



1646658 Alberta Ltd.

Alteration to Bull Creek Wind Project

April 17, 2015

Alberta Utilities Commission

Decision 3520-D01-2015

1646658 Alberta Ltd.

Alteration to Bull Creek Wind Project

Proceeding 3520

Application 1610995

April 17, 2015

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1 Introduction

1. 1645558 Alberta Ltd., a wholly-owned subsidiary of BluEarth Renewables Inc. (the applicant), holds an approval to construct and operate the Bull Creek Wind Project, pursuant to Decision [2014-040 \(Errata\)](#),¹ Approval [U2014-64](#)² and Permit and Licence [U2014-65](#).³ On November 18, 2014, the applicant filed an application with the Alberta Utilities Commission to seek approval to alter and operate the Bull Creek Wind Project in the Provost area, pursuant to Section 11 of the *Hydro and Electric Energy Act*. This application was registered as Application 1610995 (the amendment application).

2 Process

2. As stated above, the amendment application was filed on November 18, 2014.

3. The AUC issued a notice of application on December 10, 2014, and a revised notice of application was issued on December 12, 2014.

4. The Commission received 10 statements of intent to participate in response to the notice. Alan and Charlene Hager, Kevin and Eiri Beatty, Doug and Heather Buck, John and Lorraine Skinner, Benjamin Hager and Deandra Stachura, Rick Hager, Dan and Tracy Bonnefoy, TransCanada Energy Ltd., and TransAlta Corporation objected to the application. David Blume filed a letter in support of the application. The concerns from the landowners included noise, health, environmental, agricultural, and residential effects as well as consultation concerns. TransCanada Energy Ltd. and TransAlta Corporation submitted concerns with potential effects on the transmission system.

5. On February 13, 2015, TransCanada Energy Ltd. and TransAlta Corporation withdrew their respective statements of intent to participate indicating, among other things, that they had received a copy of the Alberta Electric System Operator's (AESO) system studies, which was their main concern.

6. On March 4, 2015, the Commission issued its ruling on standing,⁴ denying standing for the remaining interveners for the reasons stated in that ruling including that the amendment

¹ Decision 2014-040 (Errata): 1646658 Alberta Ltd. – Bull Creel Wind Project, Proceeding 1955, Application 1608556, March 10, 2014.

² Approval U2014-64, Proceeding 1955, Application 1608556, February 20, 2014.

³ Approval U2014-65, Proceeding 1955, Application 1608556, February 20, 2014.

⁴ Exhibit 3520-X0047, AUC Standing Ruling – Proceeding 3520, March 4, 2015.

application will not create any new measurable adverse effects as compared to the approved Bull Creek Wind Project on those individuals and families objecting to the amendment application. A copy of the ruling is attached as [Appendix A](#).

7. The Commission indicated in its March 4, 2015 standing ruling that a hearing would not be required as it considered that its decision or order would not directly and adversely affect the rights of a person pursuant to Section 9 of the *Alberta Utilities Commission Act*.

3 Project description

Overview of the proposed changes

8. In Decision 2014-040 (Errata), the applicant was given approval to construct and operate the Bull Creek Wind Project, which consisted of a 46-turbine, 115-megawatt (MW) wind power plant and the associated Bull Creek 280S substation, near Provost, Alberta. The applicant has now applied to the Commission for an alteration of the project, reducing the project size to reflect the generation needed to fulfill contracted power purchase agreements and to change to a distribution-level interconnection (the amended project). The applicant is proposing a reduction to 17 wind turbines and a total capability of 29.2 MW. The amended project will utilize wind turbines that are smaller in capability and have a shorter hub height. The reduction in the number of wind turbines results in a reduction of the size of the project site, the total length of access roads required and the total length of the collector system.

9. A summary comparison of proposed amended project changes is provided in the table below.

Project details	Approved project	Amended project
Number of wind turbines	46	17
Turbine make and model	GE 2.5-103	GE 1.7-103
Individual turbine generation capability	2.5 MW	1.7 MW
Total power plant generation capability	115 MW	29.2 MW
Turbine hub height	85 metres	80 metres
Turbine rotor diameter	103 metres	103 metres
Total turbine height with blade	136.5 metres	131.5 metres
Number of noise barriers needed at 3 rd party facilities	8	0
Number of turbines subject to noise reduced operation	9	0
Total length of access roads	32 kilometres	12.7 kilometres
Total length of collector system	37.5 kilometres	11.3 kilometres
Collector system voltage	34.5-kilovolt	24.94-kilovolt
Project area	3,560 hectares	1,640 hectares
Type of interconnection	Transmission system	Distribution system
Substation required	Yes	No
Municipalities	Wainwright and Provost	Provost

10. The applicant stated that the wind turbine locations selected were chosen based on maximizing the efficiency of the amended project, proximity of distribution connection opportunities, minimizing noise impacts and achieving compliance with Rule 012: *Noise Control* without noise attenuation barriers, the elimination of the requirement to use the noise reduced operation (NRO) modes, public consultation, and proximity to the Killarney, Dillberry and Leane Lakes Important Bird Areas. The remaining wind turbines will be sited within 50 metres of the coordinates of the locations approved in the original layout.

