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Meeting Summary – Bornish Community Liaison Committee No.5

Subject: Bornish Wind Energy Centre, Community Liaison Committee (CLC): Meeting No.5

October 18, 2016 6:00pm – 8:00pm

North Middlesex Community Centre
224 McLeod
Parkhill, ON

Present:

CLC Committee Members

- Muriel Allingham, Robert (Bob) Lewis, Gary Zavitz, Adrian Cornellissen, Lucy Hendrikx

NextEra

- Amanda Gittens, *Business Management*; Jason Gaynor, *Business Management*; Peter Miller, *Regional Site Manager*; Kevin Bill, *Site Manager*; Derek Dudek, *Technical Services*; Jeff Damen, *Construction*

Natural Resources Solutions Inc. (NRSI)

- Charlotte Teat, Terrestrial & Wetland Biologist

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- Avril Fiskens, Adam Wright

Absent:

- Mark Cadman, Dean Jacobs, Chuck Hall, Barb Shea



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Item Discussed	Action
<p>1. Introductions</p> <p>Avril Fisken (Chair) welcomed the Community Liaison Committee (CLC) and members of the public to the 5th CLC meeting for the Bornish Wind Energy Centre.</p> <p>The Chair introduced herself and the CLC Coordinator, Adam Wright, and invited CLC members to introduce themselves.</p> <p>CLC Members</p> <ul style="list-style-type: none"> • Lucy Hendrikx • Gary Zavitz • Adrian Cornellison • Muriel Allingham • Bob Lewis <p>NextEra</p> <ul style="list-style-type: none"> • Amanda Gittens, <i>Business Management</i> • Jason Gaynor, <i>Business Management</i> • Peter Miller, <i>Regional Site Manager</i> • Kevin Bill, <i>Site Manager</i> • Derek Dudek, <i>Technical Services</i> • Jeff Damen, <i>Construction</i> <p>Consultants</p> <ul style="list-style-type: none"> • Charlotte Teat, NRSI <p>The Chair outlined the volunteer CLC members present at the meeting noting that they have each signed the Charter for the Bornish CLC meetings. The Chair also reviewed the main aspects of the Charter as they relate to CLC members and NextEra representatives and asked that everyone keep these in mind throughout the course of the meeting.</p> <p>The Chair reviewed the agenda for the meeting (pg.2) and noted that the meeting will be facilitated to provide members of the public with 15 minutes at the end of the meeting to ask questions. Noting there were no questions, the Chair proceeded to address the parking lot</p>	



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<p>items and questions raised since the last CLC meeting.</p>	
<p>2. Parking Lot Items and any Questions/Comments Raised since the last CLC Meeting</p> <p><i>Parking Lot Item #2 – Provide further information regarding the decommissioning process.</i></p> <ul style="list-style-type: none"> • Where NextEra has decommissioned a site, the blades have been cut up on-site and hauled to a disposal (landfill) facility. At present, there are facilities in the U.S. that recycle fiberglass. By the time we would decommission this project, it is expected that recycling of fiberglass will be much more common and that we would be able to avoid putting it in a landfill. • More information is provided in the Decommissioning Plan available on the NextEra website http://www.nexteraenergycanada.com/projects/bornish.shtml <p>BL: Are the blades only made of fiberglass, are there other components? (PM) There are other components including glass and metal, at the time of de-commissioning (20 years from now) we expect there to be new technology that will allow for recycling of blades in a more fulsome manner.</p> <p>BL: How long have Industrial Turbines been built for, 20 or 30 years and this is the best option that we have so far? DD – I know there are projects where blades are being recycled and used for road bed material but as Peter noted, we cannot know what technology will be available at the time the project is decommissioned. Because of this it’s difficult to predict what uses blades and all turbine components will have once they are decommissioned 20 years from now.</p> <p><i>Parking Lot Item #3 - How many acres of land will be used by the Bornish project?</i></p> <ul style="list-style-type: none"> • Parkhill substation: 8.74 acres • Bornish substation: 2.72 acres • Bornish Operations and Maintenance Building: 2.1 acres • Service roads (including Parkhill, Bornish, O&M entrance) and 	



