lease
- License
- Easements

These agreements grant the proponent rights to investigate, develop, construct, operate, maintain and decommission assets and facilities that are part of the project.

**Table 6: Land Use Agreements** 

PIN	Access Rights Description	Obtained
45129-0046	Option to Lease	Yes
45129-0049	Option to Lease	Yes
45129-0054	Option to Lease	Yes
45129-0055	Option to Lease	Yes
45129-0145	Option to Lease	Yes
45129-0146	Option to Lease	Yes
45129-0049, -0046	Easement Encroachment Consent	Yes
45129-0014, -0144	Land Agreement	Yes
45129-0166	Lease	Yes
45129-0136	Lease	Yes
45129-0167	Lease	Yes
45129-0048	Land Agreement	Yes
45129-0144	Land Agreement	Yes

# 3. DESCRIPTION OF ENVIRONMENTAL EFFECTS

Best efforts are being made to ensure minimal environmental impact of the proposed wind facility. Based on a preliminary records review, the proponent does not expect significant environmental impact from the construction and operation of the wind facility.

# 3.1 Heritage and Archaeological Resources

A Cultural Heritage Assessment is a requirement of the REA Application for a Class 4 Wind Facility. This assessment composes of two component parts: a Heritage Assessment which looks at built structures and other features of cultural or heritage significance such as heritage buildings and an Archaeological Assessment which looks for features of archaeological significance within the study area. These two components are discussed further below.

# 3.1.1 Results of Heritage Assessment

AMICK Consultants Limited was engaged by the proponent to undertake a Cultural Heritage Evaluation of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork on 1 September 2010. This study included a field reconnaissance of the affected lands and adjacent lands as well as documentary research. The study area was subject to reconnaissance and photographic documentation on 17 September 2010.

The Ontario Ministry of Tourism, Culture and Sport approved the report with revisions in 2012. On July 1, 2012, subsequent to MTCS approval, Ontario Regulation 359/09 detailing the Renewable Energy Approval process was amended. The report has been likewise amended to reflect changes regarding cultural heritage to the approvals process. Specifically the REA Checklist for cultural heritage has been appended to this report and a statement has been added to the front of the report describing the qualifications of Michael Henry, the primary investigator for AMICK Consultants Limited on this project. As a result of the study, it has been determined that there are no cultural heritage features within the proposed project area properties or on any properties adjacent to these lands. There are no further concerns with respect to Cultural Heritage resources.

# 3.1.2 Results of Archaeology Assessment

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 and 2 Archaeological Assessment of the study area. This assessment was completed in December of 2010 and recommended that a Stage 2 assessment be completed.

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 2 Archaeological Assessment of lands potentially affected by the proposed undertaking. The original Stage 2 assessment was completed in December 2011, however due to project changes and updates subsequent addendums were completed in November 2011, March 2012 and August 2012. The entirety of the study area was subject to reconnaissance, photographic documentation and physical assessment during these study periods consisting of test pit survey at an interval of 5 metres between individual test pits where possible due to low-lying and wet areas, exposed bedrock, and woodlot density and high intensity pedestrian survey at an interval of 5 metres between individual transects. Those portions of the property which did not consist of previous disturbance or existing structures were subject to reconnaissance, photographic documentation and physical assessment on during the study periods consisting of high-intensity test pit survey at an interval of five metres between individual test pits and high intensity pedestrian survey at an interval of five metres between individual transects.

As a result of the physical assessments of the properties, no archaeological resources were encountered. Consequently, it is recommended no further archaeological assessment of the property is required.

It is further recommended that any portion of the study area that has not been subject to Stage 2 Physical Assessment be restricted from any ground altering activity through appropriate zoning and that should the proposed land use for these areas change, a condition requiring Stage 2 Archaeological Assessment be applied.

On March 1, 2012, June 21, 2012, and September 24, 2012 MTCS issued confirmation letters stating that they were satisfied with the assessment carried out on the project location. This correspondence can be found in the Appendix C

# 3.2 Natural Heritage Resources

A detailed assessment of the natural habitat within and adjacent to the proposed Ernestown Wind Park was performed by M.K. Ince and Associates Ltd.

throughout June and July 2012. The assessment included a Records Review, Site Investigation, Evaluation of Significance and Environmental Impact Study.

The results of this assessment found 41 natural features that were determined to be significant within 120m of the Project location, these consisted of wetlands, woodlands, concentration areas for raptors, bats, migratory butterflies, migratory birds, rare vegetation communities, habitat for species of conservation concern and generalized significant wildlife habitat. Additionally it was found that construction will occur within 16 significant features, many of which will require preconstruction surveys to evaluate significance. All features, including those features requiring preconstruction surveys have been mitigated for negative impacts.

It is anticipated that implementation of the mitigation and monitoring measures outlined in the *Ernestown Wind Park Natural Heritage Environmental Impact Study Report*, in addition to those included in the *Construction Plan Report* and the *Environmental Effects Monitoring Plan* within the *Design and Operations Report* will minimize or prevent negative environmental impacts on the natural environment. Following the restoration of natural features, at the end of the project (after decommissioning and re-vegetation), no residual impacts are anticipated.

Further information on the findings of this report can be found in the *Ernestown Wind Park Natural Heritage Assessment*.

# 3.3 Waterbodies

A detailed assessment of the water bodies within and adjacent to the proposed Ernestown Wind Park was performed by M.K. Ince and Associates Ltd. (M.K. Ince). This assessment included a records review, site investigation and a waterbodies impact assessment.

Through the completion of a Records Review and subsequent Site Investigation M.K. Ince identified five waterbodies within 120m of the proposed Project Location, one of which will be crossed at three locations by access roads and overhead collector lines.

