Kent Breeze Corporation MacLeod Windmill Project Inc.

KENT BREEZE WIND FARMS

REA Project Description Report MAY 2010



TABLE OF CONTENTS

1.	GENERAL INFORMATION	1
1.1	Name of Project	1
1.2	Project Location	1
1.3	Contacts	2
1.4	Authorizations Required	2
1.5	Federal Involvement	3
2.	PROJECT INFORMATION	3
2.1	Energy Source and Ontario Classification	3
2.2	Project Components	3
2.3	Project Activities	4
2.4	Land Ownership	7
3.	ENVIRONMENTAL EFFECTS	7
3.1	Henite we and Analyzing the state of the second	
	Heritage and Archaeological Resources	7
3.2	Natural Heritage Resources	7 7
3.2 3.3	Natural Heritage Resources Water Bodies and Fish Habitat	7 7 8
3.2 3.3 3.4	Heritage and Archaeological Resources. Natural Heritage Resources Water Bodies and Fish Habitat. Air Quality	7 7 8 9
 3.2 3.3 3.4 3.5 	Heritage and Archaeological Resources Natural Heritage Resources Water Bodies and Fish Habitat Air Quality Noise	7 7 8 9 9
 3.2 3.3 3.4 3.5 3.6 	Heritage and Archaeological Resources Natural Heritage Resources Water Bodies and Fish Habitat Air Quality Noise Land Use and Resources	7 7 9 9 9
 3.2 3.3 3.4 3.5 3.6 3.7 	Heritage and Archaeological Resources. Natural Heritage Resources Water Bodies and Fish Habitat. Air Quality Noise. Land Use and Resources Provincial and Local Infrastructure	7 7 8 9 9 9 11
 3.2 3.3 3.4 3.5 3.6 3.7 3.8 	Heritage and Archaeological Resources. Natural Heritage Resources Water Bodies and Fish Habitat. Air Quality Noise. Land Use and Resources Provincial and Local Infrastructure Public Health and Safety	7 7 8 9 9 9 11
 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 	Heritage and Archaeological Resources. Natural Heritage Resources Water Bodies and Fish Habitat. Air Quality Noise. Land Use and Resources Provincial and Local Infrastructure Public Health and Safety Provincial Plans and Policies.	7 8 9 9 9 9

Appendix 1 - Maps

Appendix 2 – Ministry Letters

1. GENERAL INFORMATION

1.1 Name of Project

Kent Breeze Corporation and MacLeod Windmill Project Inc. are proposing to develop wind energy projects in the northern portion of the Municipality of Chatham-Kent. The proposed development will consist of two individual projects totaling 10MW each, and consisting of 4 individual wind turbines at each project location. The projects are divided based on two individual Renewable Energy Standard Offer Program (RESOP) contracts.

Both projects will be hereafter referred to as the "Kent Breeze Wind Farms".

1.2 Project Location

The projects will be located on approximately 436 hectares of agricultural land. Access roads will be constructed, wind turbines will be erected and electrical cables buried up until the connection point to the Hydro One distribution system. The projects are located in close proximity to each other as follows:

- Project 1 Part Lots 8-11, Concession 1, in the geographic Township of Camden, in the Municipality of Chatham-Kent, on the south side of Smoke Line, east of Huffs Side Road; and
- Project 2 Part Lots 4-6, Concession 1 & 2, in the geographic Township of Camden, in the Municipality of Chatham-Kent, on the north and south side of Smoke Line, west of Huffs Side Road.



1.3 Contacts

1.3.1 NAME OF APPLICANTS

The applicants are Kent Breeze Corporation and MacLeod Windmill Project Inc., which share the same owners, located within the Municipality of Chatham-Kent. The principal contact for the applicants is:

Brad West

Suncor Energy Services Inc. Manager, Business Development, Wind P.O. Box 38 112 - 4th Avenue S.W. Calgary, AB T2P 2V5 Tel: 403-205-6744 Fax: 403-269-6223 Email: brwest@suncor.com

The principal project consultant for the applicants is:

Derek Dudek, MCIP, RPP

REA Co-ordinator / Planner IBI Group #203 – 350 Oxford Street West LONDON, ON. N6H 1T3 Telephone: (519) 472-7328 Fax: (519) 472-9354 Email: <u>ddudek@ibigroup.com</u>

1.4 Authorizations Required

In addition to REA approval, the projects will require local approvals in the form of municipal building permits, a Saint Clair River Conservation Authority permit for drilling under the Shaw-Ferguson Drain, permits from the Canadian National Railway to cross their right-of-way, and letters of clearance from the Ministry of Natural Resources and Ministry of Culture. Obstacle clearance forms have been submitted to Navigation Canada and Transport Canada who have determined the lighting requirements of the turbines. The Lower Thames Valley Conservation Authority (LTVCA) requires no permit but does require notice and an observer to be present for drain crossings. Transportation permits are required for shipping all major components to site. These permits are the responsibility of the turbine supplier under the Turbine Supply Agreement, but the proponent has initiated this process with the municipality on their behalf. Anticipated shipping dates for turbine equipment are between Dec. 15, 2010 and Feb. 15, 2011. These dates will be confirmed with MTO and the proponent will ensure permits are received prior to shipping.

