

Appendix A2. Newsletters

# Wind Energy News Bluewater • Goshen • Jericho

# Green Energy and the FIT

core component of the Province of AOntario's Climate Change Action Plan is the shift to renewable energy. According to the Ministry of the Environment, Ontario's program to phase out coal-burning power plants is the single biggest greenhouse gas reduction initiative in the country.

Wind energy is playing a significant role in new power production in Ontario, and is a cornerstone of the shift to clean energy and a green economy. Ontario will continue to develop its renewable energy potential over the next decade. Based on the medium growth electricity demand outlook, a forecast of 10,700 megawattts (MW) of renewable capacity (wind, solar waterpower and bioenergy) is anticipated to be part of the supply mix by 2018. This forecast is based on planned transmission expansion, overall demand for electricity

and the ability to integrate renewables into the system.

he province has established the Feed-In-Tariff (FIT) program to enable the development of wind power across Ontario. The FIT program provides longterm contracts for energy generated using renewable resources. Homeowners, business owners and developers may apply to the FIT program if they use one or more forms of renewable energy, including wind, waterpower, solar photovoltaic (PV) power and bioenergy. The program is the first comprehensive FIT program in North America. It was launched through the Green Energy and Green Economy Act, 2009. Under the FIT program, 50% of the materials and services for these projects must be sourced domestically. To learn more, please visit: www.mei.gov.on.ca/en/energy



One wind turbine provides enough power for about 300 homes

#### Public Input Sought in Planning Process

NextEra Energy Canada is in the early development phase of the Bluewater, Goshen and Jericho Wind Energy Centres in Huron and Lambton Counties, in the vicinity of Grand Bend. We have commenced the Environmental Effects Studies for the Renewable Energy Approvals (REA) process for each of the three wind energy centres. We recognize that community input is important to creating a plan that will meet both NextEra Energy Canada and the community's needs. A great deal of additional work will be required to create a detailed plan for

each project. We look forward to working with our community partners, neighbours and local landowners on the planning process for these projects.

Open houses for each of the projects were held in June 2010. The next open houses are tentatively scheduled for early 2012. NextEra Energy Canada's project team will also be meeting directly with landowners and community groups, and we invite you to provide us with your comments, ideas and concerns. Newsletters will be distributed to the

community throughout the REA process to keep you informed about project progress, news and schedules.

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#### pen Houses urn-out for 2010 JOOC

Three public open houses were held in late June 2010, one located in each of the three study areas - Bluewater, Goshen and Jericho --- with between 70 and 100 local residents attending each.



The open houses provided people with an opportunity to learn more about the projects. A number of our experts were on hand to discuss bird and bat populations,

planning and the REA process, sound levels, operations and maintenance, employment, grid connection, renewable energy in Ontario, scheduling and construction.

Thank you to all who attended and shared your ideas with us. Local residents provided us with a great deal of important information, including additional information about bird habitat in the area. We will address all comments and concerns raised at the

public open houses in the REA process.

The open house information boards are all posted on our website where they can be downloaded:

www.CanadianWindProposals.com



# Where are the Proposed Projects?

We are in the early development phase of three projects in the area.

### Bluewater

The Bluewater Wind Energy Centre is expected to have а maximum generating capacity of up to 90 megawatts. The wind farm will be located in Bluewater potential Township, with electrical interconnection extending into Huron East. At the maximum generating capacity. the Bluewater Wind Energy Centre will produce enough energy for approximately 22,500 homes in Ontario.



Goshen

The Goshen Wind Energy Centre

is expected to have a maximum

generating capacity of up

to 160 megawatts. The wind

farm and potential electrical

interconnection will be located

in Bluewater and South Huron

Townships in Huron County. At

maximum generating capacity,

electricity for up to 40,000

project

will

provide



### Jericho

The Jericho Wind Energy Centre is expected to have maximum а generating capacity 230 of up to megawatts. The wind farm will be located in the of Municipality Lambton Shores, with potential interconnection electrical extending into Warwick and **Brooke-Alvinston Townships** in Lambton County. At maximum capacity, this project will provide energy for more than 57,000 homes.



this

homes.

# Who are the Project Partners?

#### NextEra Energy Canada

NextEra Energy Canada, ULC is part of NextEra Energy Resources, North America's leading generator of renewable energy from the wind and sun with more than 9,500 wind turbines in operation. We currently operate four wind farms in Canada – the Mount Copper Wind Energy Centre and the Mount Miller Wind Energy Centre in Quebec, the Pubnico Point Wind Energy Centre in Nova Scotia, and the Ghost Pine Wind Energy Centre in Alberta. We are also in the development stage of several more wind energy projects in Ontario.

