# **Appendix G3**

Public Open Houses – July 2004

# PUBLIC OPEN HOUSES Environmental Screening Wolfe Island Wind Power Project

Wolfe Island Wind Power Project

Canadian Renewable Energy Corporation (CREC) is proposing to install up to 80 wind turbines (between 1.5 to 3 MW each) on Wolfe Island

and Simcoe Island. The study area for the proposed wind power development is shown on the map below.

See Insert Map

Marysville

Wolfe Island

USA

Lake Ontario

Insert Map

Gardiner Rd

Gardiner Transformer
Station

An environmental screening for development of 13 wind turbines was completed by CREC in 2002-2003. The present proposal involves an expansion from 13 to approximately 80 turbines on Wolfe Island and Simcoe Island. New transmission lines will be required, including a new underwater cable to transmit the electricity to the provincial grid at the Gardiner Transformer Station in Kingston. The insert map above

shows the corridor where alternative alignments are being considered

Airport

King St

Proposed Underwater

for the transmission line in Kingston.

environmental screening.

Cable Route

Proposed Mainland Transmission Corridor

The project is subject to the Ontario Ministry of the Environment's Environmental Screening Process for Electricity Projects and Natural Resources Canada's Screening for Inland Wind Farms. CREC has retained Acres International Limited (Acres) to undertake the

All are invited to attend open houses to be held at the following locations:

Sacred Heart Catholic School Centre 70 Arena, (Reddendale Hall)
Wolfe Island Days Road, Kingston

July 20, 2004 July 21, 2004 4.00 p.m. to 8.00 p.m. 4.00 p.m. to 8.00 p.m.

The open houses will solicit information and comments on the project to assist with the environmental process. Comments received from the public will be taken into consideration when establishing locations for the wind turbines and the transmission lines, as well as developing any mitigation measures.

For further information, contact:

Cate Mee

**Acres International Limited** 

4342 Queen Street, P.O. Box 1001, Niagara Falls, Ontario, L2E 6W1 Tel: 905-374-5200, Fax: 905-374-1157, Email: cmee@acres.com



Acres International Limited
4342 Queen Street
P. O. Box 1001
Niagara Falls, Ontario, Canada • L2E 6W1
Tel: 905-374-5200 • Fax: 905-374-1157
www.acres.com

Stakeholder Name Dear:

Wolfe Island Wind Power Development Open Houses

Canadian Renewable Energy Corporation is proposing to develop a wind power facility on Wolfe Island and Simcoe Island.

The project is subject to an environmental screening under the Electricity Projects Regulation (O. Reg. 116/01) of the Ontario Environmental Assessment Act and also the requirements of the Canadian Environmental Assessment Act. Public consultation is an important component of the environmental screening process. To bring the public up to date regarding the proposal, Open Houses are being held on Tuesday, July 20 on Wolfe Island and Wednesday July 21, 2004 in Kingston. The attached brochure provides more information.

We would welcome your attendance at one of the open houses. If you require any further information please feel free to contact me, or Cate Mee at 905-374-5200.

Yours very truly,

**CEM** 

Murray McFarlane Project Manager

Attachment

P:\15762\ 30\Public Consultation\Open House let.doc

#### NOTICE OF PUBLIC OPEN HOUSE WOLFE ISLAND WIND PROJECT JULY 20 & 21, 2004

#### AGENCY CONTACT LIST











Margaret Bakelar Sr. Program Officer Canadian Environmental Assessment Agency 55 St. Clair Ave, Room 907 Toronto, ON M4T 1M2

Bill Warwick General Manager Cataraqui Region Conservation Authority 1641 Perth Rd. Glenburnie, ON K0H 1S0

Bianca Bielski Manager, Planning City of Kingston City Hall, 216 Ontario Street Kingston, ON K7L 2Z3

Terry O'Shea Clerk Corporation of the Township of Frontenac Islands PO Box 130 Wolfe Island, ON K0H 2Y0

Barry Birrell Correctional Service of Canada 1048 Lawton Place Kingston, ON K7P 1M4

Karen Fischer
Manager of Economic Development
County of Frontenac
2069 Battersea Road
Glenburnie, ON K0H 1S0



