

**Amherst Island Wind Energy
Project - Renewable Energy
Approval Amendment
Modification Report**



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1.0 Introduction

1.1 BACKGROUND

Windlectric Inc. (the Proponent or Windlectric) submitted a Renewable Energy Approval (REA) Application on April 18, 2013 to develop, construct and operate the Amherst Island Wind Energy Project (the Project) within Loyalist Township (the Township) in the County of Lennox and Addington (the County) in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The basic components of the proposed Project include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under the Renewable Energy Approval (REA). The layout includes 24 Siemens SWT-2.3-113 2300 kW and twelve (12) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The number of wind turbines will be dependent upon final selection of the model of the wind turbine most appropriate to the proposed Project.

The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Temporary components during construction may include staging areas for the turbines, access roads, met tower(s), collector lines and transmission line as well as crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. (HONI) 115 kV transmission line.

The REA application considered the following alternative Project configurations:

- two alternative mainland transmission line routes;
- two alternative switching station locations and corresponding point of common coupling with the HONI line;
- three alternative mainland temporary dock locations along the mainland;

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- a submarine cable with three alternative submarine cable routes near the mainland;
- three alternative mainland submarine cable landing locations and corresponding cable vault locations;
- up to three alternative met tower locations; and,
- up to three potential locations for an operations and maintenance building.

Final selection of the sites to be used would be based on the results of consultation activities, detailed design / engineering work, and the conditions experienced during construction.

Windlectric is making minor administrative and technical modifications to the REA Application as a result of reviewing design features of the layout.

This report and its attachments provide information regarding the minor modifications. Based on the information set out below, the minor modifications Administrative Change and Technical Change pursuant to the classification system outlined in the Ministry of the Environment's *Technical Guide to Renewable Energy Approvals* (October, 2013). As such, this document has been prepared to address the requirements of Chapter 10 "Making Changes to REA Projects" of the Technical Guide.

1.2 SUMMARY AND RATIONALE FOR MINOR MODIFICATIONS

1.2.1 Modification #1 – Administrative Change

As identified in the REA application, the underground cable vault locations are currently located near the shoreline. The Project Description Report and Design and Operations Report describe the location of the cable vaults to be approximately 50 m from the shoreline. The REA documents contain figures/mapping that illustrate the cable vaults closer to the shoreline than would be constructed as described in the Project Description Report and Design and Operations Report.

The revised location for the underground cable vaults are presented in the attached figures (Appendix A) and discussed in the following sections.

1.2.2 Modification #2 – Technical Change

The REA application mapping illustrates the proposed route for the transmission line on Amherst Island from the substation to the underground cable vault. The Project team reviewed the placement of the transmission line in order to assess design efficiencies and further reduce any likelihood of potential environmental impacts.

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The placement for the transmission line was revised to:

- Reduce the angle at which the transmission line crosses Front Road
- Reduce the number of poles, near the substation, by crossing a knoll, on a private land owner's property, by spanning the transmission line over the hill. No poles would be placed on the hill and no entry of personnel onto the hill would be required to install the line between the poles.

Both of these revised locations will still allow the installation of the transmission line to remain in the corridor that was originally assessed.

The revised location for the transmission line is presented in the attached figures (Appendix A) and discussed in the sections below.

The construction and installation activities for the transmission line will be completed in the same manner as the transmission line which is described in the Construction Plan Report, submitted as part of the REA Application.

1.2.3 Modification #3 – Technical Change

The REA application mapping illustrates three alternative submarine cable routes near the mainland. The Project Team assessed the design efficiency of the alternative submarine cable routes and is proposing a minor modification.

The revised location for the alternative submarine cable routes is presented in the attached figures (Appendix A) and discussed in the following sections below.

The construction and installation activities for the submarine cable will be completed in the same manner described in the Construction Plan Report, submitted as part of the REA Application.

1.2.4 Modification #4 – Technical Change

As identified in the REA application, three options were presented for the dock types that were under consideration. Through further detailed design of the island and mainland docks, it has been determined that option 2A is the preferred design methodology as it allows for installation with the least interference with the lakebed during construction.

The docks will be constructed from the land out and will limit the use of jack-up barges needed for construction. The construction contractor has also determined that the entire length of the docks should be constructed in this way rather than using a jack-up barge at the offshore end. For the island dock the total length of 50m ±50% (30m of dock and 20m of jack-up barge) will be maintained with 50m ±50% of dock and no jack-up barge. In the case of the mainland dock, the

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lengths provided in the Dock Size column of Table 3.2 in the Project Description Report will be maintained, and the jack-up barge will simply be excluded.

In addition, it was concluded that the widening of the first segments of the docks (from the land side out into the water) from 7m \pm 50% to 10m \pm 50% will provide an optimum solution by allowing significantly faster and safer loading and unloading of the barges which will in turn minimize the time that marine logistics will add to the overall construction schedule.