11. The applicant stated that the level of generation required to fulfill its power purchase agreements is less than previously anticipated and the lower capability provided an opportunity to interconnect at the distribution level. Due to a shift in the interconnection from transmission level to distribution level, the substation and transmission interconnection requests are no longer required. The applicant has provided notification to the AESO and the Commission that the two applications under Proceeding 2643 have been withdrawn.

12. The applicant stated that the amended project would be connected to the FortisAlberta Inc. (Fortis) distribution system at 24.94 kilovolts. Fortis is willing to connect to the amended project and has completed a high-level feasibility study. Fortis has submitted a system access service request to the AESO, which has been reviewed and accepted by the AESO.

13. The applicant further submitted the amended project would provide approximately \$350,000 in annual revenue to the Municipal District of Provost and not require any municipal services.

14. The applicant proposed an in-service date of January 1, 2016. The applicant stated that it has power purchase agreements with a number of school boards to begin providing power on this date. Delays in the in-service date may result in higher construction costs and the school boards seeking alternative power supplies.

15. In the amendment application, the applicant stated that Approval U2014-64, the approval of the original wind turbine layout, was contingent on several conditions. Approval U2014-64 directed the applicant to perform a detailed electrical study and corrosion analysis and implement measures to prevent pipeline erosion, finalize and share its emergency preparedness and response plan with the Killarney Lake Group, a group of local interveners who objected to the application that led to Decision 2014-040 (Errata), conduct a post-construction monitoring program for birds and bats in consultation with Alberta Environment and Sustainable Resource Development (ESRD), develop and implement an environmental protection plan in consultation with ESRD, maintain insurance coverage at all times during construction and operation that is sufficient to protect against any reasonably foreseeable liabilities, and comply with applicable reclamation standards. The applicant indicated that it remains committed to fulfilling these conditions.

16. For the remaining conditions, the applicant explained that it has undertaken some of the activities required by the conditions and, due to the modifications proposed in this amendment application, not all of the conditions present in Approval U2014-64 should be required.

Consultation

17. The applicant's consultation program consisted of notification of project changes, public open house meetings and personal consultation. Notice was provided to stakeholders within a 2,000-metre radius of the original site boundary and at two open houses held in Provost and Chauvin. The applicant also conducted personal consultation with landowners, occupants and residents within 800 metres from the edge of the amended project's site boundary and contacted members of the Killarney Lake Group, which was composed of those persons who objected to the original application.

18. The applicant received concerns pertaining to health, shadow flicker, bird and bat mortality, and the effect on local taxpayers. The applicant reviewed new health material and provided the interested stakeholders with an independent review of the material. The review concluded the new material did not present any new evidence that was not previously considered by the Commission. With regard to shadow flicker, the applicant stated the level of shadow flicker at receptors for the proposed changes is low and that it is open to discussions and investigating mitigation options should the need arise. The applicant responded to bird and bat concerns stating that no flyways were noted over the amended project area and that ESRD had no concerns regarding migratory bird pathways at the amended project area. Bat studies were required by ESRD. Sign-off and post-construction bat mortality monitoring will take place in consultation with ESRD. The applicant responded to concerns raised about bats but stated that it would implement operational mitigation strategies if required.

Environment

19. The applicant completed an environmental evaluation addendum to assess the effects of the amended project and to update the findings of the original evaluation submitted in support of the application that led to Decision 2014-040 (Errata). The environmental evaluation addendum assessed potential effects to birds, bats, wetlands and wildlife habitat. The environmental evaluation addendum concluded that the amended project results in lower overall environmental effects due to the removal or slight adjustments to wind turbine locations, refinement of access roads and collector systems, and additional pre-construction surveys and consultation with ESRD staff. Several potentially sensitive environmental features, such as wetlands, have either been avoided or the separation distance from the amended project components has increased. The environmental evaluation addendum noted that fewer wind turbines would be located in native grasslands, and that there was an increased percentage of representative samples for post-construction wildlife monitoring.

20. The applicant was required to receive approval from the Fish and Wildlife Division of ESRD for the project. In its amendment application, the applicant included an ESRD sign-off letter for the project dated November 12, 2014. The ESRD Wind Energy Referral Report (ESRD sign-off) itemized several mitigation and monitoring measures for the project; it is attached as [Appendix B](#). The environmental evaluation addendum was reviewed by ESRD as part of its sign-off.

21. The applicant was directed by the Commission to continue a pre-construction bat monitoring program and submit its results to ESRD. The applicant stated that it has completed the monitoring program and submitted the results to ESRD. The applicant also completed a

wetland assessment to identify wetlands in proximity to the amended project. The pre-construction bat monitoring program and wetland assessment were reviewed by ESRD as part of its sign-off.