NextEra Energy Resources is part of NextEra Energy, Inc., formerly known as FPL Group. More than 95% of NextEra Energy Resource's electricity is derived from clean or renewable sources including wind, solar, hydro, natural gas and nuclear energy. NextEra Energy Resources is headquartered in Juno Beach, Florida with Canadian operations based in Burlington, Ontario. For more information about NextEra Energy, visit these websites: www.NextEraEnergy.com www.NextEraEnergyResources.com

#### Canadian Green Power

Canadian Green Power IMS, is NextEra's local partner. Founded in 1999, this Ontario-based company owns and manages wind farm development land.

# Answers to Some Common Questions

#### Wildlife

As part of the REA process, NextEra Energy Canada is working with experts to assess the potential effects on local wildlife, including birds and bats. When properly sited, wind turbines present less of a danger to birds than other structures such as buildings or roads. The location of turbines, as well as numerous other decisions associated with developing our wind farms, are carefully designed to minimize these effects.

Our work plans and results are reviewed by the Ontario Ministry of Natural Resources and the Ontario Ministry of the Environment as part of the approval of our REA application. Based on our studies, we will identify concerns and develop appropriate mitigation strategies to minimize environmental effects.

"Most of today's rapidly growing demand for energy is now being met by natural gas and expanded coal-burning power plants, which are this country's single greatest source of the greenhouse-gas emissions that cause global warming. If we don't find ways to reduce these emissions, far more birds—and people—will be threatened by global warming than by wind turbines. Our challenge is thus to help design and locate wind-power projects that minimize the negative impacts on birds."

#### The Audubon Society

http://policy.audubon.org/audubonstatement-wind-power

#### Sound

Wind projects must show that they meet the sound limit requirements prescribed by the Ministry of Environment. For nonparticipating residences (those that are not a part of the project) the sound limit is 40dBA. This is quieter than many sources of sound within a home. NextEra Energy Canada takes great care to ensure that it is in compliance with the noise requirements. For most houses, the sound levels will be well below the 40dBA limit. When our projects become operational we commit to quickly addressing any concerns that arise regarding sound from our wind farm.

#### Health

At NextEra Energy, we take concerns related to our projects seriously. Much has been written about health effects associated with wind turbines. We are not aware of any scientifically peer-reviewed information demonstrating a link between wind turbines and negative health effects.

"There is no scientifically valid evidence that wind turbines are causing direct health effects, although the body of valid evidence is limited. It is unlikely that evidence of adverse health effects will emerge in the future because there is no biologically plausible mechanism known by which wind turbines could cause health effects."

Dr. David Colby Chief Medical Officer of Health (Acting) Chatham-Kent, June 1, 2009

"According to the scientific evidence, there isn't any direct causal link between wind turbine noise and adverse health effects." Dr. Arlene King Ontario's Chief Medical Officer of Health May 20, 2010

#### **Shadow Flicker**

The required 550 metre setback from residential areas minimizes shadowing and "flicker" associated with turbines on a residence. We commit to mitigating complaints of shadow flicker associated with our projects.

Because shadow flicker is diffuse and limited to predictable, brief time periods just before sundown or after sunrise, it is an aesthetic rather than a safety issue. If we receive a complaint about shadow flicker at any home involved in or near the project, we are committed to mitigating the problem using appropriate measures, such as planting trees in the line of sight or installing window treatments or awnings.

#### **Property Values**

There is no evidence to show a decline in property values from the siting of a wind farm. Studies have been conducted by Ontario municipalities and leading universities, which have concluded that the construction of a wind facility does not detract from property values.

### Excerpt from the Chatham-Kent property value study 2010:

"In the study area, where wind farms were clearly visible, there was no empirical evidence to indicate that rural residential properties realized lower sale prices than similar residential properties within the same area that were outside of the viewshed of a wind turbine.

No statistical inference to demonstrate that wind farms negatively affect rural residential market values in Chatham-Kent was apparent in this analysis."

### Excerpt from the Berkeley Lab property value study 2009:

"Specifically, neither the view of the wind facilities nor the distance of the home to those facilities is found to have any consistent, measurable, and statistically significant effect on home sale prices.

