



**Amherst Island Wind Project  
Renewable Energy Modification  
Report**

Final Report

July 18, 2022

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## Sign-off Page

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# AMHERST ISLAND WIND PROJECT RENEWABLE ENERGY MODIFICATION REPORT

Introduction  
July 18, 2022

## 1.0 INTRODUCTION

Windlectric Inc. (Windlectric) received a Renewable Energy Approval (REA #7123-9W9NH2 dated August 24, 2015), from the Ministry of the Environment, Conservation and Parks (MECP) to develop, construct, and operate the Amherst Island Wind Project (the Project). The Project is a Class 4 wind facility, which includes 26 Siemens wind turbines with an overall project nameplate capacity of 74.3 Megawatts (MW). The Project is located in Loyalist Township, in the County of Lennox and Addington, Ontario. A site plan map for the Project is provided in **Appendix A**.

To date, five changes to the Modification Document (four project changes that were included as part of the original REA Application, and one REA amendment) for the Project have been submitted to the MECP:

- The first project change (dated June 2014) was to make minor administrative and technical modifications, including the following: minor revised location for the underground cable vaults on project maps; minor change to the transmission line route and submarine cable route; minor change to the island and mainland dock design; and to insert missing figures into Project Description Report.
- The second project change (dated July 2014) was to add an additional receptor (Receptor R727) and to de-rate three wind turbines (turbine numbers 7, 18, and 26).
- The third project change (dated March 2015) was to update the description of the permitting requirements applicable to the concrete batch plant.
- The fourth project change (dated May 2015) was to make minor project design and technical modifications, including the following: changing the Project's turbine models and reducing the total number of turbines from 36 to 27, of which 26 would be installed; rerouting the collection system to avoid the Village of Stella; and adding an underground collector line along a previously proposed access road.
- The REA amendment (date July 28, 2021) was to confirm that the operation of wind turbine generator S37 with a retrofit blade ice protection system (Borealis system) manufactured by Borealis Wind Inc. (Borealis) installed, will comply with the MECP's *Compliance Protocol for Wind Turbine Noise (2017)*.

The Technical Change described herein is to support the installation of ice protection technology on one of the Project's turbines, S37.



## 2.0 SUMMARY AND RATIONALE FOR TECHNICAL CHANGE

The proposed Technical Change is to install within turbine S37 a retrofit blade ice protection system manufactured by Borealis. The accumulation of ice on the turbine blades can cause weight imbalances, which would trigger an automatic shutdown of the turbine. Ice buildup on the turbine blades could also lead to ice throw or shed, where fragments of mixed ice and snow fall off the blades. The installation and operation of the Borealis system is designed to reduce instances of ice formation on the turbine blades, and therefore limit the risk of an automatic shutdown or ice throw or shed.

The overall nameplate capacity (74.3 MW) of the Project will not change and no physical design changes to the exterior of the turbine is required. Once installed, the operation of the Borealis system will require certain turbine operational changes and will not lead to any increased negative environmental effects from the Project (including no change in previously identified impacts related to noise and vibration).

To support this Technical Change, the following documents have been prepared by Howe Gastmeier Chapnik Ltd. (HGC) (**Appendix B**):

- Acoustic Test Report, WTG S37 (June 9, 2021)
- Acoustic Audit – Immission Report (June 24, 2021)
- Acoustic Audit – Immission Report (March 10, 2022)
- Borealis Immission Audit, Response to MECP Comments Memorandum (April 29, 2022)

These four reports have been included to demonstrate compliance with the MECP *Noise Guideline for Windfarms* (2016) and Ontario Regulation (O. Reg.) 359/09.



Technical Change – Installation of Borealis  
De-icing Equipment  
July 18, 2022

### 3.0 TECHNICAL CHANGE – INSTALLATION OF BOREALIS DE-ICING EQUIPMENT

The proposed Technical Change entails the installation and operation of the Borealis system within turbine S37. The system consists of a blade heater installed inside each blade and a control cabinet installed inside the nacelle. The system has two modes of operation: ON and OFF. The system would de-ice the blades while the wind turbine is parked and would further prevent accumulation of ice on the blades during normal turbine operation. No physical design changes are required to the exterior of the turbine.