Based on these findings a *Water bodies Impact Assessment Report* was prepared to evaluated impacts of the project on those water bodies, and to develop measures to mitigate such impacts. The *Water Bodies Impact Assessment Report* concluded that after implementation of the mitigation measures contained in the report and in the Construction Plan Report and the Design and Operations Report, no significant net effects on the identified water bodies are anticipated.

Further information can be found in Appendix 2 of the *Ernestown Wind Park Design and Operations Report* in the *Ernestown Wind Park: Water Assssment Report & Ernestown Wind Park: Water Bodies Impact Assessment Report*.

# 3.4 Air, Odour, Dust

Operation of the Project will provide a source of renewable energy without the associated air emissions of fossil fuel electricity generation. Localized air quality impacts associated with construction of the project will largely consist of fugitive dust emissions created by road traffic and land clearing activities. These emissions will be temporary in nature and will be mitigated through the implementation of control plans. Minor quantities of vehicle generated air emissions from the construction equipment will also be generated.

The construction plan will include mitigating measures for air, dust and odour effects. Temporary dust and emissions from construction vehicles are expected near the construction zone. All vehicles used for construction will be inspected and required to be in compliance with the Ontario Ministry of the Environment and Ontario Ministry of Transportation's emissions standards. Strict adherence to these standards will limit nitrogen dioxide, sulphur dioxide, and other greenhouse gas emissions to within acceptable levels. Dust will be suppressed by water spray within the construction area and access roads used by construction vehicles. Effects are expected to be localized, temporary, and minimal.

## 3.5 Noise

The project will generate noise during construction and operation. Construction related noise will be temporary and efforts will be made to keep Modification for Curtailment of the ENERCON E-92 Wind Energy Converter (WEC).

The basic electrical design is identical for all ENERCON WECs. The hub of an ENERCON WEC is directly, i.e. without an intermediate gearbox, connected to the rotor of a multi-pole, field-excited annular generator. The variable frequency Alternating Current (AC) output of the annular generator's stator terminals is connected to the grid through a full-scale power converter. The latter consists of a rectifier, a Direct Current (DC) link and multiple inverters, the number of which depends on the rated active power output and the required reactive power capability for the respective WEC. Therefore, the annular generator is completely decoupled from the power system allowing a wide operating speed range. The electrical performance of an ENERCON WEC when connected to the grid is defined by its inverters and the associated Flexible AC Transmission System (FACTS). Hence, the power output of an ENERCON WEC can be set to any desired limits up to the design rated capacity.

The three elements of a WEC which govern the active power injection into the grid are (i) active blade pitching, (ii) excitation control of the generator and (iii) ENERCON FACTS control system. In order to curtail a turbine, a maximum power  $P_{max}$  can be set within the ENERCON FACTS control system, leading to a modified power curve. This task is undertaken by ENERCON personnel on site prior to commissioning of the machine. The FACTS control system then interacts and co-ordinates with the blade pitching system, the generation excitation controller and the inverter controller in order to ensure that the modified power curve is followed and the maximum power output does not exceed  $P_{max}$ .

Operating in parallel to the FACTS control system of the WEC, a relay provides redundant protection so that the pre-set value of  $P_{max}$  is not exceeded. The relay ensures any unintended breach of  $P_{max}$  is prevented.

## 3.6 Land Use and Resources

As demonstrated in Loyalist Township's Official Plan (Loyalist, OP 19), the lands residing within the project's study area classified as:

Table 7: Land Use – Study Area

Project Study Area Land Use	
Industrial	
Aggregate	
Agriculture	
Hamlet (small village)	

The primary land use is agriculture, confirmed by a site visit that identified soybeans and corn plantations. An aggregate quarry, hydro corridor, an informal dirt bike trail, railway, and a shooting range also exist within the study area.

The areas adjacent to the project study area (within 300 meters) include the Taylor Kidd Industrial Park, industrial areas, and agricultural areas. There is an environmentally protected zone north east of the study area.

Agriculture lands and industrial lands can operate in conjunction with wind turbines. Studies on the potential effects on the land use and resources were undertaken and discussed in the Natural Heritage Assessment Report. The assessment found that no adverse effects on the environment are anticipated.

## 3.6.1 Residential Areas

The project study area includes nearby homes in order to assess impact. The nearest residential homes are along Millhaven Road. Final turbine locations adhere to and or exceed to the required setbacks from residences as set out in O. Reg 359/09.

## 3.6.2 Telecommunication Networks

A communications impact assessment was prepared by M.K. Ince and Associates Ltd. in April 2011. This report concluded the following:

- Residences are located within the digital and analog television reception consultation zones around the project area. *The CBC/Radio-Canada Involvement and Requirements Concerning Wind Energy Projects* (CBC Guidelines) recommends that a detailed impact analysis be performed if there are any residences within the television reception consultation zones.
- Consultation with select agencies should be carried out.
- If turbines must be placed within the point to point link consultation zones or the land mobile station consultation zone which intersect the project area, consult with the operator of the point to point link or land mobile station.
- Monitor complaints of degraded signal quality related to direct-to-home satellite receivers, over the-air TV receivers and AM/FM radio receivers postconstruction. Issues that arise should be mitigated through movement of the affected receiver or by other means agreed upon by the proponent and the affected party.

#### 3.6.3 Site Contamination

The Project site is in an area of active agricultural use with pasture lands mixed in. There is no known site contamination, and the project is not anticipated to cause any site contamination as a result of construction, operations or decommissioning.