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<p>turbine foundations: 29.49 acres</p> <p>Total acres: 43.05</p> <p>AC - Are these lands owned by NextEra or leased? We own the lands where the substations and O&M building are located, but lease lands where turbines, access roads, and cabling are located from the participating landowners.</p> <p><i>Parking Lot Item #4 – More details on the type of landfill sites used for the project.</i></p> <ul style="list-style-type: none">• NextEra follows all requirements and regulations regarding waste disposal and are happy to answer any specific questions if the CLC members have any. <p><i>Parking Lot Item #5 – Details on supply in peak demand times</i></p> <ul style="list-style-type: none">• The following IESO link contains information with regard to peak demand over time<ul style="list-style-type: none">○ http://www.ieso.ca/Pages/Power-Data/default.aspx• Any questions relating to supply during peak demand times are best answered by the IESO <p><i>Parking Lot Item #6 – NextEra to provide link to Vestas study with regards to environmental footprint of typical wind project.</i></p> <ul style="list-style-type: none">• Hard copies of the Vestas study were provided at the CLC#5 meeting (link also provided below)<ul style="list-style-type: none">○ https://www.vestas.com/~media/vestas/about/sustainability/pdfs/lca_v112_study_report_2011.ashx <p>BL – Is this report stating that the carbon footprint of a specific turbine was carbon neutral or that the project was carbon neutral? (AG) – The authors of the report studied a 2 megawatt (MW) turbine and determined that the turbine offered a net benefit within five to eight months of being brought online.</p> <p><i>Parking Lot Item #7 – What factors is IESO comfortable with, 10 to 15 percent penetration?</i></p> <ul style="list-style-type: none">• Any questions relating to the grid in Ontario are best answered by the IESO. With this in mind we have provided the following information.	
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- Based on a combination of IESO data, Ontario electricity generation in 2015 was provided by:
 - 60% nuclear
 - 24% hydroelectric
 - 10% natural gas
 - 6% wind
 - <1% solar
 - <1% bioenergy

GZ - Is that capacity amounts or supplied amounts?

DD – This is supplied amounts.

MA - Can you explain life cycle assessment?

Avril Fischen clarified that it is a third party on a typical wind energy facility study completed independent of NextEra. There was a request made prior to the meeting to provide the study but since it was completed independent of NextEra, NextEra would not be able to speak to the methodologies.

GZ – I want to qualify things, this study was completed in 2011 and was based on VESTAS equipment (Bornish project does not use VESTA turbines). This being said there are qualitative differences but in general this report shows overall an example of a life cycle assessment.

MA – Is there a requirement to complete a study for the Bornish project?

DD – There is no study requirement for the Bornish project. To your previous point, the carbon lifecycle assessment takes into account impacts related to the project from cradle to grave (manufacturing, construction, installation, operation, maintenance and retirement). The report states that in 5-8 months the carbon footprint is neutral.

BL – This deals with carbon, but what about other items such as dangerous metals?

DD – I am not sure if this study looked at those items.

GZ – Just looking at the reports there seems to be some related information on page 35/36 regarding toxicity.

AF – Is there a contact of the person who wrote report?