As documented in HGC's Acoustic Test Report (**Appendix B**), it was determined that for all measured wind speeds, S37 meets the maximum sound power level of 105.0 dBA as specified in REA #7123-9W9NH2 when considering the allowable 0.5 dBA tolerance under the MECP's *Compliance Protocol for Wind Turbine Noise* (2017). In addition, the first Immission Audit titled *Acoustic Audit – Immission Report: Borealis Ice Protection System*, issued on June 24, 2021 (**Appendix B**), indicated that there was no correlation between the Borealis system operation and the sound level at the measurement location. After aggregating sound level results by wind speed and Borealis system operation there were several instances where the measured sound level was higher without the operation of the Borealis system. In instances where the measured sound level was higher with the Borealis system operating under a given wind condition, the difference in sound level was within the calculated standard deviation of the measurements.

The second Immission Audit, titled *Acoustic Audit – Immission Report: Borealis Ice Protection System*, issued on March 10, 2022 (**Appendix B**), was a repeat of the first Immission Audit to determine compliance with the MECP's sound level criteria. The same measurement location was used for both Immission Audits. The results of the second Immission Audit showed that the sound level with and without the Borealis system operating was equivalent in all applicable wind speed bins, within the standard deviation of the measurements.

Based on the results of the Acoustic Test and both Immission Audits, there is no increase in the octave-band sound power level of turbine S37 with the installation and operation of the Borealis system, in comparison to the guaranteed sound power level from Siemens.

The Borealis Immission Audit, Response to MECP Comments Memorandum dated April 29, 2022, provided additional clarification on the octave-band sound power levels and the data supporting the conclusion that the Borealis system does not result in any increased sound level impacts.

Based on the results of these reports, Windlectric has prepared this application to amend the REA to account for the installation and operation of the Borealis system in turbine S37. The amendment is designated as a Technical Change.



## **4.0 RESULTS OF EFFECTS ASSESSMENT FOR THE PROJECT MODIFICATION**

O. Reg 359/09 requires that any adverse environmental effects that may result from construction, installation, operation and maintenance activities be described. The term “environment” in O. Reg 359/09 has the same meaning as in the *Environmental Protection Act*, and includes the natural, physical, cultural, and socio-economic environment.

A screening to identify any new adverse environmental effects that would require additional mitigation or monitoring measures beyond those outlined in the REA documents as a result of the proposed modifications to the Project has been completed. Through this screening process, it has been determined that the proposed installation and operation of the Borealis system inside turbine S37 will result in no physical changes to the exterior of the turbine and no change in previously identified impacts related to noise and vibration; therefore no new or increased adverse environmental impacts are expected.



## **5.0 POTENTIAL IMPACTS TO REA TECHNICAL ASSESSMENTS AND STUDIES**

Windlectric previously completed all the required REA technical assessments (including the Natural Heritage Assessment and Environmental Impact Study, Noise Assessment, Water Assessment, Heritage Assessment, Stage 1 and Stage 2 Archaeological Assessments, and an Underwater Archaeological Assessment) for the Project which encompasses the installation and maintenance of the turbines, construction of access roads and other related infrastructure.

Windlectric completed an Acoustic Test Report and two Immissions Audits in 2021 and 2022 (**Appendix B**) to assess the proposed Technical Change to install and operate the Borealis system inside turbine S37. These assessments concluded that the proposed installation and operation of the Borealis system would not result in any new or increased adverse environmental impacts nor result in changes to the REA technical assessments.

Table 1 and Table 2 below outline any potential negative impacts (none, in this case) on environmental components due to the Technical Change and any new mitigation and/or monitoring measures proposed (none required in this case).

**Table 1: Potential Negative Impacts on Natural Environmental Components**

<b>Environmental Component</b>	<b>Potential Negative Environmental Impacts</b>	<b>Mitigation Measures</b>	<b>Monitoring Requirements</b>
Air Quality	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Soil Quality	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Soil Quantity	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Groundwater	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Surface Water Quality	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Surface Water Quantity	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Aquatic Habitat and Biota	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Woodlands	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Wetlands	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Wildlife Habitat	No additional negative impact.	No additional mitigation required.	No new monitoring required.





## AMHERST ISLAND WIND PROJECT RENEWABLE ENERGY MODIFICATION REPORT

Potential Impacts to REA Technical Assessments and Studies  
July 18, 2022

**Table 1: Potential Negative Impacts on Natural Environmental Components**

Environmental Component	Potential Negative Environmental Impacts	Mitigation Measures	Monitoring Requirements
Wildlife	No additional negative impact.	No additional mitigation required.	No new monitoring required.