# 3.7 Provincial and Local Infrastructure

# 3.7.1 Local Road Traffic

The transportation of wind turbine towers and components are expected to have a temporary effect on local traffic and roadways during the construction phase. New access roads within the project study area will be privately maintained.

The Transportation Plan is currently being developed with the Loyalist Township and the Lennox & Addington County. The Township and County are being consulted to determine road capacity and potential impact during the construction phase. Buried infrastructure and utilities have been identified and the construction plans have been modified to avoid adverse effects.

# 3.7.2 Local Utilities

The local municipality and local utility providers will continue to be consulted to ensure that the locations of all utilities are known, such that any potential effects throughout construction may be prevented.

# 3.8 Public Health and Safety

The safety of the community surrounding the facility is important, and various policies have been established to ensure the safety of the public. Wind turbines are setback a minimum of 65m from non-participating property lines and 65 meters from right-of-ways for public roads and railways as required by the Renewable Energy Approval requirements. These setbacks will protect the public from any unforeseen events. For more information on public health and safety refer to the Draft Ernestown Wind Park Construction Report and Draft Ernestown Wind Park Design and Operations Report.

## 3.9 Areas Protected under Provincial Plans and Policies

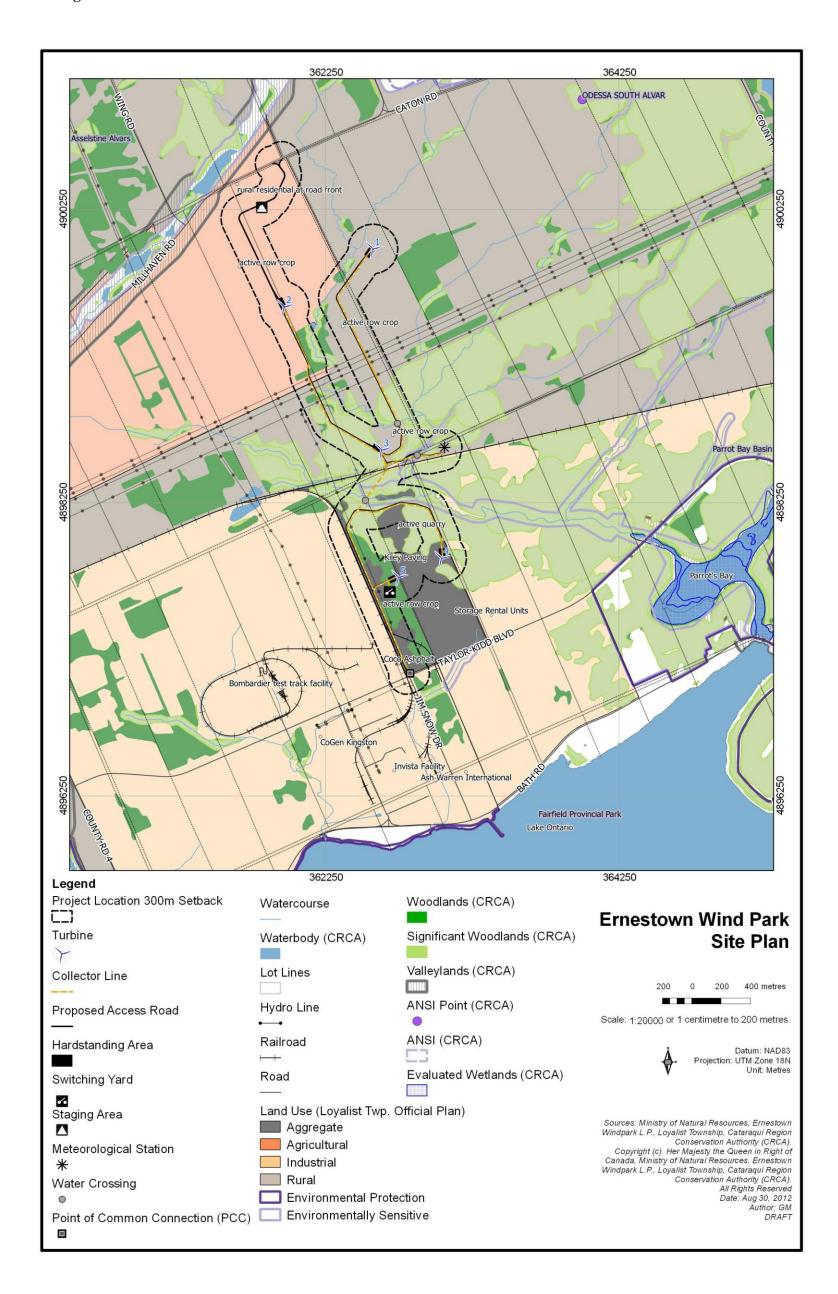
This project is not located in a Protected Countryside or Natural Heritage System as it does not reside in the Greenbelt zone.

The project is not in the Oak Ridge Moraine Conservation Plan Area, the Niagara Escarpment Plan Area, or the Lake Simcoe Watershed Plan Area.

A records review of the study area resulted in no presence of Operating Parks, Provincial Parks, Conservation Areas, Nature Reserves, or area of natural and scientific interest (ANSI).

# 4. PROJECT LOCATION MAP

**Figure 1: Site Location** 



# 5. CONCLUSION

This project description report is a component of the Renewable Energy Approval permitting process and complies with Ontario Regulation 359/09 (O.Reg. 359/09).