Phil Leonard Chair County of Frontenac 2069 Battersea Rd. Glenburnie, ON K0H 1S0

Vicki Mitchell Environmental Assessment Coordinator Ontario Ministry of Environment 133 Dalton Ave. PO Box 820 Kingston, ON K7L 4X6

Brian Ritchie Economic Development Consultant Ontario Ministry of Municipal Affairs and Housing 91 Cornelia St. W Smiths Falls, ON K7A 5L3

Gerry Mulder Area Supervisor Ontario Ministry of Natural Resources 51 Heakes Lane Kingston, ON K7M 9B1

Jim Miller Utilities Kingston 211 Counter St. Kingston, ON K7L 4X7

Brad Finch Manager Kingston Norman Rogers Airport 1114 Len Birchall Way Kingston, ON K7M 4M1

# NOTICE OF PUBLIC OPEN HOUSES WOLFE ISLAND WIND PROJECT JULY 20 & 21. 2004

#### **INTEREST GROUPS**









Brian Hart Hearthmakers Energy Cooperative 99 York St. Kingston, ON K7K 1P9

Bryan Funk Union Gas Ltd. 520 Gardiners Rd. Kingston, ON K7L 4Y6

Dean Thomas Harris Queens University Ellis Hall, Room 101 Kingston, ON K7L 3N6

Erwin Batalla President Kingston Field Naturalists PO Box 831 Kingston, ON K7L 4X6

Globe Realty Holdings c/o Brookfield Lepage - Johnson Controls 7400 Birchmount Rd. Box 4800 Markham, ON L3R 5V4



Peter Chantraine Manager INVISTA 455 Front Rd. PO Box 2100 Kingston, ON K7L 4Z6

Peter Tobias Chair Kingston Economic Development Corporation 67 Brock St. Kingston, ON K7L 1R8

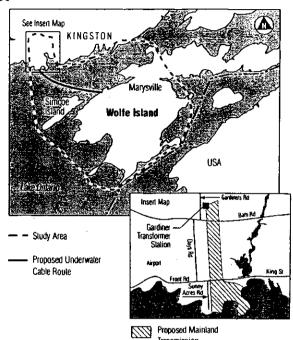
Scott Muir Coastal Wetlands Biologist Ducks Unlimited 614 Norris Crt. Kingston, ON K7P 2R9

Volker Thomsen President and CEO St. Lawrence College 100 Portsmouth Ave Kingston, ON K7L 5A6

#### Wolfe Island Wind Open House - July 2004 **Comment Sheet**

Canadian Renewable Energy Corporation (CREC) is proposing to construct a wind power development on Wolfe Island and Simcoe Island, in the Township of The project will involve Frontenac Islands. construction of wind turbines on both islands, an underwater transmission cable and aboveground 230kV transmission lines to enable the power to be delivered to the provincial grid at the Gardiner Transformer Station in Kingston.

Public consultation is an important component of this process. Please use this form to provide us with your comments and/or concerns, or any background information that may be relevant to this undertaking.



Transmission

Over

Corridor

#### Section A -Wind Power Development Sites on Wolfe Island and Simcoe Island

1.	Are you a permanent or seasonal resident of Wolfe Island	nd/Simcoe Island	?	
		□ Yes		No
	If yes, do you reside	☐ Permanently		Seasonally
	If no, do you live in the old Kingston Township?	□ Yes		No
2.	Do you own any of the properties optioned for wind po	wer development	?	
		□ Yes		No
3.	Please provide any comments you have regarding the p	roposed wind pov	wer	development
				<del></del>

WELCOME TO

Wolfe Island Wind

Open House

CREC

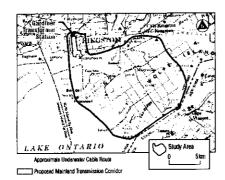
CANADIAN RENEWABLE ENERGY CORPORATION





#### **Background**

- Canadian Renewable Energy Corporation (CREC) is proposing to develop wind power facilities, consisting of up to eighty 1.5 to 3.0 MW turbines.
- An environmental screening for development of 13 wind turbines was undertaken in 2002-2003.
- The present environmental screening involves the expansion from 13 to up to 80 turbines on Wolfe Island and Simcoe Island.
- New transmission tines will be required including an underwater cable to transmit the electricity to the provincial grid in the Kingston area.
- Any wind turbine generating system greater than 2 MW is subject to an Environmental Screening under Ontario's Electricity Projects Regulation 116/01, of the Environmental Assessment Act.
- CREC has retained Acres International Limited to undertake the Environmental Screening.
- CREC is applying for support under Natural Resources Canada's, Wind Power Incentive Program. Such projects are subject to the Canadian Environmental Assessment Act.
- The primary function of CREC is to provide electricity from renewable energy resources to Canadian consumers.