**Table 2: Potential Negative Impacts on Socio-Economic Environmental Components**

Environmental Component	Potential Negative Environmental Impacts	Mitigation Measures	Monitoring Requirements
Noise	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Public and Facility Safety	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Change in Visual Landscape	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Property Values	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Availability of Resources	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Recreational Land Use	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Infrastructure	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Traffic	No additional negative impact.	No additional mitigation required.	No new monitoring required.
Archaeological and Heritage Resources	No additional negative impact.	No additional mitigation required.	No new monitoring required.



## 6.0 SUMMARY OF REVISIONS TO THE TECHNICAL ASSESSMENTS

Table 3 identifies the amendments to the REA technical assessments submitted with the original REA Application and reviewed by the MECP that are required to address the proposed Technical Change (i.e., the installation of the Borealis system at S37).

**Table 3: Potential Negative Impacts on Socio-Economic Environmental Components**

Report	Original Text	Revised Text
Noise Impact Assessment Report	Describes the existing conditions, potential impacts and mitigation measure	No revisions to the Noise Impact Assessment Report The following documents will be appended to this report: <ul style="list-style-type: none"> <li>• Acoustic Test Report, WTG S37 (June 9, 2021)</li> <li>• Acoustic Audit – Immission Report (June 24, 2021)</li> <li>• Acoustic Audit – Immission Report (March 10, 2022)</li> <li>• Borealis Immission Audit, Response to MECP Comments Memorandum (April 29, 2022)</li> </ul>

A copy of the Acoustic Test Report prepared by HGC, dated June 9, 2021, the two Immissions Audits also prepared by HGC, date June 24, 2021 and March 10, 2022, and the Borealis Immission Audit, Response to MECP Comments Memorandum, dated April 29, 2022 are provided in **Appendix B**.



# AMHERST ISLAND WIND PROJECT RENEWABLE ENERGY MODIFICATION REPORT

Consultation and Notification  
July 18, 2022

## 7.0 CONSULTATION AND NOTIFICATION

Consultation regarding the proposed Technical Change was undertaken with the MECP via conference call on March 17 and April 21, 2022.

In addition, a copy of this Modification Report has been provided to the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNR) and the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) for their information via email on July 18, 2022. As there are no unassessed areas, and no new or increased adverse environmental impacts, we do not anticipate the need for new confirmation letters from these ministries.

A copy of this Modification Report will be placed on the Project website:  
[www.amherstislandwindproject.com](http://www.amherstislandwindproject.com).

The Notice of Proposed Change to an Approved Renewable Energy Project will be mailed/emailed to Project stakeholders notifying them of the proposed Technical Change and directing them to review the Modification Report available on the Project website. The Notice will be distributed to the public in accordance with Section 32(1) of O. Reg. 359/09. In addition, the Notice will be published on two separate publication days in the Kingston Whig Standard newspaper during the weeks of July 25 and August 1, 2022 . A copy of the notice is presented in **Appendix C**.



# AMHERST ISLAND WIND PROJECT RENEWABLE ENERGY MODIFICATION REPORT

Conclusion  
July 18, 2022

## 8.0 CONCLUSION

The proposed Technical Change has been assessed in accordance with O. Reg. 395/09 and the MECP's *Technical Guide to Renewable Energy Approvals*. It has been determined that the proposed Technical Change will not result in new or increased adverse environmental impacts or require any additional mitigation measures.