# 6. ACKNOWLEDGEMENTS AND REFERENCES

This report was prepared by:

Scott Manser, P.Eng. Senior Project Manager Compliance & Permitting

And

Leah Deveaux Environmental Assessment Specialist Compliance & Permitting

#### **References:**

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ORTECH Environmental	
<b>Project Description</b>	Appendix A
For Ernestown Wind Park	Project No. 91035

# APPENDIX A

Power Curve and Sound Power Level Enercon E92 2.3MW (3 pages)

# Estimated Sound Power Level E-92

Page 1 of 3

# Estimated Sound Power Level of the ENERCON E-92 Operational Mode I (Data Sheet)

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Revision

Revision: 1.1

Department: ENERCON GmbH / Site Assessment

Glossary

WEC means an ENERCON wind energy converter.

WECs means more than one ENERCON wind energy converter.

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	Wo / March 2012 Sro / March 2012		SIAS-04-SPL E-92 OM I 2.3 MW Est Rev1_2-eng-eng.doc 1.1

# Estimated Sound Power Level E-92

Page 2 of 3

# Estimated Sound Power Level for the E-92 with 2.3 MW rated power

in relation to standardized wind speed v <sub>S</sub> at 10 m height								
hub height  V <sub>s</sub> in 10 m height	85	98 m	104 m	108 m	138 m			
5 m/s	99,5 dB(A)	99,9 dB(A)	100,0 dB(A)	100,1 dB(A)	100,5 dB(A)			
6 m/s	102,0 dB(A)	102,2 dB(A)	102,2 dB(A)	102,3 dB(A)	102,6 dB(A)			
7 m/s	103,3 dB(A)	103,4 dB(A)	103,5 dB(A)	103,5 dB(A)	103,7 dB(A)			
8 m/s	104,2 dB(A)	104,4 dB(A)	104,4 dB(A)	104,5 dB(A)	104,7 dB(A)			
9 m/s	105,0 dB(A)							
10 m/s	105,0 dB(A)							
95% rated power	105,0 dB(A)							

in relation to wind speed at hub height									
wind speed at hub height [m/s]	7	8	9	10	11	12	13	14	15
Sound Power Level [dB(A)]	99,5	101,4	102,5	103,6	104,1	104,6	105,0	105,0	105,0

- 1. The relation between the estimated sound power level and the standardized wind speed  $v_{\rm S}$  in 10 m height as shown above is valid on the premise of a logarithmic wind profile with a roughness length of 0.05 m. The relation between the estimated sound power level and the wind speed at hub height applies for all hub heights. During the sound measurements the wind speeds are derived from the power output and the power curve of the WEC.
- 2. A tonal audibility of  $\Delta L_{a,k}$  < 2 dB can be expected over the whole operational range (valid in the near vicinity of the turbine according to IEC 61 400 -11 ed. 2).
- 3. The estimated sound power level values given in the table are valid for the **Operational Mode I**. The respective power curve is the calculated power curve E-92 dated November 2011 (Rev. 1.x).
- 4. Due to the typical measurement uncertainties, if the sound power level is measured according to one of the accepted methods the measured values can differ from the values shown in this document in the range of +/- 1 dB.

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# Estimated Sound Power Level E-92

Page 3 of 3

Accepted measurement methods are:

- a) IEC 61400-11 ed. 2 ("Wind turbine generator systems Part 11: Acoustic noise measurement techniques; Second edition, 2002-12"), and
- b) the FGW-Guidelines ("Technische Richtlinie für Windenergieanlagen Teil 1: Bestimmung der Schallemissionswerte", published by the association "Fördergesellschaft für Windenergie e.V.", 18<sup>th</sup> revision).

If the difference between total noise and background noise during a measurement is less than 6 dB a higher uncertainty must be considered.

- 5. For noise-sensitive sites it is possible to operate the E-92 with reduced rotational speed and reduced rated power during night time. The sound power levels resulting from such operational mode can be provided in a separate document upon request.
- 6. The sound power level of a wind turbine depends on several factors such as but not limited to regular maintenance and day-to-day operation in compliance with the manufacturer's operating instructions. Therefore, this data sheet can not, and is not intended to, constitute an express or implied warranty towards the customer that the E-92 WEC will meet the exact sound power level values as shown in this document at any project specific site.

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ORTECH Environmental	
<b>Project Description</b>	Appendix B
For Ernestown Wind Park	Project No. 91035

# APPENDIX B

Ministry of Natural Resources Confirmation Letter (2 pages)

## Ministry of Natural Resources

Ministère des Richesses naturelles Ontario

Peterborough District Office P.O Box 7000, 300 Water Street 1<sup>st</sup> Floor, South Tower Peterborough, Ontario K9J 8M5 Telephone: (705) 755-2001 Facsimile: (705) 755-3125 Le bureau du district de Peterborough C.P. 7000, 300 rue Water Peterborough, Ontario K9J 8M5 Telephone: (705) 755-2001 Facsimile: (705) 755-3125

October 1, 2012

Ernestown Windpark Inc. 2300 Yonge Street Suite 801, PO Box 2300 Toronto, ON; M4P 1E4

Attention: Ms. Nhung Nguyen

Dear Ms. Nhung Nguyen,

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals regulation (O.Reg.359/09), applicants are required to prepare a natural heritage assessment and environmental impact study using evaluation criteria or procedures established or accepted by the Ministry of Natural Resources (MNR). The regulation requires MNR to confirm that the natural heritage assessment and environmental impact study, including mitigation measures, were prepared using established procedures acceptable to MNR. The MNR's confirmation letter, along with other required project documentation, must be submitted to MOE as part of an application for a Renewable Energy Approval for consideration by MOE in making their Renewable Energy Approval decision.

The Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for Ernestown Windpark Inc.'s, Ernestown Wind Park, submitted October 1, 2012. Based on our review and understanding the aforementioned project is located Lot 27, Concession 2, Loyalist Township.