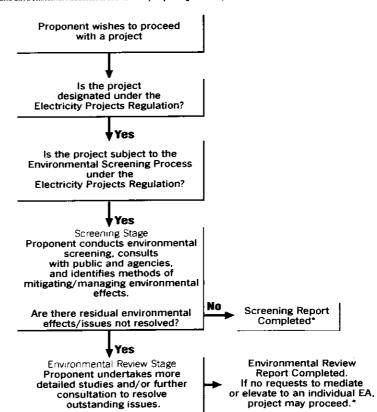


Public consultation is an important component of the Environmental Screening Process.
This open house is to provide you with an apportunity to:
- hear details of CREC's proposed wind power development
- ask questions regarding the proposed development
- have issues and concerns addressed.

Please fill out a Comment Sheet before you leave.

#### **Screening Process**

Ontario Environmental Assessment Act - Electricity Projects Regulation 116/01



\*Project may proceed subject to other required approvals

Wolfe Island Wind





## Environmental geraaning

#### **Wind Power Generation**

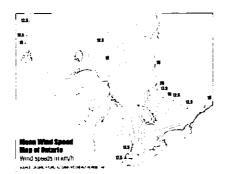
#### Site Selection

Key factors in site selection for wind power generation are

- -sufficient wind speeds
- -relatively even air flow
- proximity to the energy market and electrcity grid interconnection (reducing transmission costs)
- -landowners willing to have wind turbines placed on their properties
- open rural/agricultural areas or elevated land areas

The most suitable sites in Ontario for wind generation are along the east and north shorelines of the Great Lakes where the prevailing west/southwest winds have crossed the lake surfaces.

Wind turbines are usually located in open rural/agricultural areas.



CREC has been studying wind conditions on Wolfe Island since

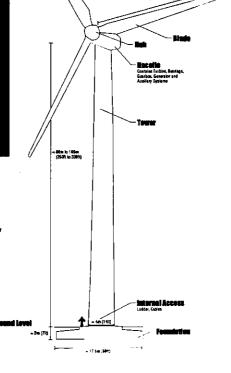
They have installed 3 - 50m to 60m tall towers equipped with

Data indicates that there are very favorable winds for power generation.

#### **Wind Turbine**

Components of a wind turbine are shown on the sketch. The wind turbine consists of a tower, a rotor (including a hub and three blades), gearbox and generator as main components. (The latter two are housed inside the nacelle). The rotor and nacelle turn into the wind and rotate the blades for best electricity production.

The manufacture(s) of the wind turbines that will be used have not been selected but the dimensions will be approximately as shown.

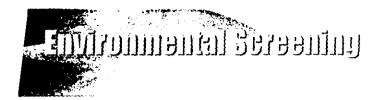


Wolfe
Island
Wind



#### CREC

Trip is a 50 m high digital anomeniates that is used to members the energy of the wind. Consider Anometic Foreign is using this nat for extention wind resource mapping of the big is a standard, we will be abletted with a source mapping of the trip in the continuity in the continuit



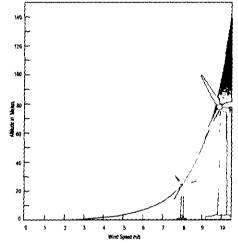


## Factors in Selecting a Wind Turbine

#### Height of the Wind Turbine

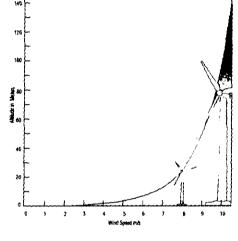
Wind speeds close to the ground are affected by the roughness of the terrain. For example; trees and buildings slow down the wind more than agricultural fields or open/nontreed areas. Water surfaces have the least effect on wind speeds.