1.5 Federal Involvement

The projects are subject to the Federal EA process administered by the Canadian Environmental Assessment Agency in order to obtain <u>ecoEnergy for Renewable Power</u> program funding. The projects have completed the Notice of Project Application (NPA) and are currently fulfilling the Technical Project Information (TPI) and EA portions of the program. As required by eco-ENERGY, these will be completed prior to construction beginning. It is anticipated that a Contribution Agreement could be signed sometime in February, 2011. The main contact for the project is:

Jack Jensen Technical Advisor, ecoENERGY for Renewable Power Renewable and Electrical Energy Division Natural Resources Canada Tel 613-943-7008 Fax 613-995-8343 jjensen@nrcan.gc.ca

2. PROJECT INFORMATION

2.1 Energy Source and Ontario Classification

The proposed project is a Class 4 wind facility (land based with a sound rating less than 107dBA) which will consist of eight 2.5MW General Electric (GE) 2.5xl wind turbines on 85 metre towers, for a total nameplate capacity of 20MW. Electricity will be generated from the eight wind turbines from the strong winds anticipated at the site. The electricity will be used locally by the communities connected to the local distribution system. Since the electricity is produced from the wind, there are no emissions other than those created from the construction activities. There are no other fuel sources associated with the generation of energy from the projects.

2.2 Project Components

The main physical components of the projects are wind turbine structures; concrete foundations; on-site access roads; underground cabling; crane pads (construction only); two electrical switching stations; and a meteorological testing tower (existing). All project components are illustrated on Map 5 – Project Infrastructure in Appendix 1 to this report.

The electricity generated by each turbine will be transformed to 27.6kV the same voltage as the local distribution system. Thus, there are no electrical transformers or transmission lines associated with either of the projects.

Total lot coverage (ie. the area of land covered by the components outlined above) will be approximately 120,000 m², or 2.8% of the project areas.

Specific details of the proposed wind turbine are as follows:

Make and Model:	GE Energy 2.5xl
Name Plate Capacity:	2.5MW
Total Height:	135 metres
Hub Height above grade:	85 metres
Blade Length / Blade Sweep Area:	50 metres / 7854m ²
Rotational Speeds:	5-14 rpm
Acoustic Emissions Data:	See Technical Specifications Report

2.3 Project Activities

2.3.1 DESCRIPTION OF PHASES

The project includes three phases: construction, operations, and decommissioning. Construction includes the delivery of materials including, heavy machinery, metal re-bar and wiring, which will be stored temporarily at the construction service area and temporary storage area which are shown on Map 6. Temporary office areas will be established within the existing dwelling shown on Map 6. Access roads, underground cabling routes, and turbine staging areas will be cleared of crops and graded for construction to a width of 10 metres. Topsoil will be stripped and stockpiled separately from subsurface soil and kept for remediation activities post construction. Aggregate for the access roads and turbine staging areas will be delivered on-site as required by local firms. A rubber tire backhoe or trenching machine will excavate a trench for underground cabling. Directional drilling will be required under train tracks and under surface drains.

Completion of the roads and underground cabling will provide access for excavating for turbine foundations. Due to the soil conditions at the site it is anticipated that piling will be required at each foundation to anchor the turbines to bedrock located approximately 10 to 15 m below grade. Concrete for the turbine foundations will be delivered and the foundation cap will be secured to the piles. Following curing of the concrete, turbines will be delivered and temporarily laid down adjacent to foundation areas. The length of time for the erection of the wind turbine components is dependent on weather conditions specifically lower wind speeds for safe crane operation. In parallel with the erection of turbines foundations will be poured for up to two switching stations. The switching stations will be delivered to site, installed on the foundations and all underground cabling from the turbines will be terminated there. The switching stations will house only electrical control cabinets and SCADA operating system. Hydro One will install up to two wooden hydro poles to mount a disconnect switch. Hydro One will also connect the facility to their distribution grid. Access Roads will be reduced to 6 metres in width as the final part of construction by removing the

excess gravel from the site and reclaiming the farm land with stockpiled top soil. The remaining roads will be graded with the same slope as the adjacent fields such that surface runoff will not be interrupted.