In accordance with sections 28(2) and 38(2)(b) of the Renewable Energy Approvals regulation, MNR provides the following confirmations following review of the natural heritage assessment reports:

- 1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
- 2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR.
- 3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR.
- 4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
- 5. The MNR confirms that the environmental impact study report has been prepared in accordance with procedures established by the MNR.

In accordance with Section 28(3)(c) and 38(2)(c) of the Renewable Energy Approvals regulation, MNR offers the following comments in respect of the project:

1) The potential for ongoing risk of negative environmental effects has been identified in the natural heritage assessment (NHA). The project and potential effects will be monitored as outlined with the Environmental Impact Study Report to ensure that proposed mitigation strategies are effective and contingency measures have been included for instances where performance objectives are not met.

MNR is providing this confirmation letter based on the review of the information provided in your natural heritage assessment reports. Applicants should be aware of the transition provisions under section 62 of the amended Renewable Energy Approvals regulation and fulfill natural heritage assessment requirements accordingly.

Where specific commitments have been made by the applicant in the natural heritage assessment with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with Appendix D of MNR's NHA Guide, a commitment has been made to complete pre-construction assessment of habitat use for significant wildlife habitats assumed to be present within the project location. MNR has reviewed and confirmed the assessment methods and the range of mitigative options. Pending completion of the assessments and determination of significance, the appropriate mitigation is expected to be implemented, as committed to in the environmental impact study.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the environmental effects monitoring plan and construction plan report. Should any changes be made to the proposed project that would alter the natural heritage assessment, MNR may need to undertake additional review of the natural heritage assessment.

In accordance with section 12(1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

If you wish to discuss any part of the confirmation or additional comments provided, please contact Eric R. Prevost, Renewable Energy Planning Ecologist, at (705) 755-3134.

Sincerely.

Karen Bellamy District Manager

Peterborough District, MNR

cc. Sandra Guido, Environmental Assessment and Approvals Branch, MOE

ORTECH Environmental	
<b>Project Description</b>	Appendix C
For Ernestown Wind Park	Project No. 91035

# APPENDIX C

Correspondence with MTCS (17 pages)

### **Ministry of Tourism and Culture**

Culture Programs Unit Programs and Services Branch Culture Division 435 S.James St., Suite 334 Thunder Bay, ON, P7E 6S7 Telephone: 807 475-1632 Facsimile: 807 475-1297

andrew.hinshelwood@Ontario.ca

Ministère du Tourisme et de la Culture

Unité des programmes culturels Direction des programmes et des services Division de culture Bureau 334, 435 rue James sud Thunder Bay, ON, P7E 6S7 Téléphone: 807 475-1632

Télécopieur: 807 475-1297



May 17, 2011

Michael Henry Amick Consultants Limited 380 Talbot Street, PO Box 29 Port McNicoll, ON LOK 1R0

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, REVISED: Stage 1 Archaeological Background Research Proposed Ernestown Wind Park Part of Lots 25-27, Concession 1 & Part of Lots 25-28 Concession 2, Township of Ernestown, County of Lennox and Addington Report Date, December 06, 2010, Report Received March 02, 2011 MCL Project Information Form Number P058-652-2010 MCL RIMS Number HD00551

Dear Mr. Henry,

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.\*

The Stage 1 archaeological assessment of the subject property, including a property inspection, the property has been identified as holding archaeological potential. As a result, the report recommends that that the proposed undertaking be preceded by a Stage 2 archaeological assessment. The report further notes that pedestrian survey is the preferred field method for Stage 2, while test pit survey may be completed in areas where

ploughing may not be viable, in conformance with the Standards and Guidelines for Consulting Archaeologists (2011).

Given the above, this Ministry is satisfied that concerns for archaeological planning has been met for the area of this development project as depicted by Figure 5 of the above titled report. Please note that Stage 2 documentation will require additional detailed mapping showing the location of proposed infrastructure, and Lot and Concession information not visible on Figure 5.

Please feel free to contact me with any concerns or questions regarding this letter.

Yours,

Andrew Hinshelwood

Archaeology Review Officer

cc. Archaeological Licensing Office

attinshelwood.

<sup>\*</sup> In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Ministry of Tourism, Culture & Sport Ministère du Tourisme, de la Culture, et du Sport

**Culture Division** Culture Services Unit Programs and Services Branch 401 Bay Street, Suite 1700 Toronto, ON, M7A 0A7 Telephone: 416 314 7137 Facsimile: 416 314 7175

Email: paula.kulpa@ontario.ca

Unité des services culturels Direction des programmes et des services 401, rue Bay, Bureau 1700 Toronto, ON, M7A 0A7 Téléphone: 416 314 7137

Télécopieur: 416 314 7175 Email: paula.kulpa@ontario.ca

Division de culture



February 29, 2012

Greg McQuat Ernestown Windpark Inc. 2300 Yonge Street, Suite 801 PO Box 2300 Toronto, ON M4P 1E4

RE: Colloquial Name of Project: Ernestown Wind Park

Location: Township of Ernestown, County of Lennox and Addington

**OPA Reference Numbers: FIT-F3EQ1EC** 

MTCS DPR file no.: PLAN-11EA014

Dear Mr. McQuat:

This letter constitutes the Ministry of Tourism, Culture and Sport's written comments as required by s. 23(3)(a) of O. Reg. 359/09 under the Environmental Protection Act regarding heritage assessments undertaken for the above projects.

Based on the information contained in the revised report submitted for this project, the Ministry is satisfied with the heritage assessment. Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the heritage assessment report.