The graph on the right shows how wind speeds increase with altitude considering a roughness class of 2 (i.e., a surface consisting of agricultural fields with a few houses and hedgerows).



#### Power Output Increases with Area Swept by the Blade

Doubling the diameter of the rotor blade, increases the area swept four times. This means that there is the potential to get up to four times the power



2500 kW

#### 440\_\_ 750 kW

225 XW

#### Reasons for Choosing Large Turbines

Economies of scale (i.e., construction costs are somewhat independent of the size of the machine being installed).

In areas with limited space, a large turbine uses existing wind resources more effectively.

Taller machines access the higher winds farther from the ground.

Larger machines have lower rotational speeds producing less sound.

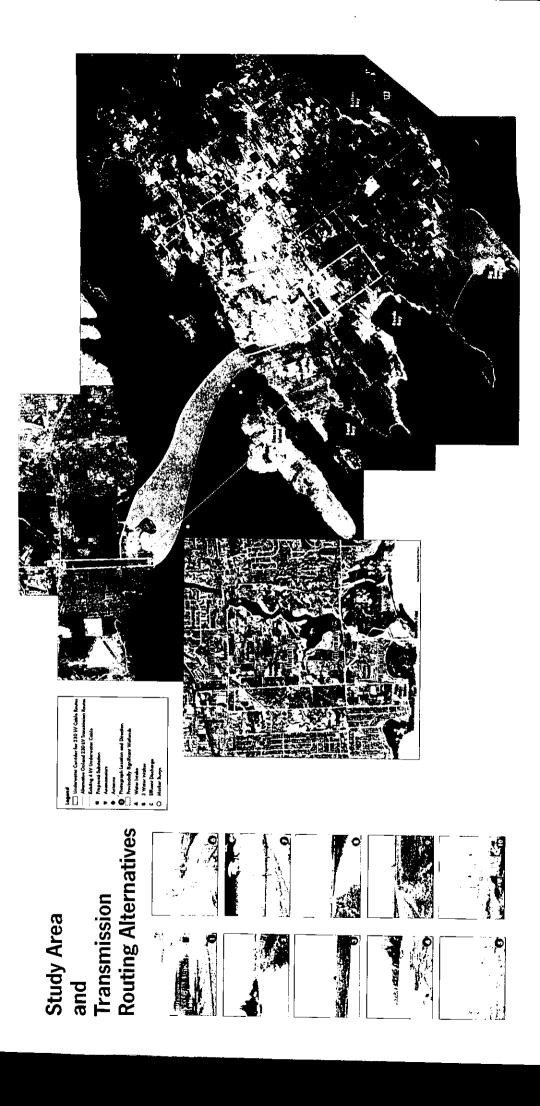
Slower rotational speeds are less distracting to the viewer.

#### **CREC's Wind Turbine Considerations**

- Larger machines are generally quieter.
- Fewer machines of larger size will be required to produce the same amount of energy and will therefore cause less disturbance to the agricultural fields.
- The wind industry is moving towards higher towers and larger machines in order to reduce cost, visual impact and land use.

Island Wind





# Environmental Screening

#### **Environmental Studies**

Background environmental studies have been undertaken on Wolfe Island, Simcoe Island, along the underwater cable crossing and the mainland transmission corridor. The following describes some of these studies.

#### **Aquatic Habitat**

- Fish habitat (e.g., substrate, aquatic vegetation, in-stream cover) along the Wolfe Island and Kingston shorelines was mapped in the vicinity of the proposed underwater transmission cable.
- Information will be used to assess the impact of the underwater transmission cable on fish habitat and any mitigation/compensation required to obtain Department of Fisheries & the Federal Fisheries Act.

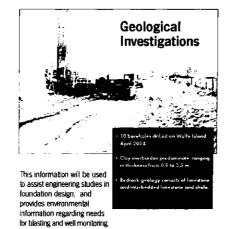




#### **Terrestrial Habitat**

- Terrestrial and wetland vegetation communities and significant habitat features (e.g., amphibian breeding ponds, seasonal migration corridors) were mapped in the vicinity of the proposed facilities.
- Anthropogenic features (agricultural fields, fencerows, old field meadows and thickets) predominate, with scattered wetlands and woodlots present.