<p>AG – There is a link to the report on the slide deck and people can follow up that way with the authors.</p> <ul style="list-style-type: none"> • https://www.vestas.com/~media/vestas/about/sustainability/pdfs/lca_v112_study_report_2011.ashx 	
<p>3. Monitoring and Mitigation measures</p> <p>The chair then asked Charlotte Teat to speak to Monitoring and mitigation measures for the Bornish project.</p> <p>Species-At-Risk (SAR) Monitoring</p> <ul style="list-style-type: none"> • Species at Risk monitoring has been conducted in accordance with the Operational Mitigation Plan since the project became operational in July 2014 • All 45 turbines are searched at least once a month from May-October • Species at Risk Monitoring continues for the life of the project <p>Bird and Bat Monitoring</p> <ul style="list-style-type: none"> • Monitoring is conducted in accordance with requirements of the REA and MNRF Guidelines • Mortality monitoring began May 1, 2015 • Turbine searches occur twice weekly from May 1st through October 31st, and raptor surveys occur weekly from November 1st through November 30th • Correction factors are applied in order to calculate overall estimated mortality rates across the project • An annual report is provided to MNRF by March 1 following each year of monitoring • A minimum of 3 years of monitoring is required <p>Report Summary available on NextEra Energy Canada website, Bornish page:</p> <ul style="list-style-type: none"> • http://www.nexteraenergycanada.com/pdf/bornish/BornishBirdBatReports/Bornish2015BirdBatMonitoringSummary.pdf <p>The Chair asked if there are questions.</p> <p>AC – Regarding bird and bat mortalities do you have any numbers available?</p> <p>CT – I have numbers available for 2015 but not for the current year.</p>	

To confirm, there were 14 turbines that were searched weekly, and the other turbines (31) were searched monthly.

Results

- 20 bird mortalities at the 14 turbines (landbird species)
 - 2.17 birds per turbine per year, which is below the annual threshold (14 birds/turbine/year).
- 88 bat mortalities at the 14 turbines (both resident and migratory species)
 - 9.01 bats per turbine per year, which is below the annual threshold (10 bats per turbine/year).
- 6 raptor mortalities at the 14 turbines
 - 0.42 is above the threshold of 0.2 raptors per turbine/year
 - Mix of species, including red-tailed hawks and turkey vultures, no eagles.

GZ – With respect to bat mortalities, is there a cause for mortality, do you know why this is happening?

CT – At this point we are not able to determine the cause of death of mortalities that we document, whether these are being caused by a collision, barometric trauma or another cause.

GZ – Wouldn't it be obvious which mortalities are collisions vs. barometric trauma?

CT – Not always, as sometimes the carcasses are not in good enough condition to determine the exact cause. Further laboratory analysis would be required to determine the cause of death of each mortality.

BL – When you cross the threshold, what is the mitigation?

CT – We have to undertake studies (spring and fall) and map flight paths/corridors and submit the results of these studies to the MNRF. Resulting mitigation could include operational mitigation at turbines or groups of turbines during certain times of the year.

MA – What is the methodology for the two year study?

CT – We have completed three visits (spring and fall) at point count locations where there were mortalities at nearby turbines. We are documenting any areas or habitats that may be resulting in concentrations of raptors. Additionally, we are mapping the flight

paths of the birds so we have a better sense of the flight patterns of raptors in the area.

MA – How do you map the flight paths?

CT – We have a hard copy map and record the flight paths of birds by marking lines on the map. We continue to build on this map throughout the course of the study to get a better understanding of flight paths in the area.

MA – How do you choose the 14 turbines that are monitored more frequently?

CT – We worked with the Ministry of Natural Resources and Forestry (MNRF) to select turbines that are representative of all habitats in the project area, as well as geographic areas, e.g. north, south, east and west.

MA – Will the 14 turbines that are monitored change over the course of the 2 year period?

CT – No, the 14 turbines stay the same for the entire research period.

MA – Seems like there is a lot of information that is being missed if you only focus on the 14 turbines?

CT – To confirm, we monitor the other thirty-one turbines once a month and the 14 turbines every two weeks to ensure we capture information from all of the turbines.

BL – The 14 turbines that are monitored more frequently, did they have raptor mortalities or did you avoid monitoring these turbines?

CT – The 14 turbines were selected before the results and before we knew of the mortalities, so these 14 turbines have remained consistent.