The revised *Cultural Heritage Assessment of the Proposed Ernestown Wind Park* (February 2012) recommends the following:

# 7.0 CONCLUSIONS

The study area contains a barn, a section of the Canadian National Railway, a hydro corridor as well as a quarry. There are no structures greater than 40 years old located within the study area. The barn, section of the Canadian National Railway, hydro corridor and quarry are not determined to be heritage resources because based on the finding of this study they do not meet the criteria set out in O. Reg. 9/06.

There are no protected properties of any type as outlined in Section 19, O. Reg. 359/09 at the project location or on a property that abuts the parcel of land the project is located on. It is recommended that there is no requirement for a Heritage Impact Assessment (HIA).

The Ministry is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the Ontario *Heritage Act*. Also, this letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

# Paula Kulpa

Team Lead – Land Use Planning (A)

cc. Michael Henry
AMICK Consultants Limited

Sarah MacKinnon AMICK Consultants Limited

Chris Schiller, Manager Culture Services Unit, Ministry of Tourism, Culture and Sport

<sup>\*</sup> In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Culture Programs Unit Programs and Services Branch Culture Division 435 S. James St., Suite 334 Thunder Bay, ON, P7E 6S7 Telephone: 807-475-1632 Facsimile: 807-475-1291

### Ministère du Tourisme, de la Culture et du Sport

Unité des programmes culturels Direction des programmes et des services Division de culture 435 rue James sud, Bureau 334 Thunder Bay, ON, P7E 6S7 Téléphone: 807-475-1632 Télécopieur: 807-4751291



Email: andrew.hinshelwood@Ontario .ca

March 1, 2012

Mike Henry Amick Consultants Limited 380 Talbot St., PO Box 29 Port McNicoll, ON LOK 1R0

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, REVISED: Stage 2 Archaeological Assessment of Ernestown Wind Park Part of Lots 25-27, Concession 1 & Part of Lots 25-28, Cocnession 2, Township of Ernestown, County of Lennox and Addington. Revised report dated December 7, 2011, received by MTC Toronto Office on December 22, 2011.

MTC Project Information Form Number P058-707-2010 MTC RIMS Number HD00551

Dear Mike,

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.\*

This report was subjected to a review that focused specifically on concerns for archaeological resources and/or sites in relation to the outcomes and recommendations of the report. This focused review does not alter or affect your obligation as the licensee to ensure that all reports submitted meet the Ministry technical guidelines and terms and conditions of licence.

As the result of our review, this Ministry accepts the above titled report into the Ontario Public Register of Archaeological Reports. The report indicates that no archaeological sites were identified, and as such there are no further concerns for the subject property as shown in Figures 4, 5 and 6 of the above titled report. This Ministry concurs with the recommendations.

Please feel free to contact me with any concerns or questions regarding this letter.

Yours,

Andrew Hinshelwood

Archaeology Review Officer

cc. Archaeological Licensing Office

attinshelwood.

<sup>\*</sup> In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Culture Programs Unit Programs and Services Branch Culture Division 435 S. James St., Suite 334 Thunder Bay, ON, P7E 6S7 Telephone: 807-475-1632 Facsimile: 807-475-1291

### Ministère du Tourisme, de la Culture et du Sport

Unité des programmes culturels Direction des programmes et des services Division de culture 435 rue James sud, Bureau 334 Thunder Bay, ON, P7E 6S7 Téléphone: 807-475-1632 Télécopieur: 807-4751291



Email: andrew.hinshelwood@Ontario .ca

March 1, 2012

Mike Henry Amick Consultants Limited 380 Talbot St., PO Box 29 Port McNicoll, ON LOK 1R0

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, Stage 2 Archaeological Assessment Ernestown Wind Park Additional Lands Part of Lots 25 & 26, Concession 1 and Part of Lot 26, Concession 2, Township of Ernestown, County of Lennox and Addington. Report dated December 6, 2011, received by MTC Toronto Office on December 22, 2011.

MTC Project Information Form Number P058-807-2010 MTC RIMS Number HD00551

Dear Mike.

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 *Standards and Guidelines for Consultant Archaeologists* set by the Ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.\*

The report recommends the following:

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) Make recommendations regarding the potential for the property, as follows:
  - a. if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any

- exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.
- b. if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.
- 2) Recommend appropriate Stage 2 assessment strategies.

The study area has been identified as an area of archaeological potential.

Under Section 7.8.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 139) the recommendations to be made as a result of a Stage 2 Physical Assessment are described.

- 1) For each archaeological site, provide a statement of the following:
  - a. Borden number or other identifying number
  - b. Whether or not it is of further cultural heritage value or interest
  - c. Where it is of further cultural heritage value or interest, appropriate Stage 3 assessment strategies.
- 2) Make recommendations only regarding archaeological matters. Recommendations regarding built heritage or cultural heritage landscapes should not be included.
- 3) If the Stage 2 survey did not identify any archaeological sites requiring further assessment or mitigation of impacts, recommend that no further archaeological assessment of the property be required.

As a result of the physical assessment of the property, no archaeological resources were encountered. Consequently, it is recommended no further archaeological assessment of the property is required.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment is consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report will be entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Please feel free to contact me with any concerns or questions regarding this letter.

Yours,

Andrew Hinshelwood

Archaeology Review Officer

cc. Archaeological Licensing Office

attiushelwood.