Wind facilities have had no widespread and statistically identifiable impact on residential property values. "

For full references for these studies, please contact us, or visit our website at www.NextEraEnergyResources.com/ content/environment/research.shtml

# Renewable Energy Approvals What is a Renewable Energy Approval?

Ontario's Green Energy Act requires larger wind power projects to undertake a Renewable Energy Approval (REA) process. Under this approval process, we will assess whether the project will have impacts on cultural and heritage resources and the natural environment

### **Overview of the Approval Process**



(e.g. significant habitat, areas of natural scientific interest, etc). If potential impacts are found, we will determine how changes to our design can reduce, eliminate or mitigate the potential effects. Members of our development team will be active in your area over the next several months conducting these studies.

The Green Energy Act has established setbacks (the distance between a proposed turbine location and a specific feature) for people's homes, roads, wetlands, watercourses, woodlots, parks and conservation areas, and a variety of other landscape features to ensure that wind projects are protective of people's health, livelihood and the natural environment. It is our responsibility during the REA to ensure that we have a complete understanding of the local environment and of the human landscape - the locations of homes, businesses, schools and heritage resources. Our communication and consultation program has been established specifically to seek assistance and knowledge from community members to ensure that our understanding is correct.

Many of the previous requirements of the Ontario Planning Act and Environmental Assessment Act are incorporated into the REA process. All project submissions for the REA will be reviewed by the Ontario Ministry of the Environment. Other agencies, including the Ministry of Natural Resources, the Ministry of Transportation, the Ministry of Tourism and Culture and local conservation authorities provide input to the approval process.

The flow-chart to the left provides an overview of the approval process and highlights formal opportunities for public input throughout the process.



### Contact Us

#### Here's how:

- Call our toll-free information number: 1.877.257.7330
- Send an email with your comments to: Bluewater.Wind@NextEraEnergy.com Goshen.Wind@NextEraEnergy.com Jericho.Wind@NextEraEnergy.com
- ✓ Send written comments or questions to: NextEra Energy Canada, 5500 North Service Road, Suite 205, Burlington ON, L7L 6W6

Check out the proposal website for more information: www.CanadianWindProposals.com

We value your privacy

Information will be collected and used in accordance with the Freedom of Information and Protection of Privacy Act, and will be maintained on file for use during the planning process for the proposed wind centres.

# Wind Energy News Bluewater • Goshen • Jericho

Volume 2, Fall 2011

# **FIT Contracts Awarded**

On July 4, 2011, the Ontario Power Authority announced a new set of Feed-in-Tariff (FIT) contract awards for renewable energy projects in Southwestern Ontario. NextEra Energy Canada is pleased to announce that the Bluewater, Goshen and Jericho Wind Energy Centre projects were offered and have accepted contracts. The FIT program in Ontario has been a key driver for the billions of dollars that national and international renewable energy companies have invested, or will invest, in the Province. This investment will result in the creation of thousands of jobs. By 2015, our company alone expects to invest more than \$1.5 billion as part of this program.

We are excited that the projects have now secured 20-year contracts for the sale of clean, renewable power. Our next steps include continuing to coordinate environmental field work and to seek public input. While the projects have secured a contract to sell electricity, the environmental permitting process for the Renewable Energy Approval (REA) will continue. Each of the projects in this region are in mid-phase of the development process with several assessments of the natural and cultural heritage ongoing.

# **Economic Benefits**

Our wind projects will result in jobs, revenue for local government, landowners and service businesses, spending on supplies and other indirect and spin-off benefits during the construction and operation stages.

### Major Economic Impact New Job Opportunities

Total estimated capital expenditures:

- ✓ \$250 million as a result of the Goshen project in Huron County
- ✓ \$170 million as a result of the Bluewater project in Huron County
- ✓ \$400 million as a result of the Jericho project in Lambton and Middlesex Counties
- ✓ \$680 million as a result of other projects across Ontario
- = \$1.5 billion Ontario total

- Over 3,000 new on site, supply chain, and induced jobs (e.g. accounting, manufacturing, etc.) are expected to be generated for Ontario during construction.
- These jobs are expected to translate into over \$194 million in earnings for people across Ontario during the two-year construction period.
- Our planned 616 MW of wind power are expected to provide over 100 full-time, skilled jobs in Ontario during each of our 20 years of operation.
- These jobs are expected to result in almost \$7 million in annual labour salaries paid to Ontarians during operations.



