Appendix H

MOE Screening Criteria Checklist

Appendix H: Environmental Features Screening Criteria Checklist (MOE, 2001)

Wolfe Island Wind Project

Criterion: Will the project….	Potential Effect		Additional / Supporting Information
	Yes	No	
1.0 Surface and Ground Water			
1.1 have negative effects on surface water quality, quantity, or flows?	✓		• potential for temporary water quality impairment due to localized surficial sediment resuspension during submarine cable installation, blasting at submarine cable landfall locations, and/or construction of land based facilities in close proximity to or crossing of a watercourse • potential to affect artificial tile drains from excavation of tower bases, installation of buried cables, and/or excavation of the pad-mounted transformers • depending upon the source of water for the temporary concrete batching plant, withdrawals of surface water may be taken, but are expected to be below the threshold for a Permit to Take Water from the MOE (i.e., project withdrawal would be <50,000 l/d) • the Project will not require significant alteration of surface runoff patterns • the Project operations do not involve the storage of surface water
1.2 have negative effects on groundwater quality, quantity, or movement?	✓		• depending upon groundwater levels, it may be possible that some dewatering activities will be required when installing the tower and transformer foundations • there is limited potential to affect wells in close proximity of the construction site in the event that a shallow water bearing formation is intercepted during construction – all wells are at least 400 m from a wind turbine • depending upon the source of water for the temporary concrete batching plant, withdrawals of groundwater may be taken, but are expected to be below the threshold for a Permit to Take Water from the MOE (i.e., project withdrawal would be <50,000 l/d) • a small groundwater well will be installed as part of the maintenance/control building, however, withdrawal will be below the threshold for a Permit to Take Water from the MOE • a small septic system will also be installed as part of the maintenance/control building and will conform to applicable MOE guidelines, local building code requirements, and industry best practices

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	Yes	No	
1.3 cause significant sedimentation, soil erosion, or shoreline or riverbank erosion on or off site?	✓		• construction will require excavation and soil storage (e.g., access roads), however, the sites are of limited topographic relief and hence erosion of excavated or stored soil materials is not anticipated • sediment and erosion control measures will be implemented as required • limited potential for water quality impairment due to localized surficial sediment resuspension during submarine cable installation and work near the shoreline areas
1.4 cause potential negative effects on surface or groundwater from accidental spills or releases into the environment?	✓		• materials on-site that have potential to be spilled are limited to fuel, lubricating oils, and other fluids associated with turbine construction, maintenance, and operation and could be spilled. These materials are typically contained with the turbines and pad-mounted transformers and/or the operations / maintenance building and not stored elsewhere on the sites • large quantities of these materials are not contained within the turbine or on-site and do not represent a significant potential negative effect on the surface or groundwater in the event of accidental spills • standard containment facilities and emergency response materials will be maintained on-site as required • potential for accidental spills of oil, gas and/or diesel fuel during landfall and nearshore cable construction • potential for petroleum leaks from operating equipment during submarine cable installation, and small amounts of trash and other solid and liquid wastes accidentally blown or spilled overboard • Buried mainland cable route will avoid location of closed industrial landfill in vicinity of mainland landfall, minimizing potential to intercept landfilled materials or leachate
2.0 Land			
2.1 have negative effects on residential, commercial, or institutional land-uses within 500 m of the site.	✓		• lands for the access roads, electrical lines, turbines, pad-mounted transformers, transformer station, and maintenance/control building will be required for the lease period (i.e., 20 years with renewal options) • during the lease period these lands will be removed from their present land-use • landfall and nearshore construction has potential for nuisance effects, e.g., noise, dust
2.2 be inconsistent with the Provincial Policy Statement, provincial land use, or resource management plans?		✓	• the Project will be planned and developed in a manner that is consistent with the PPS • no effects on provincial land-use or resource management plans are anticipated