AF – To confirm, is there standard monitoring and then additional monitoring for raptors?

CT – Yes, that is correct.

BL – So there are mortalities but you only monitor in certain timing windows, how does that work?

CT – The MNRF requires a two year period study to get a better understanding of where the issues are.



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<p>MA – What about other projects, what are mitigations? CT – Operational mitigation can be employed such as turning turbines off during certain times of the year.</p> <p>MA – Why wouldn't you use mitigation measures now instead of waiting two years? CT – We work with the MNRF to determine the best course of action for the entire life of the project.</p> <p>MA – Why are you waiting for a two year period when we know there is a problem? DD – We have to undertake this study so we can actually know how best to address the problem for the entire project.</p> <p>MA – The two year study seems like a way to avoid making changes. DD – We will take actions based on the scientific findings after the two year study is complete.</p>	
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4. Update from Operations and Maintenance

Avril invited Kevin Bill to provide an updated on Operations and Maintenance for the Bornish project.

Wind Energy Centre Reached Commercial Operation: August 15, 2014

- The facility has been operating well with an Availability Factor > 99%
- Bornish Wind employs five full-time employees as well as more than a dozen shared specialists in Ontario.
- Initial break-in maintenance was completed 500 hours after COD
- Six months after initial maintenance, a Minor Maintenance (lubrication and filters) was performed. Six months after Minor Maintenance, a Major Maintenance (greasing plus torquing bolts, generator alignment, blade alignment and yaw system inspection) is being performed right now
- Each year, turbines get a Minor Maintenance in the spring and a Major Maintenance in the fall, per the manufacturer's recommendation

MA – What maintenance is going to be required on the Hydro pole where a fatality recently occurred?

(PM) – Our hearts and prayers are with the family of this tragic accident. The relevant authorities are looking into this and we will do whatever we can to assist.

MA – It was a tragedy that was foreseen by people that this was a huge potential for this to occur. I think the governing bodies in place should be ashamed of themselves.

BL – To clarify there have actually been two fatalities, what about guardrails? [note: the second fatality did not involve NextEra Canada assets]

PM – Guardrails have been installed where it was determined there was a risk. When this study occurred, this area was not deemed a risk area. After the OPP concludes its report we can move forward to address if there is an ongoing safety risk.

JD – We had a 3rd party review undertake a clear zone analysis. Just

to clarify, these are guiderails not guardrails; sometimes this physical feature can present more issues than helping. The particular pole involved in this accident was studied and there were no mitigation measures noted. These studies were approved by the appropriate county and municipality bodies.

MA – We do not expect anything to be done as a result of these studies, as with everything studies will be done and all things will slide under the rug. This is sad for me and my community as this is not the end of these accidents.

The Chair asked if there were any other questions.

MA – How many turbines have been found to have issues with leaking oil?

KB – Up to this point we have had no issues with bearings or leaking oil for the Bornish project.

BL – I noticed that when the majority of turbines are not turning sometimes there is one or two that are running, can you tell me why?

PM – The turbines can be curtailed when the IESO determines that power is not needed at that time. So at times only 2 or 3 turbines are required to be operating. Just to clarify, NextEra has no input as to what power is requested, all we can do is provide the energy that is requested. So sometimes the turbines are in “park” mode where we have employed the mechanical brake or changed the pitch of the blade so it does not catch wind.

BL – I have heard that if the blades do not move they start to deform, is this true?

PM – I have not heard this, but I do know that it is hard on the machines to always have the brakes on.

BL – How do you get the ice and snow off?

PM – It comes off naturally with the conditions; we do not use de-icing devices for the Bornish project.

MA – How many noise complaints have you received?

DD – NextEra has received two formal noise complaints and investigated the complaints by visiting the turbines to determine if



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there was anything out of compliance. Nothing was noted to be out of compliance or running irregularly so no corrective action was taken.