### About NextEra Energy Canada

- NextEra Energy Canada is a subsidiary of NextEra Energy Resources, LLC., the largest generator of wind energy in North America. NextEra Energy Canada is focused on developing electricity derived from clean, renewable sources throughout the provinces.
- NextEra Energy Resources operates approximately 85 wind projects in 17 states and 3 provinces with more than 9,500 wind turbines providing over 8,500 megawatts of generation.
- Approximately 95 percent of our electricity comes from clean or renewable sources.
- Visit www.NextEraEnergyCanada.com





# NextEra's Renewable Energy Approvals Where are we in the process?

### **The Approval Process**

The Green Energy Act in Ontario requires our projects to undertake a Renewable Energy Approval (REA) process. Under this approval process, we are assessing whether our proposed projects will have impacts on cultural and heritage resources and the natural environment (e.g. significant habitat, areas of natural scientific interest). Members of our consulting team have been active in your area over the past several months conducting these studies (see page 3).

The Ontario Ministry of Natural Resources (MNR) and the Ontario Ministry of the Environment (MOE) will review the results of our impact assessment when we submit our REA application. The flow-chart to the right provides an overview of the approval process and highlights formal opportunities for public input throughout the process. We welcome feedback and questions about our projects at any time. Our contact information is available on page 4.

f potential impacts are found, we will determine how changes to our design can reduce, eliminate or mitigate the potential effects. Setbacks (the distance between a proposed turbine location and a specific feature) have been established under the Green Energy Act for people's homes, roads, wetlands, watercourses, woodlots, parks and conservation areas, and a variety of other landscape features. These setbacks ensure that wind projects take into account the wellbeing of people and the natural environment. It is our responsibility during the REA process to ensure that we have a complete understanding of the local environment and of the human landscape – the locations of homes, businesses, schools and heritage resources. Throughout the REA process, we will communicate and consult with the communities near our proposed projects to ensure we hear their comments and address any concerns or questions.

### At a Glance



# Cultural Heritage & Natural Resources Study Updates

Scientists are conducting environmental investigations in the areas surrounding our proposed projects. This fall, we will be using the results of these investigations to assist us in determining the locations of turbines in each of the project areas.

### Archaeology and Cultural Heritage

An initial desk-top archaeological study, called a Stage 1 Archaeological Assessment, was carried out in the fall of 2010. A Stage 2 Archaeological Assessment is currently underway. As part of the Stage 2 Assessment, archaeologists are conducting "pedestrian surveys", which involve walking ploughed fields at five metre intervals to record observations and collect any artefacts that are found. The results will determine whether further archaeological assessments (Stage 3) are required. A Cultural Heritage Assessment is also being carried out to look at built heritage and cultural heritage landscape resources in the area.

This work is being completed by licensed archaeologists according to the Ministry of Tourism and Culture (MTC) standards and guidelines. Oversight is also being provided by the Oneida Council of Chiefs.

An Archaeological Assessment Study and Cultural Heritage Assessment report will be submitted to the MTC for review and comment. It will outline any potential negative effects on protected properties, archaeological resources and heritage resources in the study area and propose mitigation measures during construction, operation and decommissioning.

### **Amphibians**

Throughout the spring of 2011, three rounds of amphibian studies were completed to identify the diversity and abundance of species in the habitat surrounding the proposed wind farms. As part of the studies, biologists recorded the number of frog calls, the types of species heard and the proximity of the amphibians to wetlands.



#### **Aquatics: Fish & Waterways**

Aquatic studies are underway to assess how the proposed NextEra Wind Energy Centres may affect local watercourses within 120 metres of potential project infrastructure. The studies will assess possible effects to fish and water quantity. General watercourse assessments are being conducted to look at effects of the turbines themselves and more detailed studies are being carried out to examine possible road and hydro corridor effects. The aquatic ecologists carrying out this research have worked closely with the MNR and the local conservation authorities to ensure they have the required background information, such as fish community records, mapping and available water quality data. The results of the aquatics studies will be submitted to the local conservation authorities to obtain the required permits and to the Ministry of the Environment. It is anticipated that the aquatics work will be completed this fall.