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			• the PPS permits the development of renewable energy systems on rural and agricultural lands; these systems should be designed and constructed to minimize impacts on agricultural operations.
2.3 be inconsistent with municipal land use policies, plans, and zoning bylaws?		✓	• the Project will conform with the intent of the Official Plan Amendment (approved 03 January 2007) and be compatible with the area's surrounding land-uses • the Project will be consistent with the intent of municipal land-use and zoning by-law amendment requirements
2.4 use hazard lands or unstable lands subject to erosion?	✓		• shoreline areas, designated as "Hazard Land" in the Township of Frontenac Islands Official Plan (July 2003), will be used only at the submarine cable landfall and will have a small footprint • disturbance to areas identified as hazard lands will be temporary and these areas will be rehabilitated to pre-disturbance conditions
2.5 have potential negative effects related to the remediation of contaminated land?	✓		• to date no contaminated soils have been identified on any of the Wolfe Island sites • contaminated soils may be found in the built up industrial and commercial areas on the Kingston mainland
3.0 Air and Noise			
3.1 have negative effects on air quality due to emissions of nitrogen dioxide ("NO_X"), sulphur dioxide ("SO_2"), total suspended particles ("TSP"), or other pollutants?	✓		• reciprocating engine equipment (e.g., excavators, haulage trucks, and barges) will be used during the construction phase of the Project • operation of the wind turbines will not result in negative effects on air quality since no emissions of NO_x, SO_2, , or particulate matter are generated by the wind turbines
3.2 cause negative effects from the emission of greenhouse gases (carbon dioxide and methane)?	✓		• emissions of carbon dioxide or methane will be generated by construction equipment and to a lesser degree by operation vehicles • operation of a batch concrete plant will release CO_2 • operation of the wind turbines will not result in negative effects from the emissions of greenhouse gases since no emissions are generated by the wind turbines
3.3 cause negative effects from the emission of dust or odour?	✓		• during construction, dust will be generated, with emissions of short duration and limited to the lands surrounding the work areas and landfall locations • no emissions of odour are anticipated
3.4 cause negative effects from the emission of noise?	✓		• during construction, noise will be generated with emissions of short duration and limited to

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	Yes	No	
			the lands surrounding the work areas • controlled blasting in the nearshore areas of the submarine cable landfall locations will emit noise • mechanical and aerodynamic noise will be emitted from the operating wind turbines • there is potential for limited environmental noise effects at sensitive off-site receptors during operation of the wind plant and as such the Project underwent a detailed Environmental Noise Impact Assessment prior to release of the ERR
4.0 Natural Environment			
4.1 cause negative effects to rare, threatened, or endangered ("VTE") species of flora or fauna or their habitat?	✓		• the Natural Heritage Information Centre and the Ministry of Natural Resources have identified historical sitings of VTE species within the general area of study for the Project • area habitats support such species and disruption/alteration of the habitat could cause potentially negative effects • no species of special concern or their habitat have been identified at the landfall locations or along the submarine cable route
4.2 cause negative effects on protected natural areas such as areas of natural and scientific interest ("ANSI"), environmentally sensitive areas ("ESA"), or other significant natural areas?		✓	• there are ANSIs and provincially rare vegetation communities identified within the Wolfe Island portion of the study area, and protected land uses on the mainland; disruption/alteration of these areas could cause potentially negative effects • no construction works are anticipated to occur within any ANSI or ESA
4.3 cause negative effects on wetlands?	✓		• there are provincially and non-provincially significant wetlands identified within the study area as well as wetland restoration projects • Disturbance to all wetlands has been avoided with the exception of two underground power lines to be installed in small portions of the Sand Bay PSW on Wolfe Island and a linear section of the non-PSW (the Ducks Unlimited Canada restoration wetland) on the Kingston mainland
4.4 have negative effects on wildlife habitat, populations, corridors, or movement?	✓		• installation of new electrical generation and transmission infrastructure, within the rural/agricultural and urban areas, may have potential to have some affect on wildlife habitat • wildlife usage or movement may be temporarily altered during the construction phase due to the temporary introduction of new sounds and activities • during operation, turbines may alter the movement patterns of some avian species