The operational phase will include electrical generation by the wind turbines. The turbines will be controlled and monitored remotely. The project will maintain a minimum of one full-time employee to co-ordinate ongoing maintenance, emergency response, and public communications. Remote monitoring will include meteorological monitoring as well as monitoring of all operational data of each individual wind turbine. This information will be used to monitor the performance of the machines and to identify maintenance issues early. During the operational phase of the projects, on-site activities will generally be limited mostly to scheduled maintenance. Additional activities that will or may occur during the operational phase includes:

- Periodic movement (weekly monthly) of personnel (1-2 persons) via passenger truck to and from individual turbines along permanent access roads;
- Additional maintenance personnel as required to maintain and/or repair turbines, which may include limited use of heavy trucks and mobile cranes.
- Field monitoring for impacts to bird and bat populations within the first 3 years of operation;
- Tours of the facility for educational purposes;
- Field monitoring of equipment including performance measurements

The decommissioning phase involves the removal of the project from the lands either due to project abandonment, or after the technology has reached its operational lifespan. This phase will involve the following activities:

- Removal of wind turbines, meteorological tower, and switching station from site for salvage;
- Removal of foundations and electrical components for salvage to a ploughing depth suitable for farming purposes (approximately 1.0 metre);
- Internal access road and driveways will be retained for agricultural purposes.

2.3.2 PHASING AND TIMING

It is expected that project construction will take approximately six (6) months to complete. Operation of the projects will last approximately 20 years with the expectation to possibly renew / refit the project based on future policy regimes. Otherwise, the project would be decommissioned which would take approximately three (3) months.

Construction of the project will begin as soon as building permits are granted by the Municipality of Chatham-Kent. Our expected construction commencement date will be late Summer 2010.

There are currently no plans to expand the project beyond its current scope.

2.3.3 WASTES AND EMISSIONS

Waste and emissions associated with the construction phase will involve typical construction noise, dust, vehicular emissions, and lubricating fluids associated with typical heavy construction activities. Waste and emissions associated with operations will be limited to vehicular emissions of periodic maintenance vehicles and operational noise associated with the turbines. Waste and emissions associated with the decommissioning phase will involve typical construction noise, dust, vehicular emissions, and handling of lubricating fluids associated with typical heavy construction activities.

2.3.4 HAZARDOUS MATERIALS

Disposal of hazardous wastes will only be required for accidental spills and will be addressed in a manner consistent with Provincial guidelines. More specific details are outlined in the <u>Construction</u> <u>Plan Report</u>, <u>Design and Operations Report</u>, and the <u>Decommissioning Plan Report</u>.

2.3.5 STORM, SEWER AND WATER-TAKING ACTIVITIES

The Projects do not involve the any sewage activities. Storm water at the site runs over ground, permeates into the ground or is diverted by agricultural tile drainage to a network of open and closed municipal drainage ditches. The installation of the wind farm will have very little impact to the existing storm water management as all damaged agricultural drainage tiles will be fixed and turbine access roads will be designed as low profile roads such that surface water can run over them with the natural grade of the land. Water-taking activities will be limited to the construction phase at the turbine foundations and will not exceed 50m³ per day based on the existing soil conditions, depth of the water table (approximately 5 metres below ground surface), and shallow depth of concrete foundations (approximately 2.5 metres below ground surface) poured for the turbines. The proponent is aware that exceeding 50m³ per day triggers the requirement for an additional permit to take water, and confirms it will not exceed this specified limit as a condition of this REA.

De-watering activities from the foundations will only occur periodically after rain events as surface water accumulates in the excavation. Because dewatering will be kept below 50m³ per day and is only to keep excavations clear of water, and those excavations will have a maximum depth of 2.5m, it is not expected that local water levels, including those for private wells, will be impacted. Since such activities will be temporary in nature, occurring over a 4 month period, after which the

excavations will be filled in, there will not be any permanent impact to water levels. In the unlikely event that local wells are temporarily impacted, the proponent will provide potable water through temporary portable tanks. Water taken from the excavations will be pumped over the surrounding agricultural fields; to prevent silt from entering into drainage ditches, screens will be used at pump inlets and silt bags at the outlets as per the BMP identified in the stormwater management memo.

2.4 Land Ownership

All of the subject lands are owned by one landowner. Leases will be registered for the projects for all infrastructure related to the wind farm.

3. ENVIRONMENTAL EFFECTS

3.1 Heritage and Archaeological Resources

A Stage 1 Archaeological Assessment was undertaken for the projects which indicated that there is a moderate to high potential for pre-contact aboriginal archaeological sites on the subject lands due to the presence of water sources, the level land without areas of steep slope and the moderately drained sandy soils. A <u>Stage 2 Archaeological Assessment</u> (and subsequent <u>Stage 3</u> <u>Archaeological Assessment</u> on two separate locations) was undertaken in the fall of 2009. The result of both assessments was that materials found were of low cultural heritage value and no further assessment was recommended. The Walpole Island First Nation assisted in the Stage 2 fieldwork and has expressed no issues. Clearance from the Ministry of Culture was obtained in writing in a letter dated June 23, 2010 (Appendix 2).