The preference to have access for two barges to be docked at the same time was selected to improve the safety and schedule. To achieve the two barge docking design, the dock designs would need to be wider near the end, widening from 10m to approximately 15m over the last 10m of dock length. This minor design amendment in width will not impact the number of piles needed for the docks or change the footprint of each dock structure with the lakebed.

1.2.5 Modification #5 – Administrative Change

The Project Team reviewed the soft copy of the REA Application and identified that Figures 5 through 14 in the Project Description report were missing. The hard copy of the REA Application has these figures. Figure 5, which illustrates the Noise Contours at 4.5 m, was missing in the soft copy of the Project Description Report (but included in the hard copy submitted to the government), but was included in the REA Application within Attachment B of the Design and Operation Report.

Figures 6 through 14 include conceptual drawings for proposed project components such as the substation, mainland submarine cable termination, etc. Conceptual drawings of the same project components were included in the Draft REA Application that went Public in December 2012.

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Results of Effects Assessment for the Project Modification
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2.0 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 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 was completed.

Since the construction and installation methods of the transmission line and submarine cable will be completed in the same manner as the transmission line and submarine cable which has already been assessed as part of the REA Application and the work will be completed within previously assessed areas, no new environmental effects are expected.

2.1 IMPACTS ON STUDIES/ REA REPORTS

None of the REA reports require a material change to the content as a result of the modifications. A summary of the Figures to be amended in each REA report and the minor text change (to the Project Description Report, Design and Operation Report and the Construction Plan Report) is provided in the table below.

2.1.1 Natural Heritage Assessment and Environmental Impact Study

The NHA/EIS (included in the REA Application) identified natural features within the Project Location and the associated 120 m Zone of Investigation around the limits of the Project Location. The Project Location requires a minor modification to account for the change in the cable vault, transmission line and submarine cable location.

A technical review was conducted to determine if the modifications result in: a change to the identification of natural features within 120 m of the new Project Location; a change to the assessment of impacts and mitigation measures; and the overall assessment of changes to the NHA/EIS.

The Project Location associated with Modification #1, 2 and 3 was previously assessed as part of the NHA/EIS that was submitted as part of the original REA Application and was subsequently accepted by the MNR in their Confirmation Letter dated December 14, 2012. As such, no additional NHA/EIS was required for Modification #1, 2 and 3.

It was concluded that overall, the minor modifications will not result in potential effects not previously identified and mitigated in the NHA/EIS.

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Further, the proposed modifications do not require any additions to the Environmental Effects Monitoring Plan (EEMP) as submitted with the REA Application.

2.1.2 Stage II Archaeological Assessment

The Project Location associated with Modification #1 was previously assessed as part of the Stage II Archaeological Assessment that was submitted as part of the original REA Application and was subsequently accepted by the MTCS in their Confirmation Letter dated March 13, 2013. As such, no additional Stage II Archaeological Assessment was required for Modification #1.

The Project Location associated with Modification #2 does not require a Stage II Archaeological Assessment as the transmission line poles will be constructed within the area previously assessed as part of the Stage II Archaeological Assessment that was submitted as part of the original REA Application and was subsequently accepted by the MTCS in their Confirmation Letter dated March 13, 2013. It was concluded that overall, the modifications will not result in potential effects not previously assessed in the Stage II Archaeological Assessment.

2.1.3 Underwater Archaeological Assessment

The area where the Project Location associated with Modification #3 is located was previously assessed as part of the Underwater Archaeological Assessment that was submitted as part of the original REA Application and was subsequently accepted by the MTCS in their Confirmation Letter dated February 14, 2013. The Project Location associated with Modification #3 is outside the recommended minimum buffers from archaeological resources described in the Underwater Archaeological Assessment Report. As such, no additional underwater archaeological assessment was required for Modification #3.

The additional area needed for the wider dock design associated with Modification #4 is entirely within the area that was previously assessed as part the Underwater Archeological Assessment that was submitted as part of the original REA Application and was subsequently accepted by the MTCS in their Confirmation Letter dated February 14, 2013. As such, no additional underwater archaeological assessment was required for Modification #4.

It was concluded that overall, the modifications will not result in potential effects not previously assessed in the Underwater Archaeological Assessment.

2.1.4 Summary of Impacts/Changes to REA Reports and Studies

The modified locations of the cable vaults, transmission line, and submarine cable as well as revised dock size will involve minor changes to the Project Location. The other components of the Project Location shown in the REA Application including turbines, access roads, etc. will remain the same.

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The following table provides a list of the REA reports and studies that were reviewed by MOE, and notes whether changes to the reports are required due to the modifications proposed. As well, an outline of the specific changes or the justification for no change being required is provided. Any changes to the reports have been addressed by issuance of this Modification Report and its appendices.