<sup>\*</sup> In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Ministère du Tourisme, de la Culture et du Sport

Culture Programs Unit Programs and Services Branch Culture Division 435 S. James St., Suite 334 Thunder Bay, ON, P7E 6S7 Telephone: 807-475-1632 Facsimile: 807-475-1291 Unité des programmes culturels Direction des programmes et des services Division de culture 435 rue James sud, Bureau 334 Thunder Bay, ON, P7E 6S7 Téléphone: 807-475-1632 Télécopieur: 807-4751291



Email: andrew.hinshelwood@Ontario .ca

March 1, 2012

Ernestown Windpark Inc. 2300 Yonge St., Suite 801, PO Box 2300 Toronto, ON M4P 1E4

Attn.: Gregory McQuat

## **RE:** Ernestown Wind Park

Part of Lots 25-27, Concession 1 & Part of Lots 25-28 Concession 2, Township of Ernestown, County of Lennox and Addington

Additional Lands: Part of Lots 25 & 26, Concession 1 and Part of Lot 26, Concession 2, Township of Ernestown, County of Lennox and Addington.

# FIT # FF3EQ1EC

MTC File HD000551

MTC PIF P058-652-2010 (Stage 1)

P058-707-2010 (Stage 2)

P058-807-2011 (Stage 1–2 Additional Lands)

## Dear Proponent:

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the report(s) you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines or the 2011 Standards and Guidelines for Consultant Archaeologists (whichever apply). Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the report(s).\*

The Archaeological Assessment Report Entitled, Stage 1 Archaeological Background Research Proposed Ernestown Wind Park Part of Lots 25-27, Concession 1 & Part of Lots 25-28 Concession 2, Township of Ernestown, County of Lennox and Addington, dated December 6, 2010, received MTCS Toronto Office, March 2, 2011, recommends the following:

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) Make recommendations regarding the potential for the property, as follows:
  - a. if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.
  - b. if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.
- 2) Recommend appropriate Stage 2 assessment strategies.

The preferred alternative for the proposed undertaking has not been determined as of the date of compiling this report. Accordingly, the assessment of archaeological potential and recommendations stemming from this study area are based on the entire study area.

The study area has been identified as an area of archaeological potential.

- 1) It is therefore recommended that the proposed undertaking be preceded by Stage 2 Physical Assessment.
- 2) Pedestrian survey is the preferred method of Stage Physical Assessment. Stage 2 Physical Assessment by pedestrian methodology must be preceded by ploughing and weathering by rainfall of areas to be assessed by this method. Any portion of any study area which requires Stage 2 Physical Assessment must be assessed by pedestrian methodology if possible.
- 3) Within the study area, high concentrations of exposed bedrock and pockets of surface water across the study area suggest that ploughing of the study area is not feasible or viable even in relatively open areas unobstructed by tree and shrub vegetation cover.
- 4) Within the study area, the assessment of accessible soil will have to be conducted using test pit methodology at an interval of 5 metres between individual test pits.

- 5) Test pits must be dug at a fixed interval of 5 metres across the surface area. Test pits are to measure roughly 30 centimetres in diameter and will be dug at least 5 centimetres into the subsoil beneath the topsoil layer where not refused by shallow depths to bedrock. All excavated earth must be screened through 6 mm wire mesh to ensure that any artifacts contained within the soil matrix are recovered.
- 6) The locations of all finds will be recorded, catalogued and evaluated against MTC criteria to determine if further investigation at any such locations is warranted.

The Archaeological Assessment Report Entitled, REVISED: Stage 2 Archaeological Assessment of Ernestown Wind Park Part of Lots 25-27, Concession 1 & Part of Lots 25-28, Cocnession 2, Township of Ernestown, County of Lennox and Addington. Revised report dated December 7, 2011, received by MTC Toronto Office on December 22, 2011, recommends the following:

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) Make recommendations regarding the potential for the property, as follows:
  - a. if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.
  - b. if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.
- 2) Recommend appropriate Stage 2 assessment strategies.

The study area has been identified as an area of archaeological potential.

1) Within the study area the land consists of mostly ploughable lands and wooded areas, various low-lying and wet areas and two unnamed water courses. The study area is bisected by an existing CP Railway line. The areas not consisting of previous disturbances or low-lying and wet were determined to have high potential and Stage 2 assessment was therefore conducted using the pedestrian and test pit survey methodology. All portions of the property that could be ploughed were ploughed in advance of the assessment and were well weathered. The pedestrian survey was completed on all ploughed lands at an interval of 5 metres in between individual transects. Any areas that could not be ploughed where subject to assessment using the test pit methodology. Test pits were dug at a fixed interval of 5 metres across the surface area. Test pits are to measure roughly 30 centimeters in diameter and were dug at least 5 centimeters into the subsoil beneath the topsoil layer where not refused by shallow depths to bedrock. All excavated earth was screened through 6 mm wire mesh to ensure that any artifacts contained within the soil matrix are recovered.

Under Section 7.8.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 139) the recommendations to be made as a result of a Stage 2 Physical Assessment are described.

- 1) For each archaeological site, provide a statement of the following:
  - a. Borden number or other identifying number
  - b. Whether or not it is of further cultural heritage value or interest
  - c. Where it is of further cultural heritage value or interest, appropriate Stage 3 assessment strategies.
- 2) Make recommendations only regarding archaeological matters. Recommendations regarding built heritage or cultural heritage landscapes should not be included.
- 3) If the Stage 2 survey did not identify any archaeological sites requiring further assessment or mitigation of impacts, recommend that no further archaeological assessment of the property be required.

As a result of the physical assessment of the property, no archaeological resources were encountered. Consequently, it is recommended that the proposed development be considered cleared of any further requirement for archaeological fieldwork. Any current or future condition of development respecting archaeological resources should be considered as addressed.