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4.5 have negative effects on fish or their habitat, spawning, movement, or environmental conditions (e.g., water temperature, turbidity)?	✓		• potential water quality impairment from local surficial sediment disturbance during submarine cable installation and associated blasting, trenching or drilling works in near shore areas have the potential to affect fish and/or their habitat • crossing of inland watercourses for power line installations and access roads also has the potential for negative effects
4.6 have negative effects on migratory birds, including effects on their habitat or staging areas?	✓		• there is potential to affect migratory birds due to collision with the turbine tower and/or blades and/or bird usage of the area immediately surrounding the wind turbines • no significant staging areas have been identified at the landfall locations for the submarine cable. However, limited localized and temporary disturbance may occur through the use of controlled blasting
4.7 have negative effects on locally important or valued ecosystems or vegetation?	✓		• turbine construction sites are not planned within forested or naturally vegetated areas – they will be located on lands already cleared for rural and agricultural land-uses and therefore there should be no negative effect on valued ecosystems or natural vegetation • depending upon the final location of the electrical lines and access roads, their construction may have potential to cause localized effects to vegetation within the work areas • there are no locally important or valued ecosystems or vegetation in the nearshores at the landfall locations for the submarine cable
5.0 Resources			
5.1 result in inefficient (below 40%) use of a non-renewable resource?		✓	• wind energy is a renewable resource
5.2 have negative effects on the use of Canada Lands Inventory Class 1 to 3 (i.e., prime agricultural lands), specialty crops, or locally significant agricultural lands?	✓		• the majority of the study area lands are mapped as CLI Class 2 or 3 agricultural lands • during the Project's lifecycle, there will be a minor loss of agricultural land associated with the Project's physical footprint (e.g., generally less than 1 – 3 acres per wind turbine depending upon road network) • operation of the wind turbines will not negatively affect the use of adjoining prime agricultural lands, field crop production, or livestock pasturing; all of which can occur in close proximity to the wind turbines

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	Yes	No	
5.3 have negative effects on existing agricultural production?	✓		• agricultural production on the lands physically occupied by the wind turbines, access roads, and ancillary facilities will be discontinued over the Project's lifecycle • agricultural activities can still be conducted around the turbines and ancillary facilities on existing fields
5.4 have negative effects on the availability of mineral, aggregate, or petroleum resources?		✓	• there are no known petroleum resources within the study area • there are no known designated mineral or aggregate resources within lands optioned for the Project
5.5 have negative effects on the availability of forest resources?		✓	• construction of the wind turbines, access roads, and ancillary facilities will not affect merchantable forest resources
5.6 have negative effects on game and fishery resources, including negative effects caused by creating access to previously inaccessible areas?	✓		• the study area is largely cleared for agriculture and there are no areas that could be deemed inaccessible • fisheries resources could be affected by Project construction activities (e.g., work within or in close proximity to watercourses and water bodies)
6.0 Socio-Economic			
6.1 have negative effects on neighbourhood or community character?	✓		• within the study area there are presently no commercial scale wind turbines • the proposed Project will introduce 86 commercial scale wind turbines into the area • the Project will change the present rural/agricultural/recreational community character of the area, but as a land-use wind plants are compatible with rural and agricultural uses
6.2 have negative effects on local businesses, institutions, or public facilities?		✓	• area businesses will benefit financially from construction activities and fulfilling operational supplies • no significant negative effects to local businesses, institutions, and public facilities are expected as a result of the Project • long-term positive effect on area's tax base through County and Township property taxes applied against the wind plant, and the Amenities Agreement with the Township
6.3 have negative effects on recreation, cottaging, or tourism?	✓		• potential for inconvenience of visitors and cottagers on Island roads during the construction phase as construction supplies, materials, and workers are transported • potential short-term effects on water-based recreational opportunities, e.g., sportfishing, boating, during submarine cable installation

