# MEETING MINUTES

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| **Subject:** | Port Ryerse Wind Farm (PRWF) Community Liaison Committee (CLC) Meeting 4 |
| **Date and Time:** | February 15, 2017 6:00pm – 8:00pm |
| **Location:** | Simcoe Recreation Centre Arena (Dogwood Room), 182 South Dr, Simcoe ON |
| **Our File:** | 16-3802 |

## Attendees

Heather Plewes, Boralex
Adam Rosso, Boralex
Jason Weir, Boralex
Stephanie Bujold, Boralex
Michael Gaudet, Boralex
Asier Ania, Boralex
Charlotte Teat, NRSI
Andrew Dean, NRSI (in audience)
Payam Ashitiani, Aercoustics
Larry Glaser, CLC Member
Alan Sheppard, CLC Member
Chris van Passen, CLC Member
Wally Faulkner, CLC Member
Steve Faulkner, CLC Member
Karla Kolli, Dillon Consulting (Chair and Facilitator)
Nadia Galati, Dillon Consulting (note taker)

## Regrets

Bob Lawrence, CLC Member
Nora Brown, CLC Member
Samuel Richard, Boralex

## Notes

### Discussion Items

## 1.0 Introductions & Meeting Structure

- CLC members introduced themselves to each other and the public members viewing in attendance.
- Facilitator provided an overview of the rationale for the CLC and explained the meeting framework.

## 2.0 Review of Past Minutes – CLC Meeting #3

- Last meeting was October 19, 2016 at the Simcoe Recreation Centre Arena.
- All action items from past meeting minutes have been addressed and outstanding items are covered in CLC Meeting #4 (this meeting).
- You can review CLC meeting minutes and CLC meeting presentations on the project website (http://www.boralex.com/projects/portryerse).

**Discussion Items**

## 3.0 Project Update

- Heather provided an overview of the project's status and introduced the Operations team.

## 3.1 Current status – Wind farm is operational

- PRWF achieved its Commercial Operation Date (COD) on December 9, 2016.
- The project is fully operational.

### a. Meet the Operations Team:

- Introduction of Operations team:
- Jason Weir, Site Manager
- Michael Gaudet, Wind Site Technician
- Josh Kleuskens, Wind Site Electrical Technician
- Stephanie Bujold, Environmental Manager

## 3.2.2 – Current Operations team activities on site:

- Maintenance is complete on turbines.
- Presently Operations team is monitoring turbines and working to ensure regulatory commitments are completed (i.e., bird and bat monitoring, acoustic monitoring, etc.)

## 3.2.3 Contact the PRWF

- The following are the ways in which the public can **contact Port Ryerse Wind Farm directly:**
- Phone: 1-855-363-6319
- Email: portryersewind@boralex.com
- Website: http://www.boralex.com/projects/portryerse

## 4.0 CLC #4 Guest Presenters

- For CLC meeting #4, Boralex invited guest experts from two of the project's consultants for the operations phase to talk about their areas of expertise, provide some information about the role they play on an ongoing basis, and answer any CLC questions:
- Natural Resource Solutions Inc. (NRSI): Charlotte Teat, Terrestrial & Wetland Biologist
- Aercoustics: Payam Ashtiani, Principal Acoustical Engineer

## 4.1 Natural Resource Solutions Inc. (NRSI)

- Natural Resource Solutions Inc. (NRSI) is an environmental consulting firm

consisting of biologists specializing in aquatic, terrestrial, and wetland biology.

- NRSI has extensive environmental monitoring experience on wind power projects in all stages of development throughout Ontario and Canada.
- NRSI will be completing the following post-construction surveys for the PRWF:
  - Avian and bat mortality monitoring;
  - Bald Eagle nesting and behaviour surveys; and,
  - Migratory landbird stopover and staging area surveys.

## 4.1.1 NRSI will be monitoring bird and bat mortality:

- Monitoring is conducted in accordance with requirements of the project's REA permit and MNRF Guidelines.
- All 4 turbines are monitored twice a week from May 1-October 31. This monitoring focuses on birds and bats. The turbines will then be monitored from November 1-November 30 once a week for raptors only.
- All 4 turbines are monitored once a week from February 15-April 30. This monitoring focuses on raptors.