#### **Bats & Birds**

We are working with biologists to assess potential effects on bats and birds. Based on this information, project infrastructure will be carefully designed to minimize potential effects. Tree-covered habitat within the study area was scanned by researchers during the day for suitable bat habitat to set up bat monitoring equipment. The monitoring is conducted using an acoustic microphone and battery powered electronic recording equipment. Visual bat surveys are also carried out over 10 evenings, between sunset and midnight. During the visual bat surveys, biologists examine the woodlands with spotlights and microphones to observe and record bat activity. The bat studies, carried out by experienced biologists, consisted of two seasons of bat monitoring. The studies were completed this summer.

We carried out avian (bird) studies over four seasons to profile species and look at migration, breeding, behaviour and habitat. The monitoring protocol was developed to meet and exceed the requirements of the Canadian Wildlife Service and the Ontario MNR guidelines for wind power projects.



Biologist completing field studies

The bird surveys were conducted by establishing survey plots, visual and sound observation, and a search of habitat in the study area. The last of the studies wrapped up this summer.

### **Natural Heritage**

Wetlands, woodlots, and wildlife habitat within 120 metres of the proposed projects are being evaluated to determine their significance. An Ecological Land Classification (ELC) is also underway using mapping, aerial photography and GIS. All studies include a document review and site investigations of the different land types to establish significance. Based on the findings, we will ensure proper setbacks from any significant features and will complete an Environmental Impact Study (EIS) to show how any potential negative environmental effects will be addressed. These studies are being conducted by experienced field staff according to the Ministry of Natural Resource's guidelines for Natural Heritage Assessment (NHA).



# **The Proposed Projects**

### Construction is planned to start in 2013 and continue through 2014. Bluewater

The Bluewater Wind Energy Centre is expected to have a maximum generating capacity of up to 60 megawatts. The wind farm will be located in Bluewater Township, with potential electrical interconnection extending into Huron East. At the maximum generating capacity, the Bluewater Wind Energy Centre will produce enough energy for approximately 15,000 homes in Ontario.



# **Contact Us**

Here's how:

- Call our toll-free information number:  $\checkmark$ 1.877.257.7330
- $\checkmark$ Send an email with your comments to: Bluewater.Wind@NextEraEnergy.com Goshen.Wind@NextEraEnergy.com Jericho.Wind@NextEraEnergy.com
- Send written comments or questions to:  $\checkmark$ NextEra Energy Canada, 5500 North Service Road, Suite 205, Burlington, ON, L7L 6W6

Check out the proposal website for more information

www.NextEraEnergyCanada.com

#### We value your privacy

Information will be collected and used in accordance with the Freedom of Information and Protection of Privacy Act, and will be maintained on file for use during the planning process for the proposed wind centres.

### Goshen

The Goshen Wind Energy Centre is expected to have a maximum generating capacity of up to 102 megawatts. The wind farm and potential electrical interconnection will be located in Bluewater and South Huron Townships in Huron County. At maximum generating capacity, this project will provide electricity for up to 25,500 homes.



### Jericho

The Jericho Wind Energy Centre is expected to have a maximum generating capacity of up to 150 megawatts. The wind farm will be located in the Municipality of Lambton Shores, with potential electrical interconnection extending into North Middlesex, Middlesex County. At maximum capacity, this project will provide energy for more than 37,500 homes.



# Jericho WIND ENERGY CENTRE **NEWS**

**VOL. 2** 



## WELCOME

As you may be aware, Jericho Wind, Inc., a subsidiary of NextEra Energy Canada, was selected by the Ontario Power Authority (OPA) to develop a wind energy project in Lambton and Middlesex Counties, Southwestern Ontario. The proposed wind turbines will be located on privately-owned land to generate clean, renewable energy, producing no air pollutants and allowing landowners to use their land as they did before.

In November 2011, we hosted a public meeting at the Ailsa Craig Community Centre. There were approximately 200 participants in attendance. We were pleased that so many people showed up to ask questions and learn about the project. In this newsletter, we hope to share with you and answer the most frequent questions that were asked during the public meeting.

While we believe wind is a safe and reliable energy source, we are aware there are many complex issues that require ongoing consideration and discussion. We are committed to continuing to work closely with the residents of Lambton and Middlesex Counties. Your voice counts and your opinion matters – we hope this and future newsletters provide valuable information, but we also encourage you to share any comments, questions or suggestions for topics you would like to see included in future newsletters.