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6.4 have negative effects related to increases in the demands on community services and infrastructure?		✓	• potential for periodic congestion of MTO's Wolfe Island ferry service as a result of construction-related traffic • there will be up to ten personnel required to operate the wind plant, therefore there is only a nominal demand on/for public services (e.g. housing, hospitals, and schools) • the Project will not be physically connected to community services or infrastructure and hence no increases for these services is anticipated (e.g., no new demand for potable water, wastewater connections, etc.) • the Township and CREC have executed an Amenities Agreement as part of the Project's development – the monies from this Agreement, paid directly to the Township, may be used for community betterment projects and services and thus are anticipated to enhance community services and infrastructure
6.5 have negative effects on the economic base of a municipality or community?		✓	• through the Project CREC will contribute new resources to the economic base of the municipality (e.g. through annual taxation) and community (e.g., royalty payments to landowners), with limited demand for municipal services • to the extent possible local goods and services will be procured during construction, operation, maintenance, and decommissioning of the Project where these are available in sufficient quantity and quality and at competitive prices, creating a positive economic effect • the Township and CREC have executed an Amenities Agreement as part of the Project's development – the monies from this Agreement, paid directly to the Township, may be used for community betterment projects and services
6.6 have negative effects on local employment and labour supply?		✓	• to the extent possible, where appropriate training and experience have been accrued, local persons will be employed during the construction phase and to provide operational supplies, creating a positive effect for local labour and employment
6.7 have negative effects related to traffic?	✓		• the seasonally idle winter dock at Dawson Point will be used for delivery of turbine components during the off-winter months • the transport of equipment and supplies during the construction phase will result in additional (temporary) road and river use carrying excess loads, large tower components, supplies, equipment, and personnel • equipment and personnel transportation during Project construction will use the MTO ferry for some portions of the construction phase • cable installation across the St. Lawrence River will be scheduled to avoid the peak summer

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	Yes	No	
			boating season (i.e., scheduled for after Labour Day) • during operation supplies will be intermittently delivered to the Project as required, with no significant negative effects anticipated during this stage of the Project's lifecycle
6.8 cause public concerns relating to public health and safety?	✓		• potential exists for accidents and malfunctions and thus there may be general public safety concerns with the new infrastructure • possible perceived health issues related to electric and magnetic fields, and operating wind turbines (due to shadow flicker, environmental noise, ice throw, turbine collapse, etc.) • operation of the wind turbines will not contribute greenhouse gases or other atmospheric pollutants and thus no other public health concerns have been identified
7.0 Heritage and Culture			
7.1 have negative effects on heritage buildings, structures or sites, archaeological resources, or cultural heritage landscapes?	✓		• considering the historic development of Wolfe Island, it is possible that sites of European or First Nation origin may be present within the study area • There are no cultural heritage landscapes identified that will be affected by the Project • a Stage II archaeological assessment has been undertaken prior to construction to confirm the presence or absence of archaeological and/or historic sites in the work areas on Wolfe Island • no marine heritage resources have been identified along the proposed submarine cable route • should such resources be encountered, they will be handled as per the requirements of the Ministry of Culture
7.2 have negative effects on scenic or aesthetically pleasing landscapes or views?	✓		• the wind plant will be visible for a considerable distance across the relatively flat landscape, with some persons finding the wind turbines aesthetically pleasing, others being indifferent, while others possibly finding them a disruption to natural sight lines

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	Yes	No	
8.0 Aboriginal			
8.1 cause negative effects on First Nations or other Aboriginal communities?		✓	• there are no known First Nations or Aboriginal communities within the study area • based on information provided by the Ministry of Indian and Northern Affairs and the Ontario Secretariat for Aboriginal Affairs there are no First Nation or Aboriginal land claims within the study area • the Mohawks of the Bay of Quinte have identified their primary concern with artifacts or burial remains and that a traditional process must be followed for the repatriation or re-interment of remains • there may be potential to discover / disturb archeological resources. A Stage II Archaeological Assessment has been undertaken on Wolfe Island and recommends a Stage III Assessment at six sites. The Stage III Assessment will be conducted prior to the start of construction to confirm the presence/absence and/or significance of resources • a Stage II Archaeological Assessment will be conducted on the Kingston mainland prior to construction • should such resources be encountered, they will be handled as per the requirements of the Ministry of Culture and/or the practices of the Mohawks of the Bay of Quinte
9.0 Other			
9.1 result in the creation of waste materials requiring disposal?	✓		• construction wastes such as excavated soils, equipment packaging and wrappings, and scraps will be produced • the Project will generate waste associated with turbine construction, maintenance, and operation that will require recycling and/or disposal
9.2 cause any other negative environmental effects not covered by the criteria outlined above?	✓		• potential accidents and malfunctions related to seismicity, ice fall,and throw, or submarine cable rapture (e.g., due to anchor dragging) and third party damage are commonly identified by stakeholders as potential project issues

Source of criteria used: *Guide to Environmental Assessment Requirements for Electricity Projects, March 2001* (MOE, 2001)