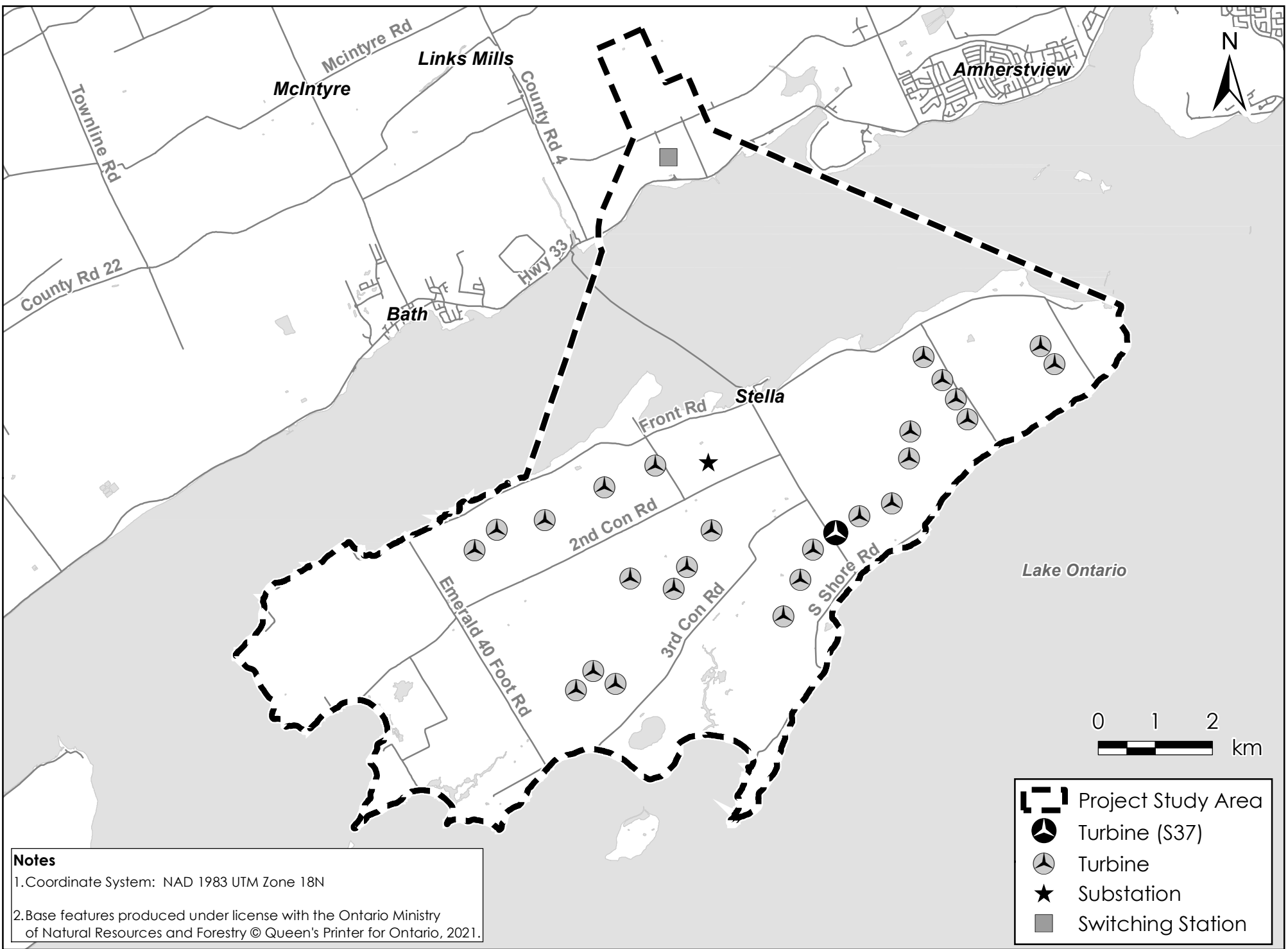


# APPENDIX A:

## Site Layout



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Revised: 2021-06-21 by: swan



**Notes**  
1. Coordinate System: NAD 1983 UTM Zone 18N  
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.

	Project Study Area
	Turbine (S37)
	Turbine
	Substation
	Switching Station

## **APPENDIX B:**

### **Acoustic Test Report, WTG S37**

**Acoustic Audit – Immission Report: Borealis Ice  
Protection System (June 24, 2021)**

**Acoustic Audit – Immission Report: Borealis Ice  
Protection System (March 10, 2022)**

**Borealis Immission Audit, Response to MECP Comments  
Memorandum (April 29, 2022)**

*PROVIDED UNDER SEPARATE COVER*



**APPENDIX C:**  
**Notice of a Proposed Change to an  
Approved Renewable Energy Project**





# NOTICE OF A PROPOSED CHANGE TO A RENEWABLE ENERGY PROJECT

## by Windlectic Inc. regarding a Proposal to Engage in a Renewable Energy Project

**Project Name:** AMHERST ISLAND WIND ENERGY PROJECT

**REA Approval Number:** 7213-9W9NH2

**MOE Reference Number:** 1271-96VNH3

**OPA Reference Number:** FIT-FUT3NOX

**Project Location:** The Project will be located on Amherst Island and a portion of land located on the mainland within Loyalist Township in the County of Lennox and Addington in eastern Ontario.