Information will be used to site wind turbines and transmission lines to avoid impacting significant habitat areas (e.g., Provincially Significant Wetlands and woodlots).

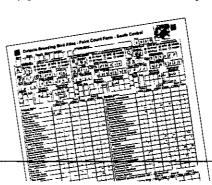


#### **Bird Studies**

Bird studies were undertaken on Wolfe Island, Simcoe Island and the mainland study area including

- spring bird migration surveys
- bird breeding and nesting surveys

This baseline information will be used to develop a monitoring program to determine whether the wind turbines are affecting birds.



#### **Noise Level Measurements**



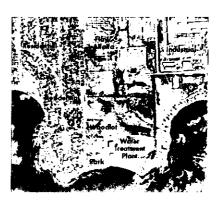
- Sound levels measured at a number of locations on the islands to determine barkground conditions.
- Night time sound levels under light wind conditions are in the order of 40 dBA.

This information will be used to locate wind turbines to meet MOE noise guidelines at residential dwellings.

#### **Land Use Studies**

- Existing land use on the western part of Wolfe Island, Simcoe Island and the mainland was mapped.
- Official Plan designations for all areas were determined.

This information will be used in locating wind turbine sites, and transmission line routes.



Wolfe Island Wind

CREC







# **Construction and Operation - Issues and Resolution**

# 100 A Construction Issues and Resolution

Construction involves barrsporting of the turbines to the site, preparing the site for furbine installation (e.g. equipment taydown areas, access

Enurs all indestrateurs repeting.  Remove all materials and clear up kydown area. Regrade and dischort compaction.	Burge delivery of archines to Wolffe kland.  Burge delivery of archines to Wolffe kland.  Set access by transport trade for delivery of component or helicopher, if necessary, and crans.  Private packes seem to require the delivery of component or helicopher, if necessary, and crans.  Private packes are as the convolution of the proposed who form boundaries to minimate effect to adjocent featowards will form combining requirements for mancher of lowers of will form boundaries to minimate effect to adjocent featowards and repleas when one to minimate effect to be continuously for a minimate effect to be continuously for the proposed will form construction compared.  Plog boundaries to minimate effect to discent featowards and repleas when one to explore the proposed of the delivery roads by growths a distinction.  Plog boundaries to minimate effect by deven one of the construction.  Plog boundaries to window.  Plog boundaries of windows.  Plog boundaries of windows.  Stage 2 conductories of windows.  Stages 3 conductories of windows.  Stages 3 conductories of windows.	Fransportation of large equipment to site Access roads between brivens, lay down areas or some agricultural land area for hubble foundations and occess reads.  The underdrainage system  Disturbance to welfand areas  Archaeological researces  Sarky, concerns during constitutions  Employment, local infrastructure  Waste, Monagements  Site Channey and Rekabiliterion.
	- Bast ovance spring whaten bearing period Use hos-mar where possible - Gollow spandord selety procedure for blowing (e.g. use of blosting mosts, inform pubble of schedule stc.).	fir required for concrete pool routings
- Corong pin.	Remove any lamporary construction/occess reads.  • Grade piles.  • The construction of	ite Cleonup and Rehabilitation
	<ul> <li>Any fuelk/fubricating ells/flydroulis fluids steed on site to be bermind and kept of the main keydown area.</li> <li>All writes to be collected and disposed at approved holilities.</li> </ul>	(site Monagemen)
,- ,	Labour and management of a source and any was a possible.  Local businesses (accommodation, food, gas, etc.) will benefit.	npoyment local minestrative
	onto site.	
T G	Periodic watering of dealy area, as required.     Removel of mud if recolud onto any pared road.	
	establish construction articles to between 0700 and 19 00 hours	in a send of the state of the send of the
<u>.</u>	Strage 2 exchosological autonoment to be undertaken prior to construction.  * Contractor to report any artificat found and licensed archeologist to	chosological recourses
. Tog	Flog boundaries of welfands.     No construction withdaw to frespons within welford boundary.     Ploces all features, strow balks akt, as required to prevent sediment referention works course.	iturbance to westond areas
<b>4</b>	<ul> <li>Fing location of file drains and evoid where possible, all cut drains to be repeired/replaced as required by qualified drainage specialist.</li> </ul>	e underdrainage system
	Compensate former for feas of least     Ship top soil prior to construction if feature requests and replice when construction compensations are interested to compensations of the season of the	as of teins agricultural land aree for britine toundations and scent roads
res for hubine foundations and	Misimize ensount of lend nequived for access and laydown by combining requirements for a marker of lowers.     Ensure laydown areas a k.c on within the proposed wind form boundaries to minimize effect to adjacent landowners.	coss roads bahrean towen, lay down areas
by down areases for butbine foundations and fon	Barge delivery of unbias to Wolfe Island.     Establish towe which mismites traffic disruption and with     elsiquide dearmoss.     She access by finestory breater for delivery of components or helicopher,     if necessary, and crante.     Provide police secont as required.	ansportation of large equipment to site
ay down areas res for herbine foundations and		