MA – Where were the acoustic audits conducted, did you conduct acoustic testing inside a house?

DD – No this would not have occurred as there are protocols in place that stipulate where acoustic monitoring occurs.

AC – I have a question about groundwater, we have heard a bit about ground water contamination resulting from the foundation construction for other wind projects. Is this something that was a concern for the Bornish project?

DD – No this was a not a concern for the Bornish project as it is my understanding that this potential concern relating to groundwater was resulting from turbines that used pilings for the foundations which the Bornish project did not use.

AC – Do you have a policy in place for this issue?

DD – Currently we do not have a policy in place as this method for foundation construction was not used on the Bornish project.

AC – For the Grand Bend project it is my understanding that they employed a radar system to monitor planes that come within the area. As a good community member, is NextEra willing to consider installing these?

DD – We received this request from North Middlesex municipality recently and as such NextEra will review and respond.

GZ – I know Pattern was looking at placing shields on turbines, is this something you considered?

DD – We did look at this as a potential lighting mitigation measure and were in the process of testing this technology. However, in our discussions with Transport Canada it was learned that they do not support this type of technology as there were problems with mounting hardware that caused the shields to become dislodged, as well as issues relating to snow accumulation, birds nesting which resulted in the lighting beacons being blocked.

GZ – There is also an approach that the perimeter of the project has been lit, is this something we do?



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<p>DD / KB – I am not sure if just the perimeter is lit but for the Bornish project that is true that we do not light all the turbines. A lighting plan is developed and approved by Transport Canada.</p> <p>AC – An article in the Sarnia newspaper noted that the OPP was instituting a \$300 fee per turbine to monitor turbines and project infrastructure. If this does occur, who is responsible to pay that policing cost?</p> <p>DD – Before I can provide any comments on this potential action NextEra would like to see what the OPP is proposing.</p> <p>AC – It is my understanding that the OPP view it as a fee for service</p> <p>BL – Is this because there is so much vandalism etc. to the turbines?</p> <p>AC – This was not specified but I know that they are looking to address any services that are outside of the realm of normal police operations.</p> <p>DD – So this relates to increased fees for services that are deemed to be in excess of typical service?</p> <p>AC – Yes this is my understanding.</p> <p>BL – How much vandalism is occurring at the wind farms, is this reported to the police?</p> <p>KB – I can’t quantify the amount as it is somewhat scattered and doesn’t occur too often, this being said we report all incidents to the police.</p> <p>AC – Is there interest or plans for additional development in the area?</p> <p>DD – NextEra has no plans for additional turbine development in the area.</p> <p>Noting that there were no other questions from CLC members, the Chair opened the floor to members of the public.</p>	
<p>5. Question and Answer Period (15 minutes)</p> <p>As there were no additional questions from members of the public, the Chair asked Derek to provide contact information for ongoing access to Project related information.</p>	



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<p>6. Ongoing Access to Information</p> <p>Derek reviewed the contact information for the Bornish project</p> <p>NextEra Website:</p> <ul style="list-style-type: none"> – Project documents and information is available on NextEra’s website – Further communication may be posted on the website, via direct mail or through the media – Upon resolution of complaint, verbal and written correspondence will be provided to complainant as soon as possible – Information requests and complaints about the local operations and maintenance can be addressed to: <p>NextEra Energy Canada, LP 390 Bay Street, Suite 1720 Toronto, ON M5H 2Y2 Toll Free Phone: 1-877-463-4963 Email: bornish.wind@nexteraenergy.com Website: www.NextEraEnergyCanada.com</p>	
<p>7. Depositions, if any requests received</p> <p>The Chair noted that there were no depositions received for the 5th CLC meeting.</p>	
<p>8. Conclusion of the CLC</p> <p>Chair thanked the CLC members for their time spent attending meetings and reviewing CLC related materials. Noting there were no other questions or outstanding items, the Chair adjourned the meeting.</p>	