In addition to the archaeological assessments, a <u>Built Heritage and Cultural Landscape Study</u> was undertaken in the fall of 2009. The results of this study were that the location of project components would have no direct impacts on any such heritage resources. Clearance from the Ministry of Culture for this report was obtained in writing in a letter dated June 23, 2010 (Appendix 2).

3.2 Natural Heritage Resources

The project areas consist mainly of open agricultural fields with several municipal drains that will require crossings by access roads and/or underground electrical conduits. There are a number of hedgerows and larger woodlots on the subject lands or adjacent lands.

Background work conducted with respect to the natural heritage resources included a one (1) kilometre study area surrounding the subject lands and indicates the following regarding the proposed projects:

- Possible presence of two significant faunal species (Azure Bluet Damselfly, Eastern Fox Snake) within the study area but located within woodlots that will not be physically altered in any manner by any components of the projects;
- Majority of unnamed tributaries converted into farm drains on subject lands. Further consideration to impacts created where crossings are required. The Lower Thames Valley Conservation Authority and St. Clair Region Conservation Authority has been consulted in connection with this project and will be responsible for granting permits where any water crossings are required.
- Bird studies indicated no large concentrations of staging or breeding areas in the study area
- Bird studies indicated no species of significance ranked S1 to S3;
- Bald eagle nesting location was confirmed as being over 1km south of the project area, which is beyond the 800m tertiary buffer for such nesting locations as described by the Ministry of Natural Resources;
- Vertical distribution of birds observed during spring migration were primarily (93%) identified within 40 metres of ground (ie. below blade swept area);
- Bat research indicated no significant bat habitat and a low site sensitivity rating.

The Ministry of Natural Resources has confirmed the background findings and issued a letter of clearance on June 7, 2010 (Appendix 2).

3.3 Water Bodies and Fish Habitat

Original background studies indicated that the majority of the drains within project area have intermittent flow and improvements or crossings would not have any impact on fish habitat. Where any crossings or construction occur within areas of permanent water flow, further consideration should occur as there is possibility of impact to fish habitat.

Final design indicates that there are no permanent watercourses within the project area that will be impacted by any components of the projects. There are no at-grade water crossings required over any open municipal drains. Two direct drilling operations beneath drains are required for underground cabling and will be constructed within the St. Clair River Conservation Authority's (SCRCA) jurisdiction, where a permit is required. Within the jurisdiction of the Lower Thames Valley Conservation Authority's (LTVCA), 30 days notice is required prior to drilling, and the LTVCA will have a representative on site to supervise the activity. The LTVCA has published a procedure for directional drilling under drains, and the Kent Breeze construction team will follow this procedure. The observer will verify the procedure is followed. The SCRCA and LTVCA have reviewed such crossings with no issues identified.

The conservation authorities act as the representatives for the Department of Fisheries and Oceans. Since the drains being crossed are warm water agricultural drains, they have a low potential for fish habitat. The directional drilling beneath the drains will follow DFO standard operational procedures to avoid impacts on fish habitat.

There are no navigable waterways located on the subject lands. Any waterways running through the project areas are used for the drainage of agricultural fields. The closest navigable waterway is the Thames River located over 600 metres south of the project areas visible in the attached maps. Use of watercrafts on this waterway is limited to light non-motorized recreational boats. The closest recreational fishing grounds are located on the Thames River. There are no commercial or aboriginal fisheries located within the Project Area. The projects will not have an impact on the navigation of the Thames River or to recreational fishing.

3.4 Air Quality

Air emissions, odour, and dust will occur during the construction and decommissioning phase of the project associated with heavy trucks and cranes. Appropriate measures for mitigation will be outlined in the <u>Construction Plan Report</u> and the <u>Decommissioning Plan Report</u>. A wind energy project would expect negligible air emissions, odour, and dust associated with periodic maintenance vehicles during the operational phase of the project.

3.5 Noise

Noise emissions will occur during the construction and decommissioning phase of the project associated with heavy truck traffic and heavy machinery operation. Appropriate measures for mitigation will be outlined in the <u>Construction Plan Report</u> and the <u>Decommissioning Plan Report</u>. Noise emissions during the operational phase will be encountered with the operation of the turbines. Appropriate mitigation measures, namely compliance with applicable setbacks and sound limits are outlined in the <u>Design and Operations Report</u>. A wind energy project would expect negligible noise emissions associated with periodic maintenance vehicles during the operational phase of the project.

3.6 Land Use and Resources

3.6.1 CURRENT AND PAST LAND USES

The subject lands are currently used for agricultural purposes and have been used for such purposes for over 80 years. The majority of the surrounding land uses are agricultural in nature. Agricultural activities are primarily cash crop in nature due to the highly productive soils throughout the region. There is also a large greenhouse operation directly south of the project lands. In

addition, there are a number of non-farm residential lots, generally described as being 4 hectares or less in area that have been severed from farm parcels over the past 40 years.