## 4.1.2 Correction factors

- Correction factors are applied to post-construction monitoring to account for and calculate overall estimated mortality rates across the project based on:
- *Scavenger removal rate*: NRSI team will place test carcasses out for a 2 week period to give the team an idea about average scavenging activity that may be taking place by other animals.
- *Searcher efficiency* helps the team account for the consideration that searchers might not locate all mortalities due to human error.
- *Percent area search* - 50m area radius is the land around the turbine that is expected to be searched. Not all area may be physically searchable. The unsearchable amount of land is removed from the percent area searched variable. This is taken into account in the formula used to obtain the calculated mortality rates per turbine per year.
- Scavenger removal, searcher efficiency, and percent area searched are factored into the bird and bat mortality estimation.

## 4.1.3 REA requirements

- The project's REA permit requires a minimum of 3 years of post-construction monitoring:
- If any REA or MNRF Guideline threshold is exceeded, the approved mitigation measures will be implemented, as required.
- Raptors threshold is 2 raptors per wind power project (for projects with ,10 turbines);
- Bat threshold is 10 bats/turbine/per year;

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- Bird threshold is 14/landbirds/turbine/year;
- An annual Monitoring Report is provided to MNRF by March 1st, following each year of monitoring.

## DISCUSSION QUESTIONS:

**QUESTION: Who pays NRSI?**

- Boralex pays NRSI.

**QUESTION: What are the thresholds for Bald Eagles?**

- Any eagle mortality is reported to the MNRF within 24 hours and MNRF determines if any additional mitigation measures should be implemented.

**QUESTION: Where Is the bird/bat website? Is it a Boralex site?**

- There is a project website where all CLC meeting presentations and meeting notes are posted.
- The MNRF website has the thresholds for bird and bat mortality: https://dr6j45jk9xcmk.cloudfront.net/documents/2719/stdprod-088155.pdf
- The MNRF website also has bird and bird habitat guidelines: https://dr6j45jk9xcmk.cloudfront.net/documents/2718/stdprod-071273.pdf

**QUESTION: Who reviews and receives NRSI produced reports?**

- Boralex reviews the NRSI reports and then they are forwarded to the MNRF for review.

**QUESTION: Why does mortality monitoring not take place in winter?**

- The MNRF sets out the schedule for bird and bat mortality monitoring for wind energy projects in Ontario. Mortality monitoring for raptors is occurring at the Port Ryerse Wind Farm for the period of February 15-April 30 for a period of at least 3 years.
- The Natural Heritage Information Centre through the MNRF is the place to notify the Ministry of any rare wildlife sightings. (https://www.ontario.ca/page/report-rare-species-animals-and-plants)
- The annual monitoring report will also be posted to the Boralex project website.

**QUESTION: What is a raptor?**

- Raptors are birds that hunt other animals for their prey (i.e., turkey vultures, hawks, owls, falcons, etc.). Although turkey vultures are technically scavengers, they are included in the raptor category for mortality estimates.

**QUESTION: Bald eagles have moved their nest closer to the turbines. What will Boralex do about this? Who should the public contact about the Bald Eagle nests?**

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- Charlotte (NRSI) provided the member of the public her contact info for further review/discussion. However, interested individuals should direct any questions to the Project Manager for PRWF, Andrew Dean (NRSI), at 519-725-2227, adean@nrsi.on.ca
- The Natural Heritage Information Centre through the MNRF is the place to notify the Ministry of any rare wildlife sightings.

## ACTION: Boralex to monitor location of new Bald Eagle nests as per REA conditions.

**QUESTION: What does *monitoring* mean**?

- During mortality monitoring, NRSI team members search under each turbine for carcasses of birds and bats for the MNRF set period of time (20-40 minutes).

**QUESTION: Who are the people sitting near turbine 01 who appear to be watching the bald eagle nests? Is it Boralex staff or consultants?**

- Boralex confirmed they have no staff or consultants retained to do this at the time of the CLC meeting. Bald eagle behaviour and nest monitoring is occurring from approximately February 15 to August 15.

**QUESTION: What happens if the mortality thresholds are exceeded?**

- MNRF specified steps are taken if thresholds are exceeded such as, the following year turbine speeds are adjusted so that the turbines do not spin at lower wind speeds when bats would be in flight.