# Operation Issues and Resolution

Only periodic maintenance is required. The turbines will generate power when wind speeds exceed 4 m/s.

enss	Resolution
Noise from terbine operation	* Target sound levels at residential receptors will be MOE arteria for rurel arres.
Assthatics (Vavacape)	* Terbin as to be astred as least 4000 to 700 as from when/multiple between/multiple between the street betw
Shadow/Hickee effect in evnlight	<ul> <li>Towers to be located for enough from residences that they do not cost significant shadows (i.e. located or least 200 m away).</li> </ul>
Effects on birds	<ul> <li>Latest technology wind machines are designed to mistalize the potential for birds to nest/roost on the tower. Roose blodes are slow moving and birds can fly through or ground them with minimal mortality.</li> </ul>
Interference with microwave and lelevision signals	· Robor blodes are constructed of Resigness (non-metalite substances) and there is no electromagnestic interference.
Interference with alreads Right peths and novigational systems	· Each tower will be equipped with lighting, to Transport Canada specifications.
Notural darkness of rural area and tower lighting	<ul> <li>Towers must be lifter safety reasons, to meet Transport Canada specification. Lights designed to reduce light poblution will be employed.</li> </ul>
Operation of turbines in cold weather and freezing rain conditions	<ul> <li>Turbines can operate to 30°C. The tertine will entometrically shut down when increased load from ice on the blodes occur.</li> </ul>
Maintenance of turbinss	<ul> <li>Turbines typically need to be serviced every 6 months.</li> <li>No on-the storage of hazardous moterials will be necessary.</li> </ul>
Interference/change to runoff potterns due to construction of large foundations	<ul> <li>Concerts professionalisis is burded homoselts a correr of send and gravel.</li> <li>The drain will be placed enough the contact homologies are required.</li> <li>prevent producing in the field. The way of sending prover they would for the sending to the contract the contract surface. Increase in offsite month is not anticipated.</li> </ul>
Compostality with Township of Frontanac islands Zoning Byław	<ul> <li>Zoning amendment will be required from the Township for each property.</li> <li>Set back from road allowences, for lines and structures will be established in the amendment.</li> </ul>
Companibility with County of Frontanaed and Township of Frontanae Islands Official Plans	Official Man emendments for all egricultural designated lends.
Decommissioning Issues and Resolution	

# \*Regrade site to original contours, or as per landowner requirements. - Enow endowlending system is working effectively: - Flore in germinous across to provide more rapid mism of nutrients and attracture, if landowner in agreements. Recycle meterials where possible, otherwise remove to an apparated disposal site. Ramovet of scrap metal and cabling, tower structures and concrete foundations

Site clean up and rehabilitation

A 25-year lifespan is anticipated for the furbines. At that time, turbines will be decommissioned or refurbished.







#### **Transmission Facilities**

#### **Existing Electrical Transmission**

- Existing power distribution on Wolfe Island and Simcoe Island consists of 2.3-kV (derived from a 4-kV source) overhead lines on wooden poles.
- Two submarine cables (one from east of Kingston to Brophy Point and one from the DuPont Canada property to Simcoe Island and then to Wolfe Island; the the Islands distribution network with the mainland transmission system.