During initial public consultation, three (3) private unregistered airstrips were identified near the project areas. In each instance, the owners of the airstrips have verbally indicated that the proposed turbine locations will not interfere with typical take-off or landing routes. None of the proposed turbine locations are positioned in line with the axis of any airstrip.

An active railway line runs through the project area in an east-west direction. This rail line is the Canadian Pacific Rail's main expressway between Windsor and Montreal. CPR has been consulted, and has indicated no concerns with proposed turbine locations.

There are no identified mineral, aggregate, or petroleum resources in the project areas.

There is no reason to believe that there is any past contamination of the sites involved in the projects, based on the owner's knowledge of the properties and past history of land use.

3.6.2 PROXIMITY TO FIRST NATIONS RESERVES / LANDS USED BY ABORIGINAL PEOPLES

There are no First Nations Reserves within the study area. In addition, there are no First Nations claims on the project area. The closest First Nations Reserve is the 1285 hectare Moravian of the Thames reserve located 8 kilometres east of the project area along the Thames River. First Nations notified for the projects included:

- Delaware Nation (Moravian of the Thames)
- Bkejwanong Territory (Walpole Island First Nation)
- Munsee-Delaware Nation
- Chippewas of the Thames First Nation
- Oneida Nation of the Thames
- Caldwell First Nation

The Ontario Ministry of Aboriginal Affairs indicated (in a letter dated February 10, 2009 from Pam Wheaton, Director) that the project areas do "not appear to be located in an area where First Nations may have existing or asserted rights that could be impacted by your project", and a list of only two First Nations to contact was provided (Bkejwanong and Delaware Nation).

Bkejwanong has provided verbal comments that they do not have any issues with any environmental impacts of the projects and also sent along observers during the Stage 2 archaeological fieldwork. Full details of consultation with the above-noted First Nations can be found within the <u>Consultation Report</u>.

3.6.3 PROXIMITY TO ENVIRONMENTAL OR CULTURAL SITES

There are no important or designated cultural or natural heritage sites within the project area or study area. The St. Clair Region Conservation Authority owns a woodlot (Huff's Woodlot) immediately adjacent to the subject lands, which is used for woodlot management purposes, and is not a publicly accessible conservation area. The closest turbine to this woodlot is approximately 220 metres away.

3.6.4 PROXIMITY TO RESIDENTIAL AND URBAN AREAS

None of the proposed turbine locations would be located within 550 metres of a noise receptor. In terms of municipally designated settlement areas, the closest turbines would be approximately 1.8 kilometres from the Village of Thamesville, which is located due east of the subject lands.

3.6.5 TELECOMMUNICATIONS

The appropriate agencies associated with radio-communications, radar, and seismo-acoustic monitoring have been consulted as suggested by the Radio Advisory Board of Canada and the Canadian Wind Energy Association with no concerns raised. In addition, the guidelines associated with siting turbines indicate that no such interference should occur based on the required setbacks. Where unexpected interference occurs, there are suitable mitigation measures which may be undertaken to correct situations.

3.7 Provincial and Local Infrastructure

The project will involve the use of municipal roads to deliver equipment and access the subject lands. All necessary upgrades, maintenance, and use of the roads are outlined in a road use agreement between the Municipality of Chatham-Kent and the applicants. This agreement is part of the building permits that are issued by the Municipality. These applications have been submitted and are in reviews between the construction team and municipal staff, The Municipality has not raised any issues with the application submitted for the project. The proponent is committed to working with the municipality to ensure all aspects of the traffic management plan and road use agreement meet their needs, and will remain in contact to update the plan should the municipality require any adjustments through the construction period. The proponent is committed to the safety of the surrounding community as well as its staff and contractors.

Impacts anticipated to local infrastructure include:

- Increased traffic volumes
- Interactions with school bus routes
- Temporary road blockages for large loads (for several minutes at a time)
- Increased wear on gravel roads

Municipal infrastructure that may be impacted include modifications to highway exits and intersections. Impacts include temporarily relocating signage, hydro poles and adding aggregate to roadway shoulders to meet turning radius requirements of delivery vehicles. These temporary modifications will be removed, as required, and the roads returned to their original condition after construction is complete. The transportation route for the wind turbine components has been determined by the wind turbine supplier working with the proponent. Transporting the equipment is part of the turbine supplier's scope of work, as outlined in the Turbine Supply Agreement. Shipping dates are dependent on REA approval and the current planned route may require modifications if shipping is delayed due to part load restrictions on certain roads.

The mitigations planned for traffic and road impacts include:

- Temporary additional signage to direct and advise traffic of construction vehicles
- Advising the local school of the increased construction traffic; the school will also be contacted in advance of anticipated interference with school bus routes to make arrangements to modify the route
- Flag people to control traffic as large trucks enter / leave / back up on municipal roads
- Pilot vehicles for oversized loads
- Pre construction documentation of road condition, post construction remediation, and final review with the municipality for any damage caused.