• WRITE TO:

NextEra Energy Canada,

Burlington, ON L7L 6W6

5500 North Service Road, Suite 205

Kind regards,

Ross Groffman Director Jericho Wind Energy Centre

#### **CONTACT US**

For more information or to contact us directly:

- CALL OUR TOLL-FREE NUMBER: 1.877.257.7330
- EMAIL: Jericho.Wind@NextEraEnergy.com
- VISIT OUR WEBSITE: www.NextEraEnergyCanada.com/projects/jericho.shtml

**SPRING 2012** 

#### IN THIS EDITION

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- Stray Voltage Explained
- Frequently Asked Questions
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- Why Wind?

#### ABOUT NEXTERA ENERGY CANADA

- NextEra Energy Canada is a subsidiary of NextEra Energy Resources, LLC, the largest generator of wind energy in North America.
- NextEra Energy Resources operates 90 wind projects in 3 provinces and 17 states with more than 8,800 wind turbines providing over 8,500 megawatts of generation.
- NextEra Energy Resources is focused on developing clean, renewable energy and approximately 95 per cent of our electricity comes from clean or renewable sources.



We value your privacy. Information will be collected and used in accordance with the Freedom of Information and Protection of Privacy Act, and will be maintained on file for use during the planning process for the proposed wind centres.

## **ABOUT THE JERICHO WIND ENERGY CENTRE**

#### LOCATION:

The Jericho Wind Energy Centre will be located on private lands in Lambton and Middlesex Counties, Southwestern Ontario.

This location has been specifically chosen because of the site's potential to capture energy from wind at minimal impact to the local community and environment. As we move forward, we are committed to incorporating the highest standards in design and will ensure factors related to health, the natural environment, and local economy are considered as a part of our planning and construction processes.

#### **PROJECT STATUS:**

We are currently in the process of conducting ongoing archeological and biological field studies as part of the REA process. Of note: Bird, bat and other wildlife and vegetation studies will be underway at various locations during 2012. Reports that describe what studies have been done will be available this fall.

#### ANTICIPATED ECONOMIC IMPACT:

For Lambton and Middlesex Counties, we anticipate the project will have a positive economic impact over its 20 year lifespan driving jobs, salaries, increased tax revenues and business activity for other industries in the area. We estimate the proposed project will contribute \$220 million in corporate income tax and \$30 million in property taxes to the local County in addition to approximately \$30 million in landowner payments.

#### **QUICK FACTS:**

- We anticipate the Jericho Wind Energy Centre will generate up to 150-megawatts consisting of between 90 to 100 wind turbines.
- At maximum capacity, this will produce enough energy to power approximately 37,500 homes in Ontario.
- We estimate the project will create 250 construction jobs and 8-10 full time and local operations jobs.

# LATEST NEWS – TRANSMISSION LINES

### WHAT UPDATE CAN YOU PROVIDE ON THE TRANSMISSION LINES?

In our Community Update Meeting on November 10, 2011, we explained that the Adelaide, Bornish and Jericho Wind Energy Centres, located in Lambton and Middlesex Counties will share a transmission line.

As proposed, all transmission lines for all three projects will converge at a switching station, which will be located in the Bornish Project Area in North Middlesex, where the electricity will be directed by way of a 115 kV transmission line to an interconnect point on the existing 500 kV Hydro One line, located east of the proposed projects.

### WHEN CAN WE EXPECT TO SEE A FINAL TRANSMISSION LINE ROUTE?

NextEra Energy Canada is currently working with the municipality, local landowners, project engineers and biologists to identify a preferred route that takes into consideration local economic, geographic and social considerations.

The final proposed transmission line routes for the Jericho, Adelaide and Bornish Wind Energy Centres will be presented 60 days prior to the final public meeting; for Jericho, this meeting will likely take place in late 2012.



## **STRAY VOLTAGE EXPLAINED**

#### WHAT IS STRAY VOLTAGE?

Stray voltage results from the normal delivery and/or use of electricity - usually smaller than 10 volts - that may be present between two conductive surfaces. Stray voltage is related to power system faults and is generally not considered hazardous.

#### **DO WIND TURBINES CAUSE STRAY VOLTAGE?**

No. Wind energy has been incorrectly associated with stray voltage because wind turbines are often installed in agricultural areas. Stray voltage is not a consequence of wind energy, but rather of any projects that changes the use pattern of the existing system. As such, the turbines are not the root of the problem, but like any change to the system, may expose faults in that system. All types of generation, including wind generation, must fully comply with utility requirements to ensure that the electricity they supply is compliant with grid standards.

Stray voltage problems require on-site inspection for grounding problems, or examination of power quality issues with the distribution utility.