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Table 1: Summary of Impacts/Changes to REA Reports & Studies			
REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
REA REPORTS			
Project Description Report	Yes	1.0, 1.1, 1.2 2.0, 2.1, 2.2 3.0, 3.1, 3.2 4.0, 4.1, 4.2 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	<p>Figures to be updated to display the revised cable vault, transmission line, and submarine cable placement, Appendix A. (Modification #1, 2, and 5)</p> <p>Section 3.4.6: (a) amend text to remove the use of a jack-up barge and the dock width would be approximately 10m ±50%, and (b) end of the docks will be designed to allow two barges to dock</p> <p>Section 3.5.7: (a) Table 3.2 – update Dock size to 10m ±50%, remove reference to jack-up barge, and (b) remove text reference to jack-up barge and dock width is approximately 10m ±50%</p> <p>The figures referred to in the report text to be added, Appendix A. (Modification #5)</p>
Construction Plan Report	Yes	1.0, 1.1, 1.2 2.0, 2.1, 2.2 3.0, 3.1, 3.2 4.0, 4.1, 4.2	<p>Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)</p> <p>Section 2: (a) Table 2.1 – update dock type selected and remove reference to jack-up barge</p>
Design & Operations Report	Yes	1.0, 1.1, 1.2 2.0, 2.1, 2.2 3.0, 3.1, 3.2 4.0, 4.1, 4.2	<p>Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)</p> <p>Section 3.11: (a) amend text to remove the use of a jack-up barge and the dock width would be approximately 10m ±50%, and (b) end of the docks will be designed to allow two barges to dock</p>
Decommissioning Plan Report	No	n/a	There are no figures within the Decommissioning Plan Report; therefore no changes required.
Consultation Report	Yes	n/a	Consultation with government representative has been undertaken for the proposed modifications to the Project, and the mechanism to update the project documents is described in Section 3 of this Modification Document.

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Table 1: Summary of Impacts/Changes to REA Reports & Studies			
REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
ADDITIONAL REPORTS			
Natural Heritage Assessment Report	Yes	1A, 1B 2.0, 2.1, 2.2 3.0, 3.1, 3.2 4.0, 4.1, 4.2 5.0, 5.1, 5.2 6.0, 6.1, 6.2	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)
Water Assessment Report	Yes	1, 2 (2 and 4 of 4) 3 4 (1, 2, 3, and 4 of 4) 5 (2 and 4 of 4)	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)
Stage 1 Archaeological Assessment	Yes	2, 5, 7, 9, 10	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)
Stage 2 Archaeological Assessment	Yes	2, 8	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)
Underwater Archaeological Report	Yes	1	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2 and 5)
Heritage Assessment Report	Yes	3, 5, 6, 8, 10, 12	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)
Protected Properties Assessment	Yes	3, 5, 6, 8, 10, 11	Figures to be updated to display the revised cable vault, transmission line and submarine cable placement, Appendix A. (Modification #1, 2, and 5)
Wind Turbine Specifications Report	No	n/a	There are no changes proposed to the turbines and this report will not require any modifications.
Noise Assessment Report (Appended to the Design and Operations Report)	No	n/a	No changes are being made to sources of noise for this project.
Property Line Setback Assessment	No	n/a	No changes are being made to the turbine locations for this project.

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Consultation
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3.0 Consultation

Consultation regarding the proposed modifications was undertaken with the Ministry of the Environment (MOE) via this Modification Document and as per a letter submitted to the MOE dated June 5, 2014 (Appendix B).

A copy of this Modification Document has been provided to the Ministry of Natural Resources (MNR) and Ministry of Tourism, Culture and Sport (MTCS) for their information. As there are no unassessed areas, and no new effects, we do not anticipate the need for new confirmation letters from these ministries.

A copy of this Modification Document will be placed on the Project website, within a couple of weeks.

Within this time period, an electronic copy of this Modification Document will be provided to:

- Loyalist Township
- County of Lennox & Addington
- Mississaugas of Scugog Island First Nation
- Curve Lake First Nation – Mississaugas of Mud Lake Curve Lake
- Hiawatha First Nation – Mississaugas of Rice Lake
- Alderville First Nation – Mississaugas of Aderville
- Kawartha Nishnawbe First Nation
- Mohawks of the Bay of Quinte – Tyendinaga Mohawks Territory
- Williams Treaty First Nations

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Closure
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4.0 Closure

The proposed modifications have been adequately assessed in accordance with O. Reg. 359/09 and the MOE's Technical Guide. It has been determined that the modifications would not result in new negative environmental effects or associated mitigation measures beyond those identified as part of the original REA Application submitted for the Project.

This report has been prepared by Stantec for the sole use of Windlectric, and may not be used by any third party without the express written consent of Windlectric. The data presented in this report are in accordance with Stantec's understanding of the Project as it was presented at the time of reporting.

Reviewed by *Robert E Rowland*
(signature)

Rob Rowland, Senior Project Manager