**QUESTION: What area is monitored for mortalities?**

- The turbine mortality monitoring area is a 50m radius from the turbine base, and was determined in consultation with the MNRF.

**QUESTION: What happens with landbird migratory stopover monitoring?**

- Landbird migratory stopover monitoring will be done in spring and fall for 3 years.
- No significant waterfowl habitats were identified in pre-construction behaviour monitoring/studies.
- For all monitoring, the pre-construction monitoring results are what is used to compare monitoring data gathered in post-construction monitoring.

## 4.2 Aercoustics

- Aercoustics are experts in wind turbine acoustic (sound) measurement and monitoring. The Aercoustics team will provided this monitoring for the PRWF project.

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- Aercoustics has completed acoustic assessment and sound modelling for over 1 GW of wind energy.
- Aercoustics has logged more than 100,000 hours of post-construction noise measurements from wind turbine facilities and are accredited to measure wind turbine noise emissions as per CAN/CSA Standard C61400-11:07 standard. This is the same standard that wind turbine manufacturers use to measure noise outputs from their components.
- Aercoustics has conducted noise monitoring for Industry, Regulators and Residents. They are an unbiased data and information scientific team.
- Boralex hired Aercoustics to satisfy the project's post-construction REA requirements. Two types of noise studies will be completed:**Wind Turbine – Receptor Audit (Acoustic Audit Immission)**
- **Wind Turbine – Noise Emission/turbine test (Acoustic Audit Emission)**

## 4.2.1 Wind Turbine – Receptor Audit (Acoustic Audit Immission)

- Immission is a process that measures sources of noise emissions due to the operation of the project at designated measurement locations called receptors.
- The results of the acoustic audit are assessed to determine compliance with the Noise Performance Limits established by the MOECC and set out in the REA.
- Immission audits take place close to the substations and the turbines. No immission testing is at receptors.
- REA requires two (2) separate audit periods with preference for audits to be conducted once in the spring and once in the fall as there is less background noise (e.g. insects) during these times and background noise can contaminate audit results.
- REA requires that the acoustic audit take place at five (5) receptor locations. The noise audit receptor locations are chosen based on computer modelling worst case scenarios according to MOECC criteria.
- The MOECC approved REA requirements indicate how to pick the receptor locations. Receptors have been selected at Port Ryerse following Boralex's discussion with MOECC. MOECC has approved a different approach for receptor selection and locations at the complainant's houses or near their houses will be used as the regulatory sites.
- Receptor locations are chosen based on worst case impact and prevailing downwind conditions at locations where the landowners do not have project components on lands.
- Receptors are located approximately 600m away from turbines depending on downwind locations.
- Noise measurement procedure and analysis based on MOECC guideline – 'Compliance Protocol for Wind Turbine Noise' – this guideline outlines how to analyze the data.
- Measurements taken during night-time (10pm to 5am) to focus on times when

background noise is at the lowest level – this maximizes the chances of only hearing the wind turbines and not additional background noise.

- Certain data points are required for auditing at various wind speeds, and both with the facility operating and with the facility shut down:
- 120, one-minute intervals for each turbine type. Between 4-7m/s (10m height). Each bin (+/- 0.5m/s).
- 60, one-minute intervals for Background. Between 4-7m/s.
- Five (5) receptors where monitoring stations will be deployed to be active for approximately 4-6 weeks.
- The testing is at the mercy of nature. Collected data is discarded from analysis and cannot be used when wind is too gusty or when raining heavily as this can give false readings.

### 4.2.2 Wind Turbine – Noise Emission/turbine test (Acoustic Audit Emission)

- Emission audit is an investigative procedure that is compliant with the CAN/CSA Standard C61400-11:07 and consists of collecting measurements and/or acoustic modelling of noise emissions produced by wind turbine generators. These measurements are assessed to determine compliance with the manufacturer's noise (acoustic) equipment specifications and emission data of the wind turbine generators.
- Emmision testing/source test – measured at individual turbines.
- REA permit requires two (2) turbines to be tested as required by the REA for the project) and require that results be submitted to MOECC to confirm that the manufacturers claims are actually being met are:
- 3.0 MW – 102.5 dBA – T02
- 3.0 MW – 102.5 dBA – T04
- The sound results are compared against the sound tests conducted by the manufacturer to ensure that the component is in compliance.