### Transmission Requirements for Wind Power Development

- The existing system is inadequate to meet the transmission requirements for the proposed wind power development.
- A new underwater 230-kV cable is required to transmit the power to the mainland.
- The nearest mainland site to tie-in a 230-kV line to the provincial power grid is at the Gardiner Transformer Station.
- The environmental screening for the wind generating facilities addresses issues associated with installation of the new 230-kV transmission facilities.

## Wolfe and Simcoe Islands Transmission Requirements

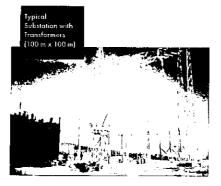
- Underground cables will carry the output from an individual wind generator or groups of generators to a new 34.5-kV transmission network
- The new 34.5-kV transmission network will involve a single wooden pole line placed within existing road allowances
- A substation on Wolfe Island will step-up the voltage from 34.5 kV to 230 kV. (This is required as considerable energy losses would occur at lower voltages)
- A 230-kV transmission line will connect the substation to the underwater cable. Routing alternatives are being examined for this line (see aerial photograph).
- A fiber optics cable is required to transmit data from each wind generator to the central operating system. This will be attached to the power transmission system.

#### **Underwater Cable**

- A 230-kV underwater cable incorporating a fiber optics cable will connect the Wolfe Island system to the mainland.
- The proposed route for the cable leaves Wolfe Island west of Line 4 Road north of Highway 96 and comes on land in Kingston between Carruthers Point and Point Pleasant.
- Final route location will be determined during the next phase of detailed engineering when side-scan sonar investigations are planned. Cable will be routed to avoid:
- heritage features (e.g. sunken vessels)
- significant aquatic habitat (e.g. Snake Island Bank)
- intake and outfall cribs (e.g. City of Kingston water filtration and treatment plant pipes)
- potentially contaminated sediment.

#### Mainland Transmission Requirements

- A 230-kV line will connect the proposed underwater cable to the Gardiner Road Transformer Station
- routing alternatives are presently being examined see aerial photograph.



#### Construction and Operation - Issues and Resolution

Issue - Above Ground Transmission Lines	Resolution
Impact to wellands	<ul> <li>No construction permitted within provincially significant wetlands on Wolfs latend.</li> <li>Construction of any towers within wetland on Frostenac Institution lone to be undertaken in winter when ground frazen.</li> </ul>
Potential sediment loss into adjacent waterbodies	<ul> <li>Where possible maintain cover crop and 30 m setback from water body, atherwise ensure sediment control devices in place.</li> </ul>
Soil compaction/topsoil-subsoil mixing	Use access roads where possible.  Maintain cover crop when crossing agricultural fields.  Stop activities under wet soil conditions.  Schedule activities when soils least susceptible to compaction (e.g. during dry summer or frozen soil conditions).  Temore any sail compaction by discing/subsoiling.
Disposal of excavated material from foundation excavation	<ul> <li>Find suitable on site location otherwise find approved offeits location.</li> </ul>
Damage to field tiles	<ul> <li>Minimize crossing of tiles where possible.</li> <li>Repair any damaged tiles.</li> </ul>
Safety	Ensure all excavations fenced.     Ensure any substations adequately fenced with suitable signage.     All above ground lines will be a sufficient distance from the ground so as not to interfere with any activities on the ground.
Noise and Yibration	Limit construction to 07:00 – 19:00 hours where close to residential areas unless preference by public to shorten overall construction schedule or there are conflicts with timing near heavily traveled road.
Med and Dest	<ul> <li>Wet down dry soil/gravel roads if duet is a concern to public.</li> <li>Sweep/wosh away any mud tracked onto paved roads.</li> </ul>
Aosthaña	Plant tree/shrub screen if substation visually intrusive to local residents     Some visual intrusion will occur due to presence of overhead lines, choice of pole structure to be the least intrusive as possible.
Conflict with existing land use	Preference to route transmission line within/next to existing road/utilay right of way where possible. Agricultural scripties can continue after line has been inshelled. Location of Kingston's nesitiend line to be finalized during discussion with landowners to determine routing preferences across sock property.
Conformity with Official Plan (OP) designations	Linear utility facilities are permitted within all OP designations.
Issue - Underwater Cabie	Resolution
Impact to fisheries	<ul> <li>Known/potential fish spawning areas will be avoided where possible.</li> <li>Minimal impact to fisheries as cable only 20 cm (8 inches) in disnature and will be led sinserty on river book, 5 one habited disherbance will be writin 50 - 100 m of shore where cable will be buried. Mitigation in discussion with DFO.</li> </ul>
Potential to impact underwater heritage features	<ul> <li>Side scan sonar investigations are planned prior to finalizing route, any underwater feature will be evaided.</li> </ul>
Muman Safety	Cable to be buried at water/land interface for a distance of 100 to 250 m. Cable markings to be installed along on land buried section. Cable with have a steel armour shaled to prevent damage from anchors. Area to be securely fenced where cable comes above ground.
Impact to shoreline wee/sesthatics	Cable will be buried 50 m offshore and 50 to 200 m onshore to minimize shoreline damage and visual impact.