More details of the traffic impacts are included in the traffic management plan and road use agreement between the Municipality and the proponent, both of which are under review between the two parties. Final approval of the traffic management plan and execution of the Road Use Agreement will occur in conjunction with issuing the building permits, which is anticipated to be in early November, 2010.

In addition to the work with the Municipality outlined above, the Ministry of Transportation will be advised of shipments occurring on provincially regulated highways, and at the time of shipping the carrier will confirm all weights with the Ministry of Transportation. The turbine supplier will subcontract the transportation of the equipment to a carrier agent that specializes in shipping heavy and oversized equipment. The final permit submission to the Ministry of Transportation is anticipated to occur in mid November, with the first piece of turbine equipment to be shipped in mid December. Turbine equipment is expected to be shipped on a continuous basis through to mid February. Should weather cause road bans to be implemented early, remaining shipments will be held until the ban is lifted..

3.8 Public Health and Safety

The potential for risks to public health and safety during the construction and decommissioning phases is present with heavy trucks and machinery moving to and from the site. The potential for risks during the operational phase of any wind project is limited to turbine failure and severe weather situations (ie. falling ice). The potential for incidents is considered minimal based on standard mitigation measures including setbacks required by the Province from sensitive land uses, and the requirements to enter into various protocols with the Municipality related to construction activities and emergency management procedures which are typical for any industrial uses.

3.9 Provincial Plans and Policies

The projects are not subject to any Provincial planning areas including the Greenbelt, Oak Ridge Moraine, Niagara Escarpment, or Lake Simcoe Watershed Plan Area.

J:\20443\10.0 Reports\REA\PTR-1project_description_final2010-03-25.doc\2010-10-19\DD

APPENDIX 1 - MAPS





Macleod Windmill Project









APPENDIX 2 - MINISTRY LETTERS

Ministry of Tourism and Culture Culture Programs Unit Programs & Services Br. 900 Highbury Avenue London, ON N5Y 1A4 Tel: 519-675-6898 Fax: 519-675-7777 e-mail: <u>shari.prowse@ontario.ca</u> June 23, 2010 Ministre du Tourisme et de la Culture Unité des programmes culturels Direction des programmes et des services 900, av. Highbury London, ON N5Y 1A4 Tél: 519-675-6898 Téléc: 519-675-7777 e-mail: shari.prowse@ontario.ca



Mr. Derek Dudek IBI Group 203-350 Oxford Street West London, Ontario N6H 1T3 Email:ddudek@IBIGroup.com

RE: Kent Breeze Wind Farm, Part of Lots 8 and 9, Concession A, Part of Lots 4 to 11, Concession 1, and Part of Lots 5 and 6, Concession 2, Geographic Township of Camden, Municipality of Chatham-Kent, Ontario, RESOP10306, MTC File No. HD00405, P001-420-2008, P001-584-2009, P084-209-2010, P001-595-2009

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 reports 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. Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the Reports.*

The Reports recommend the following:

Stage 1-P001-420-2008

1) Stage 2 archaeological assessment is required for both parcels.

2) Should deeply buried archaeological material be found during construction activities, the Ministry of Culture should be notified immediately (416) 314-7174. In the event that human remains are encountered during construction, the proponent should immediately contact both the Ministry of Culture and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations, (416) 326-8404.

Stage 2-P001-584-2009 and P084-209-2010

The Stage 2 resulted in the identification of two Euro-Canadian historic locations (Location 1 and Location 2). Artifacts dating to the mid to late 19th century were recovered from both locations. Due to the potential heritage value of both locations it is recommended that a Stage 3 archaeological assessment be conducted on Location 1 and Location 2 in order to determine their significance and information potential. The

required Stage 3 assessment should involve the excavation of a series of one-metre test units across the site areas as well as the controlled collections of all surface artifacts. In addition, the 19th century land registry records of these lots should be examined.

Stage 3- P001-595-2009

1) The Stage 3 archaeological assessment of both Locations 1 (AdHm-65) and Location 2 (AdHm-66) resulted in the recovery of primarily late 19th and 20th century cultural material. Due to the limited cultural heritage value of these sites no further archaeological assessment is recommended.

2) Should deeply buried archaeological material be found during construction activities, the Ministry of Culture should be notified immediately (416) 314-7174. In the event that human remains are encountered during construction, the proponent should immediately contact both the Ministry of Culture and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations, (416) 326-8404.