### 4.2.3 Noise Audits Schedule

- PRWF achieved its Commercial Operation Date (COD): December 9, 2016
- Wind Turbine – Receptor Audit
  - Audit 1 – Planned to start Spring 2017
  - Audit 2 – Planned to start Fall 2017
- Wind Turbine – Emission Audit
  - To take place 6 months from COD – June 9, 2017
  - To start Spring 2017, however must wait for a consistent thawed out period to begin audit.

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## DISCUSSION QUESTIONS

**QUESTION: What happens when taking measurements and it is very windy/blowing snow?**

- Windy conditions/blowing snow can cause lots of background noise so the Aercoustics team would wait until this passes to setup/adjust receptors or discard the data.

**QUESTION: Resident west of Turbine 01 has conducted own readings and has recorded up to 60 dBA. Resident indicated that loudest noise with southwest and west winds. Southwest winds cause the blade to whistle when the rpm is over 14. Why is the turbine making so much noise?**

- The noise output of the turbine will be investigated.
- If you are hearing a whistle or any other concern with the PRWF problem project, please call project number (1-855-363-6319) to report the problem so it can be investigated.

**ACTION: Boralex to review turbine 01 for whistling noise concerns that may be caused by wind turbine fins. Boralex to consider testing turbine 01.**

**QUESTION: CLC member has visited many turbines and is concerned about significant low-level sound. Is it possible to readjust the turbines to keep turbines at a lower rpm and reduce the noise?**

- Turbines are 3.0MW machines and Boralex has already readjusted and reduced the turbines to 2.5MW to decrease the rpm.
- Manufacturers anticipated that the components were to be quite quiet.
- The post-construction noise monitoring will help determine whether the turbines are functioning as the manufacturers claimed they would. Based on results, it will be determined if changes are required.

**QUESTION: Can turbine speed be scaled back to make them quieter as a business decision?**

- First step is to start with the noise audits. Once it is confirmed whether the turbines are performing as they should, adjusting turbine speeds can be considered.

**QUESTION: Does temperature and/or cloud cover impact audits?**

- It can, the assessment model during the permitting stage would have considered a moderate temperature inversion scenario. And temperatures of 10$^{o}$C and 70% relative humidity – these are the conditions that would provide the highest

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predicted levels within those parameters according to the modelling standard.

**QUESTION: Will community know when noise auditing will be take place?**

- Auditing will happen on private land and will take place 24hours/day while receptors are in place.
- The MOECC must review and approve each receptor location. Homeowners will be approached once MOECC has approved receptor locations.
- All noise levels are included in the audits except for noise that is deemed as contaminated.

**QUESTION: Do you measure infrasound?**

- No, because the MOECC does not require it in the REA. Even if Boralex were to test infrasound there is no standard to compare it to within Canada.

**COMMENT: The wind turbines make a lot of noise and are very loud. The sound is heard from inside a member of the public's home.**

- Wind turbines make noise, and are not silent, that is why there is a noise study as the MOECC limits noise to certain limits (e.g. 40dBA at 6 m/s wind speed).

**QUESTION: Who are noise reports submitted to?**

- Boralex submits the noise report to the MOECC.

**QUESTION: What are the MOECC standard decibel levels?**

- The decibel limits vary by wind speed (i.e., wind farms are 40dBA up until ground speed is 7m/s as the background noise increases).
- The more efficient wind turbines become the lower the wind speed before the turbines begin generating power. The turbines still have to meet the 40bBA threshold when the ground level wind speed is at 6 m/s or below. This threshold is in the pre-construction assessment only, then as per REA conditions at different wind speeds.

**QUESTION: Are the turbines ever de-rated (the turbines are dialled down/slowed) to meet the requirements of the REA approval/permit?**

- REA outlines the noise audit process. The REA standards indicate what testing tools are used, where testing components are located, and the mitigation steps should thresholds be exceeded.

**QUESTION: Does Boralex have any secret document/dialogue that allows them to not to meet the REA requirements?**

- No, there is a legal requirement for Boralex to conduct post-construction tests to

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make sure that Boralex is meeting what they said they would meet in the project's REA permit.