Wolfe Island Wind



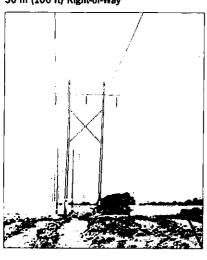


# Environmental geseening



#### **Transmission Poles / Underwater Cable**

Proposed Pole Line for Wolfe Island 30 m (100 ft) Right-of-Way

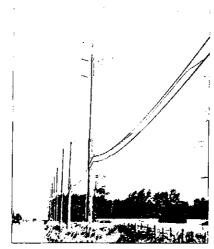


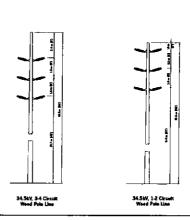
Proposed Pole Line for Mainland 27 m (90 ft) Right-of-Way



230kV Steel Pale

Pole Line to Connect Turbine Sites to Substation Poles Placed in Road Allowance





**Underwater Cable Armoured Coated** 20 cm (8") Diameter







# Environmental Screening



# **Environmental and Economic Benefits**

- Renewable energy, sustainable power. Wind power from Wolfe Island will reduce fuel burnt at the Lennox Generating Station west of Kingston.
- Supplementary income for local farmers leasing land for wind power generation.
- · Agricultural lands can still be farmed.
- Local businesses (accommodation, food, gas, concrete) will benefit during construction.
- · Economic benefit to local community tax base.
- Fiber optics connection to Wolfe Island (potential for high speed internet connection to the island).

#### **Environmental Permits/Approvals**

A number of approvals/permits/submissions will be required, including:

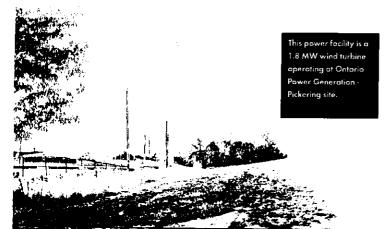
- Natural Resources Canada
   Environment Impact Statement under the
   Canadian Environmental Assessment Act
- Environmental Screening under the
   Ontario Ministry of Environment's
   Environmental Screening Process for Electricity Projects
- Transport Canada
   Aeronautical Obstruction Approval
- Department of Fisheries and Oceans
   Authorization under Fisheries Act (Underwater Cable)
- Transport Canada-Marine
  Approval under Navigable Waters Protection Act
- Ontario Ministry of Environment
   Certificate of Approval (Air/Noise)

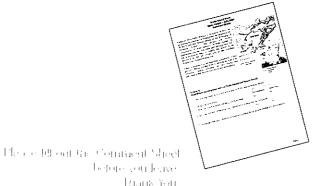
- Ontario Ministry of Natural Resources
   Land Use Permit and Tenure Requirements
  (for underwater cable)
- City of Kingston
   Potential Site Plan Approval
- County of Frontenac
   Official Plan Amendment
- Township of Fronteriac Islands
  Zoning Amendment
  Council Approval
  Official Plan Amendment
- Hydro One
   Approval to Connect to the Grid (upgrade of transmission facilities required)

#### **Next Steps**

- Completion of Wind Data Collection
- Draft EA Réport (Incorporating Public Input)
- 30 Day Public Review Period
- · Finalize Report
- Obtain Permits/Approvals
- Complete Engineering Design

   Finalize Layout for Wind Turbines







Wolfe Island Win