The Archaeological Assessment Report Entitled, Archaeological Assessment Report Entitled, Stage 2 Archaeological Assessment Ernestown Wind Park Additional Lands Part of Lots 25 & 26, Concession 1 and Part of Lot 26, Concession 2, Township of Ernestown, County of Lennox and Addington. Report dated December 6, 2011, received by MTC Toronto Office on December 22, 2011, recommends the following:

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) Make recommendations regarding the potential for the property, as follows:
  - a. if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.
  - b. if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.
- 2) Recommend appropriate Stage 2 assessment strategies.

The study area has been identified as an area of archaeological potential.

Under Section 7.8.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 139) the recommendations to be made as a result of a Stage 2 Physical Assessment are described.

- 1) For each archaeological site, provide a statement of the following:
  - a. Borden number or other identifying number
  - b. Whether or not it is of further cultural heritage value or interest
  - c. Where it is of further cultural heritage value or interest, appropriate Stage 3 assessment strategies.
- 2) Make recommendations only regarding archaeological matters. Recommendations regarding built heritage or cultural heritage landscapes should not be included.
- 3) If the Stage 2 survey did not identify any archaeological sites requiring further assessment or mitigation of impacts, recommend that no further archaeological assessment of the property be required.

As a result of the physical assessment of the property, no archaeological resources were encountered. Consequently, it is recommended no further archaeological assessment of the property is required.

This letter does not waive any requirements which you may have under the Ontario *Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

Andrew Hinshelwood

Archaeology Review Officer

*cc.* Mike Henry

Amick Consultants Limited 380 Talbot St., PO Box 29

Hinshelwood.

Port McNicoll, ON LOK 1R0

Culture Programs Unit Programs and Services Branch Culture Division 435 S. James St., Suite 334 Thunder Bay, ON, P7E 6S7 Telephone: 807-475-1632 Facsimile: 807-475-1291

### Ministère du Tourisme, de la Culture et du Sport

Unité des programmes culturels Direction des programmes et des services Division de culture 435 rue James sud, Bureau 334 Thunder Bay, ON, P7E 6S7 Téléphone: 807-475-1632 Télécopieur: 807-4751291



Email: andrew.hinshelwood@Ontario .ca

June 21, 2012

Ernestown Windpark Inc. 2300 Yonge St., Suite 801, PO Box 2300 Toronto, ON M4P 1E4

Attn.: G. McQuat

### **RE:** Ernestown Additional Lands

Stage 2 Archaeological Assessment, Ernestown Additional Lands, Part of Lots 25 & 26, Concession 1, & Part of Lot 26, Concession 2 (Geographic Township of Ernestown), Town of Ernestown, County of Lennox & Addington.

MTC File HD000551 MTC PIF P058-844-2012

## **Dear Proponent:**

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the report(s) you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines or the 2011 Standards and Guidelines for Consultant Archaeologists (whichever apply). Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the report(s).\*

The Archaeological Assessment Report Entitled, Stage 2 Archaeological Assessment, Ernestown Additional Lands, Part of Lots 25 & 26, Concession 1, & Part of Lot 26, Concession 2 (Geographic Township of Ernestown), Town of Ernestown, County of Lennox & Addington, dated March 30, 2012, received by MTCS Toronto office April 03, 2012., recommends the following:

• As a result of the physical assessment of the property, no archaeological resources were encountered. Consequently, it is recommended no further archaeological assessment of the property is required.

The Ministry is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the Ontario *Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

Andrew Hinshelwood

Archaeology Review Officer

atiushelwood.

cc. Michael Henry, Amick Consultants Ltd. Sandra Guido, MOE, sandra.guido@ontario.ca

<sup>\*</sup> In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Culture Programs Unit Programs and Services Branch Culture Division 435 S. James St., Suite 334 Thunder Bay, ON, P7E 6S7 Telephone: 807-475-1632 Facsimile: 807-475-1291

### Ministère du Tourisme, de la Culture et du Sport

Unité des programmes culturels Direction des programmes et des services Division de culture 435 rue James sud, Bureau 334 Thunder Bay, ON, P7E 6S7 Téléphone: 807-475-1632 Télécopieur: 807-4751291



Email: andrew.hinshelwood@Ontario .ca

September 24, 2012

Mike Henry Amick Consultants Limited 380 Talbot St., PO Box 29 Port McNicoll, ON LOK 1R0

RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, REVISED: Stage 2 Archaeological Assessment, Ernestown Additional Lands, Part of Lots 25, 26 & 27, Concession 1, & Part of Lot 25 & 26, Concession 2 (Geographic Township of Ernestown), Town of Ernestown, County of Lennox & Addington. Report dated August 10, 2012, revised report dated August 31, 2012 and received by MTCS Toronto office September 13, 2012.

MTCS Project Information Form Number P058-871-2012 MTCS RIMS Number HD00551

Dear Mike,

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 *Standards and Guidelines for Consulting Archaeologists* set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.\*

The report documents the Stage 2 archaeological assessment of lands additional to the proposed Ernestown wind farm, as shown in Figures 1, 3-9 of the above titled report, and recommends the following:

• As a result of the physical assessment of the property, no archaeological resources were encountered. Consequently, it is recommended no further archaeological assessment of the property is required.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment is consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report will be entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me. For further guidance on the Standards and Guidelines and the Terms and Conditions for Archaeological Licences please visit the ministry's website <a href="www.ontario.ca\archaeology">www.ontario.ca\archaeology</a>.

Yours.

Andrew Hinshelwood

Archaeology Review Officer

cc. Archaeology Licensing Officer

attinshelwood.

<sup>\*</sup>In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.