### WHAT IS BEING DONE TO MINIMIZE STRAY VOLTAGE ACROSS THESE TRANSMISSION LINES?

NextEra Energy Canada will adopt industry best practices at all times to minimize the risk of stray voltage and ensure our projects are built and maintained within acceptable levels as prescribed by the local safety code.

While NextEra Energy Canada does not intend to connect the Jericho Wind Energy Centre to the local distribution system that serves barns and houses in the area, we are aware that transmission lines in close proximity to local distribution lines can induce current on the distribution lines if not designed properly. To address this, we are already working closely with Hydro One to minimize the impact on local distribution customers.

# **FREQUENTLY ASKED QUESTIONS**

Please find below an outline of some of the key issues discussed at the Ailsa Craig Community Update Meeting held in November 2011. If you would like any further information, please do not hesitate to contact us.

## WHAT IMPACT DO WIND TURBINES HAVE ON OUR HEALTH?

NextEra takes concerns about human health very seriously.

Although much has been written about health effects associated with wind turbines, we have found no credible, scientifically peer-reviewed study that demonstrates a link between wind turbines and negative health effects.

In May 2010, the Chief Medical Officer of Health of Ontario conducted a report titled "The Potential Health Impacts of Wind Turbines" which states<sup>1</sup>:

"Scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects. The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct health effects, and there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects."

In *"Health effects and wind turbines: A review of the literature"*, Canadian based Loren D. Knopper and Christopher Ollson state:

"To date, no peer reviewed articles demonstrate a direct causal link between people living in proximity to modern wind turbines, the noise they emit and resulting physiological health effects."<sup>2</sup>

Canadian Wind Energy Association's "*Wind Turbine Sound and Health Effects: An Expert Panel Review*" states:

- Sound from wind turbines does not pose a risk of hearing loss or any other adverse health effect in humans;
- Sub-audible, low frequency sound and infrasound from wind turbines do not present a risk to human health;
- Some people may be annoved at the presence of sound from wind turbines.
  Annoyance is not a pathological entity; and
- A major cause of concern about wind turbine sound is its fluctuating nature. Some may find this sound annoying, a reaction that depends primarily on personal characteristics as opposed to the intensity of the sound level.<sup>3</sup>

#### DO WIND TURBINES CAUSE SHADOW FLICKER?

When the sun is in a particular position behind a turbine, and there is no cloud cover, rotating wind turbine

blades may cast shadows in the windows of neighboring properties creating what is known as a 'flickering' effect. Ontario's 550m minimum setback from non-participating homes helps minimize this effect, but it may not completely remove it. This phenomenon can be very easily predicted and, if necessary, mitigated by planting trees or installing awnings in the line of sight.

Fundamentally, shadow flicker is an aesthetic rather than a safety issue, but we recognize that it could be disruptive. NextEra will have a construction and operations communication program in place to address any concerns related to the projects, should they arise.

#### HOW LOUD ARE WIND TURBINES?

With the evolution of modern wind turbine technology, the mechanical noise from the turbine is almost undetectable. Turbines only run when the wind is blowing and the sound of the wind masks most of the noise.

What's more, wind projects in Ontario are under strict sound guidelines, as prescribed by the Ministry of the Environment. For residences in the area, the Jericho project will be quieter than many common sounds – such as a quiet room.

If concerns regarding sound levels arise, we commit to investigating and, if necessary, remedying this situation as soon as possible.

#### WILL THIS PROJECT AFFECT THE PROPERTY VALUES OF OUR HOMES?

Multiple studies<sup>4</sup> have found that there are not significant changes to property values of homes caused by the existence of a wind facility in the area.

According to the 2010 study Effect on Real Estate Values in the Municipality of Chatham-

Kent. Ontario:

"In the study area, where wind farms were clearly visible, there was no empirical evidence to indicate that rural residential properties realized lower sale prices than similar residential properties within the same area that were outside of the viewshed (the area in which the turbines can be seen) of a wind turbine. No statistical inference to demonstrate that wind farm negatively affect rural residential market values in Chatham-Kent was apparent in this analysis."