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,

Shari Prowse Archaeology Review Officer

cc. Mr. Jim Wilson and Mr. Adam Hossack, Golder Associates

^{*}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 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 is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Ministry of Tourism and Culture Culture Division Culture Programs Unit Programs and Services Branch 400 University Avenue, 4th floor Toronto, ON, M7A 2R9 Telephone: 416-212-4019 Facsimile: 416-212-1802 Email : Penny.Young@Ontario.ca Ministère du Tourisme et de la Culture Division de culture Unité des programmes culturels Direction des programmes et des services 400, avenue University, 4^e étage Toronto, ON, M7A 2R9 Téléphone: 416-212-4019 Télécopieur: 416-212-1802 Email : Penny.Young@Ontario.ca



June 23, 2010

Mr. Derek Dudek IBI Group 203-350 Oxford Street West, London, ON N6H 1T3

RE: Kent Breeze Wind Farms and MacLeod Wind Mills

Various Lots, Concession A, 1 and 2, Township of Camden, in the Municipality of Chatham-Kent, in the County of Kent

RESOP10306, RESOP13162

MTC file no. 36EA019

Dear Mr. Dudek:

This letter constitutes the Ministry of Tourism and Culture'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 project.

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

The report(s) recommends the following:

9.0 Summary and Recommendations

The study area and project area have been determined to represent one homogenous rural cultural heritage landscape, with no separate or highly sensitive cultural landscapes identified. The construction of the project turbines and associated structure will have a visual impact on the rural cultural heritage landscape of the project and study areas. The land is flat and it is anticipated that the turbines will be prominent, new visual features in the landscape. It is recommended that the visual impact of the two proposed switching stations that are to be located at the intersection of Smoke Line and Huffs Side Road should be minimized with appropriate landscape design, such as massing and screening in order to lessen the impact on the surrounding cultural heritage landscape.

A number of historic structures located within the larger study area, but no direct or indirect on this structure are anticipated. One farmstead is located on an optioned property within the project area

and has been evaluated according to OHA Regulation 9/06 and determined not be a feature of cultural heritage value. Regardless, due to the REA regulations, this farmstead is located along the edge of the 550 metre noise setback and therefore no direct or indirect impacts are anticipated.

The final layout for the proposed turbine locations and associated structures, access roads and underground cables were evaluated with regards to potential direct and indirect impacts to built heritage features and cultural landscapes. No direct or indirect impacts are anticipated.

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,

Penny Young Heritage Planner Programs and Services Branch, MTC

Culture Services Unit t. 416-212-4019 f. 416-212-1802 Penny. Young@Ontario.ca

cc: Christopher Andreae, Project Manager Golder Associates

Chris Schiller, Manager, Culture Services Unit Programs and Services Branch, MTC

^{*} 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 heritage resources are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Ministry of Natural Resources 615 John Street North Aylmer ON N5H 2S8 Tel: 519-773-9241 Fax: 519-773-9014 Ministère des Richesses naturelles 615, rue John Nord Aylmer ON N5H 2S8 Tél: 519-773-9241 Téléc: 519-773-9014



June 7, 2010

Derek Dudek IBI Group Suite 203 – 350 Oxford Street West London, ON N6H 1T3

Dear Mr. Dudek,

In accordance with S. 28 (1) and (2) of the Ministry of the Environment's Renewable Energy Approval Regulation (O.Reg.359/09), the Ministry of Natural Resources has reviewed the final version of the natural heritage assessment for the Kent Breeze and MacLeod Wind Farm Project in the Municipality of Chatham-Kent, submitted by Biologic on June 4, 2010.

After reviewing your natural heritage assessment, the MNR provides the following confirmations:

- 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, if no natural features were identified.
- 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.

As described in S. 12 (1) of the Renewable Energy Approval Regulation, you must include this letter as part of your application to the Ministry of the Environment for a renewable energy approval.

If you wish to discuss any part of this confirmation or the additional comments attached, please contact Heather Riddell at <u>heather.riddell@ontario.ca</u> or 519-773-4723.

Sincerely,

Mulilson

Mitch Wilson District Manager, Aylmer District Ministry of Natural Resources

- cc. Erin Cotnam, Southern Region Renewable Energy Coordinator, MNR
 - Jim Beal, Renewable Energy Provincial Field Program Coordinator Renewable Energy, Regional Operations Division, MNR

Doris Dumais, Director, Approvals Program, Environmental Assessment and Approvals Branch, MOE

Ministry of Natural Resources 615 John Street North Aylmer ON N5H 2S8 Tel: 519-773-9241 Fax: 519-773-9014 Ministère des Richesses naturelles 615, rue John Nord Aylmer ON N5H 2S8 Tél: 519-773-9241 Téléc: 519-773-9014



June 7, 2010

Derek Dudek IBI Group Suite 203 – 350 Oxford Street West London, ON N6H 1T3

Dear Mr. Dudek,

In addition to the MNR's confirmation on the Natural Heritage Assessment for Kent Breeze and MacLeod Wind Farm Project, as required under Section 28 of the Renewable Energy Approval Regulation (O. Reg. 359/09), the MNR provides the following comments.

Significant Wetlands:

Though it is not explicitly stated in the report, the MNR understands that there are no significant wetlands within 120 m of the project location based on discussion in the report and mapping.