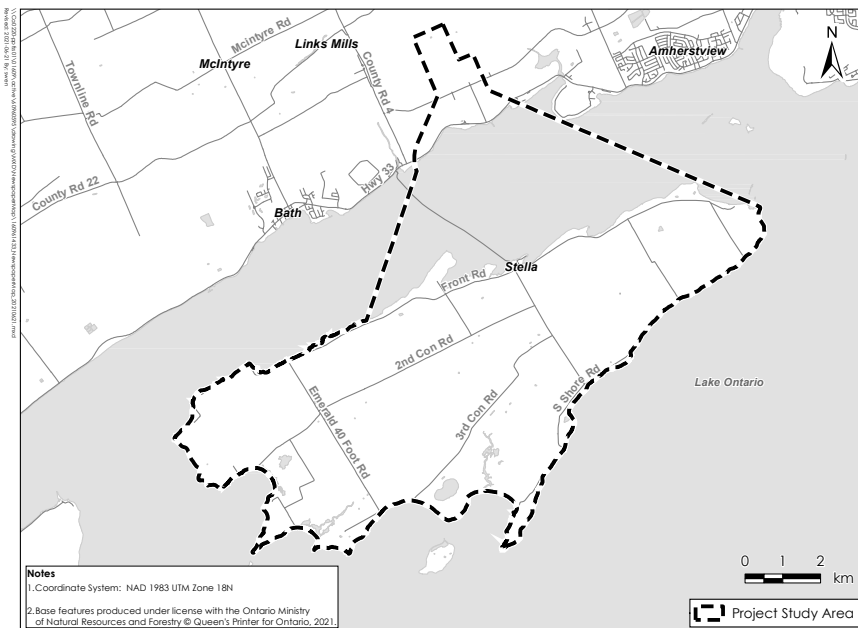
Dated At: On this 18th Day of July, 2022.

Windlectric Inc. was issued a Renewable Energy Approval on August 24, 2015 and four project changes June 2014, July 2014, March 2015, May 2015, and one Amendment to the Renewable Energy Approval in July 2021. Windlectric Inc. is proposing to make a change to the Project that is subject to Ontario Regulation 359/09. This notice is being distributed to make the public aware of the proposed change to the Project in accordance with Section 32.3(1) of the Regulation.

### Project Description and Proposed Change:

Pursuant to the Act and Regulation, the facility consists of a Class 4 wind facility with 26 Siemens wind turbines with an overall nameplate capacity of 74.3 Megawatts (MW). The Project also includes ancillary works including an electrical collector systems and substation, a transmission line, access roads, meteorological towers, and a switching station and transmission line at the mainland near Millhaven, Ontario.

An application has been made to the Ministry of the Environment, Conservation and Parks for a change to the Project requiring an amendment to the existing Renewable Energy Approval. The proposed change consists of the installation and operation of a retrofit blade ice protection system manufactured by Borealis Wind Inc., within wind turbine S37. The system would de-ice the blades while the wind turbine is parked and would further prevent any accumulation of ice on the blades during normal turbine operation, and therefore would further prevent the impacts, if any, of any ice build-up on the turbine blades. No physical design changes are required to the exterior of the turbine; however operational changes to the turbine will be required for the operation of the Borealis system. The proposed change is considered to be a technical change. To support this technical change, an Acoustic Test Report, and two Immission Audits in 2021 and 2022 have been prepared to demonstrate compliance with MECP Noise Guideline for Windfarms (2017) and O. Reg. 395/09.



### Documents for Public Inspection:

Further details regarding the proposed change to the Project are provided in a Modification Report (dated July 18, 2022), a copy of which can be found on the Project website at: [www.amherstislandwindproject.com](http://www.amherstislandwindproject.com). The Acoustic Test Report and two Immission Audits (2021 and 2022) are also available on the Project website. Copies of the final REA documents also remain available on the Project website.

### Project Contacts and Information:

To learn more about the Project, or to communicate questions or comments, please contact:

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