<sup>1</sup> The report can be found at: http://www.health.gov.on.ca/en/public/ publications/ministry\_reports/wind\_turbine/wind\_turbine.pdf

 $^{2}\,\mbox{The report can be found at: http://www.ehjournal.net/ content/10/1/78$ 

<sup>3</sup>The report can be found at: http://www.canwea.ca/pdf/talkwind/ Wind\_Turbine\_Sound\_and\_Health\_Effects.pdf

<sup>4</sup> For example, see: Ernest Orlando Lawrence and Berkeley National Laboratory - The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis (Dec 2009) and CanWEA - Wind Energy Study - Effect on Real Estate Values in the Municipality of Chatham-Kent, Ontario (Feb 2010)



### THE RENEWABLE ENERGY APPROVAL PROCESS

Proposed wind and renewable energy projects in Ontario must go through an approval process regulated by the Ministry of the Environment and the Ministry of Natural Resources. Under the Renewable Energy Approval (REA) process, a proposed wind project must show that it meets the guidelines as set out by Ontario's Green Energy Act.

As part of the REA process, we are undertaking a number of comprehensive studies that assess how the proposed project will impact the cultural and heritage resources and natural



environment as well as the local community. This includes the Natural Heritage Assessment Report, which will be submitted to the Ministry of Natural Resources for review and approval as well as the Environmental Effects Monitoring Plan, which will assess potential impacts on bird and bat species during the first three years of the wind turbines' commercial operations.

As part of this, we will be consulting you and your local community as we conduct site studies and set-up public meetings and dropin sessions – very much like the Ailsa Craig Community Update Meeting held in November. As we move forward, we will enhance our design to reduce, eliminate or mitigate potential effects, to the greatest extent possible, which may be identified during this process.

When we complete the studies, NextEra Energy Canada will provide the public with the studies 60 days prior to our final public meeting. After we have received your comments, we will submit the REA application for review by the Ministry of Environment. Other agencies, including the Ministry of Natural Resources, the Ministry of Transportation, the Ministry of Tourism, Culture and Sport and local conservation authorities also provide input to the approval process.

#### OVERVIEW OF THE APPROVAL PROCESS



# WHY WIND?

The Ontario Government has identified a need to increase clean, renewable energy generation in Ontario through renewable energy projects including solar farms and wind turbines. This is intended to reduce our province's dependence on traditional forms of energy while boosting investment and creating local jobs.

Not only are wind turbines considered 'clean energy' as they help reduce our dependence on fossil fuels without producing harmful waste, greenhouse gases or water emissions, they can also bring a host of benefits to your local community.

While the cost of fuel for many forms of conventional energy are volatile, wind energy only relies on the free and limitless wind. This means that once a wind farm is built, the price of electricity is stable for the lifespan of the wind turbine – approximately 20-30 years.

Developments in technology have also resulted in more efficient wind turbine production and the last twenty years has seen the cost of wind-generated electricity drop significantly. On top of this, there has been a threefold increase in the amount of power wind turbines can generate, making wind an increasingly cost-effective energy resource.

The construction and maintenance of wind turbines also benefits your local community as they stimulate economic growth.

BY 2018<sup>5</sup>, IT IS ANTICIPATED THAT THE WIND ENERGY SECTOR WILL ATTRACT BILLIONS OF DOLLARS OF PRIVATE INVESTMENTS TO ONTARIO, AND ONCE THE WIND TURBINES ARE INSTALLED AND PRODUCING POWER, MORE THAN HALF OF THIS – APPROXIMATELY \$8.5 BILLION<sup>6</sup> – WILL BE SPENT LOCALLY IN COMMUNITIES ACROSS THE PROVINCE.

Looking ahead, when the wind turbines are decommissioned, there is no hazardous

IN ONTARIO ALONE, LANDOWNERS ARE EXPECTED TO BENEFIT FROM OVER \$1 BILLION IN LEASE PAYMENTS OVER THE 20-YEAR LIFESPAN OF PROJECTS – ENSURING THAT THEY AND THEIR FAMILIES CAN CONTINUE TO RELY ON THE LAND AS A VALUED SOURCE OF INCOME FOR GENERATIONS TO COME.

clean-up and newer, more efficient models could potentially take their place, making the cost of wind energy even more economical.

Lastly, wind energy diversifies and increases farmers' incomes as they continue to rely on traditional land use while receiving payments to lease their land. This helps stabilize the overall economic prosperity of the community, while allowing traditional land-use practices to continue undisturbed.

For these reasons, we believe wind turbines are a win-win situation for all.

<sup>6</sup> Economic Impacts of the Wind Energy Sector in Ontario

<sup>&</sup>lt;sup>5</sup> ClearSky Advisors