Post-construction Monitoring for Bats:

Section 6.2 of the report discusses site sensitivity criteria for bats and the proposal to conduct a "single season of post construction monitoring for bats may be revised once the guideline document is finalized".

The Environmental Registry Posting (EBR, Registry Number 010-9521), which was posted on the Registry on May 13, 2010, states,

"the MNR's Guideline to Assist in the Review of Wind Power Proposals: Potential Impacts to Bats and Bat Habitats. Development Working Draft (August 2007) no longer applies to wind power projects being reviewed under the Renewable Energy Approval Regulation (O. Reg. 359/09). As interim direction until final Guidelines are approved, the criteria and procedures are identified in this proposed draft 2010 Guidelines will be deemed to be acceptable by MNR for wind power projects being reviewed under the REA regulation (O.Reg. 359/09)."

The 2010 Guidelines state,

"Due to the potential negative environmental effects of wind power projects on bats, three years of annual post-construction bat mortality monitoring is required for all projects. This monitoring will be set out in the Environmental Effects Monitoring Plan. Should post construction monitoring show significant bat mortality, operational mitigation will be required."

As such, the MNR recommends submitting a post-construction monitoring and adaptive management plan for the Kent Breeze and MacLeod Wind Farm for our review and comment prior to complete submission to avoid potential delays in approval.

Operational mitigation consists of reducing turbine blade cut-in speed/feathering of 5.5 metres/second and would be applied for a 10 week period during peak bat activity (July-October). This mitigation is deemed to be the best approach, based on studies that identify up to 70% reduction in fatalities and only a 0.3 - 1% loss of energy production.

Petroleum Resources:

As discussed in Section 7.8 of the MNR's Approvals and Permitting Requirements Document development is not permitted within 75 metres of a petroleum resources operation, unless the applicant submits an engineers report demonstrating that there are no effects to the development.

The MNR will be screening the project location for occurrences of petroleum resources, wells and works. The report will be sent to Petroleum Resources Centre for review and if it is found that there are petroleum resources, wells and/or works within 75 m of the project components, an Engineer's Report will be required; however, this is not required as part of the complete submission package to the Ministry of Environment.

Please contact me with any questions.

Sincerely,

Kuddl l

Heather Riddell

A/Planning Ecologist Ministry of Natural Resources Aylmer District 519-773-4723

cc. Mitch Wilson, District Manager, Aylmer District, MNR

Erin Cotnam, Southern Region Renewable Energy Coordinator, MNR

Jim Beal, Renewable Energy Provincial Field Program Coordinator Renewable Energy, Regional Operations Division, MNR

Doris Dumais, Director, Approvals Program, Environmental Assessment and Approvals Branch, MOE

Ministry of Natural Resources 615 John Street North Aylmer ON N5H 2S8 Tel: 519-773-9241 Fax: 519-773-9014 Ministère des Richesses naturelles 615, rue John Nord Aylmer ON N5H 2S8 Tél: 519-773-9241 Téléc: 519-773-9014



August 11, 2010

Derek Dudek IBI Group Suite 203 – 350 Oxford Street West London, ON N6H 1T3

RE: Kent Breeze and MacLeod Wind Farm – Petroleum Resources

Dear Mr. Dudek,

Thank you for your response sent on July 13, 2010 to the Ministry of Natural Resources (MNR) regarding the unknown status of Well #F002377, according to the Petroleum Resources Centre (PRC).

As outlined under Section 7.8 of the MNR's Approvals and Permitting Requirements Document for Renewable Energy Projects (APRD), "development is not permitted within 75 metres of a petroleum resources operation unless the applicant submits an engineers report demonstrating that there are no effects to the development." Based on your response and according to the MNR's records, Well #F002377 is located outside the 75 m setback in relation to both the turbine (Kent-1) and the underground cable trench along Smoke Line. Since the distances between the well and these project components are well in excess of 75 m, the MNR's previous request for a site investigation has been withdrawn.

Based on the information above, it has been determined that the requirement with respect to the petroleum resources operations setback under section 7.8 of the APRD has been met for the Kent Breeze and MacLeod wind farm project, and as such an engineers report is not required.

Please be advised that the MNR cannot guarantee the accuracy of the data in the Ministry's records, as some of the information is historical and may be inaccurate or incomplete. Also, please note that the well data retrieved in the search of the MNR's database are only the wells that we are currently aware of. Other wells may exist in the project area for which we do not have any records.

If any wells in addition to the wells identified in the database search are encountered during the development, please contact Sandra Gilbert at PRC at 519-873-4638 or <u>sandra.gilbert@ontario.ca</u>.

Sincerely,

HRingel.

Heather Riddell A/Planning Ecologist, Aylmer District (519) 773-4723

cc. Sandra Gilbert (Petroleum Resources Centre, MNR) Erin Cotnam (MNR)