- Boralex hires an independent engineer to conduct REA required audits.
- For other wind farm projects, Aercoustics has completed noise reports reporting on when turbines have exceeded the manufacturer's claims. In some cases, the wind farm owner had to de-rate their turbine or address the problem by otherwise reducing the noise emission of the turbines.

**QUESTION: Would Aercoustics jeopardize their reputation and legal position to help Boralex with the noise audits?**

- Aercoustics has been retained by all parties of wind farm projects: homeowners, proponents, manufacturers, the public, government, etc.
- Aercoustics conducts the steps the same way regardless of who hires them.
- The noise audits are conducted based on engineering ethics to meet Ministry requirements.

**COMMENT: Community member does not get television signal since the project's COD.**

- Boralex asked community member to get in touch with project to discuss.

**COMMENT: High vortex on turbine 01. Very loud inside and outside community member's home. Concerned with lack of tests in winter months. Concern with louder noise during fog or rain. Especially concerned with noise coming towards resident homes from various angles and during summer months when windows are opened. Concerned that turbines in other wind farms are quieter than Port Ryerse Wind Farm.**

- Noise is audited during periods of fog if fog arises during testing but not during rain as rain results in higher background levels.
- Typically noise testing is done in the spring and fall. Noise audits will begin as soon as possible (as soon as weather is optimal and locations are confirmed by MOECC). Reporting will be sent to the MOECC when audits are complete.

**ACTION: Boralex to talk to MOECC to see if MOECC would consider a receptor located not in a downwind location, as per community concerns for a downwind site as per REA.**

**QUESTION: Can PRWF turn the turbines off at night during summer months?**

- Boralex cannot consider any alternatives without noise audits data.Boralex

requested that the community member escalate the comment/complaint and submit a noise complaint to Boralex through Jason Weir, Site Manager (1-855-363-6319 or email at: portryersewind@boralex.com).

**COMMENT: Member of the public disagrees with Boralex's comment that community has to wait for the data to confirm the manufacturers' specifications. Why wait for data when community member's quality of life has been negatively impacted.**

**COMMENT: Community is very dense and community feels very affected by the turbines. Boralex should be respectful the density of the community located all around the wind farm.**

**QUESTION: Are CLC members bothered by wind turbines? Would the CLC member complain about the wind turbine noise?**

- CLC member surprised by how much they can hear the wind, CLC member can only hear the turbines when they are outside their home; can't hear it inside
- If necessary, the CLC member would submit a complaint about the wind turbine noise.

**COMMENT: Member of the public concerned about property values.**

**QUESTION: What is the EMF emission of the turbines?**

- EMF are electric and magnetic fields. No measurements are done for EMF. The amount of EMF that is coming off the PRWF system is the same or less (because cable components are buried) than the provincial transmission system.

**COMMENT: No one wanted the wind farm. Boralex has met all the requirements to date. Boralex has done a good job being a good neighbour during construction and it is hoped that the good neighbour ways will continue.**

## 5.0 Other Questions & Discussion:

**COMMENT: Boralex is all a by-product of the Dalton McGuinty government and the Green Energy Act.**

- Not all wind farm projects are the result of the Green Energy Act. Boralex was involved in nine (9) projects in the Chatham-Kent area before the Green Energy Act was implemented.
- It was Adam's understanding that the Green Energy Act was a tool that the province instituted based, in part, on feedback from municipalities which asked the province for help to manage renewable energy projects.

### Discussion Items

**QUESTION: Will the presentation be available online?**

- Yes, the presentation will be available online by February 16, 2017.

## 6.0 Next Steps

- Meeting minutes and presentations will be available online: www.boralex.com/projects/portryerse
- Next CLC meeting timeframe:
  - Boralex will continue to offer CLC meetings twice yearly for as long as there is interest moving forward.
- NEXT CLC MEETING DATE: (To be determined.)

## 7.0 Thank you – Closing

- The meeting adjourned at 8:00pm

### Project Contact Information

#### Port Ryerse Wind Farm

Phone: 1-855-363-6319
Email: portryersewind@boralex.com
Project website: http://www.boralex.com/projects/portryerse

#### CLC Facilitator

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### Errors and/or Omissions

These minutes were prepared by Nadia Galati who should be notified of any errors and/or omissions.