22. The ESRD sign-off listed wildlife issues to be addressed and listed that pre-development wildlife reports be completed. The sign-off also noted that the applicant, in consultation with ESRD, will conduct pre-construction wildlife surveys in the spring preceding construction, to ensure no new wildlife have appeared and to determine if additional wildlife mitigation measures will be required.

23. The ESRD sign-off also indicated specific survey needs, and construction and operational mitigation measures committed to by the applicant. In particular, the sign-off indicates that post-construction monitoring of bird and bat mortality is required. The ESRD sign-off indicated that the applicant made a firm commitment to conduct post-construction monitoring to assess bird and bat mortality and implement mitigation measures if deemed necessary by ESRD. Mitigation measures to address excessive mortality may include but are not limited to:

- altering cut-in speeds at the wind turbines with high mortality rates;
- ensuring checks and balances are in place to prevent unnecessary lighting at night; and
- any other mitigation measure(s) deemed appropriate by ESRD based on site-specific circumstances or incidents.

Noise

24. The applicant conducted a noise impact assessment (NIA) for the amended project, utilizing the revised model of wind turbines and the 17 wind turbine layout (the new NIA).

25. In Approval U2014-64, the applicant was required to re-measure outstanding 2010 facilities, as defined in Decision 2014-040 (Errata) in the evaluation of the sound power levels, and report its findings to the Commission. The applicant re-measured the outstanding 2010 facilities and submitted a report to the Commission on May 22, 2014, titled “Bull Creek Wind Project, 3rd Party Noise Sources, 2014 Field Verification Measurements.” The Commission approved the report on July 23, 2014. The applicant indicated that it included the results of the 2014 Field Verification Measurements as inputs in the new NIA.

26. According to the new NIA, the predicted cumulative noise levels, based on the amended project operating at full capability, would meet the permissible sound level (PSL) limits of 50 dBA L_{eq} (daytime) and 40 dBA L_{eq} (nighttime) required by Rule 012 for all receptors without the need for noise attenuation barriers at third party facilities or the use of NRO modes.

27. Compared to the predicted sound levels for the previous NIA, sound level contributions from the Amended Project are predicted to decrease at all receptor locations within 1.5 kilometres of the nearest wind turbine. The new NIA also considered potential noise effects from low frequency sound, wind shear, third party sources and construction activities.

28. Approval U2014-64 required the applicant to implement all noise mitigation measures, if required, including implementing the NRO mode, and shutting down of wind turbine(s) during the nighttime period and the installation of noise attenuation barriers and additional means of reducing noise levels of the third-party facilities to ensure compliance with the PSL at all receptors. The applicant was also directed to conduct baseline noise studies, including low frequency noise evaluations, at receptors R052, R063, R086, R141 and the receptor in NW 31-40-1-W4M and post-construction comprehensive noise studies, including the evaluation of low frequency noise, at R004, R052, R055, R063, R064, R065, R070, R086, R141 and the receptor in NW 31-40-1-W4M.

29. In the new NIA submitted in support of this amendment application, the applicant stated that post-construction comprehensive noise studies are no longer recommended for R004, R052, R055, R063, R064, R065, R070 and the residence on NW 31-40-1 W4M. While R086 and R141 are also more than 1.5 kilometres from the closest wind turbine, the applicant confirmed that it would conduct noise monitoring studies at these receptors in order to fulfill commitments made to these residents during consultation.

4 Role and authority of the Commission

30. The Commission regulates the construction and operation of power plants in Alberta. Section 11 of the *Hydro and Electric Energy Act* states that no person may construct or operate a power plant without prior approval from the Commission. Section 11 and Section 19 govern applications to amend an approval granted for a power plant. Accordingly, the applicant has applied to amend its approval under these sections.

31. When considering an application for a power plant, the Commission is guided by sections 2 and 3 of the *Hydro and Electric Energy Act*, and Section 17 of the *Alberta Utilities Commission Act*.

32. Section 2 lists the purposes of the *Hydro and Electric Energy Act* in the generation of electric energy. Those purposes include:

- to provide for the economic, orderly and efficient development and operation, in the public interest, of the generation of electric energy in Alberta;
- to secure the observance of safe and efficient practices in the public interest in the generation of electric energy in Alberta; and
- to assist the government in controlling pollution and ensuring environment conservation in the generation of electric energy in Alberta.

33. Section 3 of the *Hydro and Electric Energy Act* requires the Commission to have regard for the purposes of the *Electric Utilities Act* when assessing whether a proposed power plant is in the public interest. The purposes of that act include the development of an efficient electric industry structure and the development of an electric generation sector guided by competitive market forces.

34. As such, in the following assessment of whether the project is in the public interest, the Commission has not had regard to whether there is a need for the project, as proposed by the applicant. In considering this application, the Commission is also mindful of Section 19 of the *Hydro and Electric Energy Act*, which authorizes the Commission to approve an application, approve it with conditions, or deny it. The Commission's public interest mandate is found in Section 17 of the *Alberta Utilities Commission Act*, which states:

17(1) Where the Commission conducts a hearing or other proceeding on an application to construct or operate a hydro development, power plant or transmission line under the *Hydro and Electric Energy Act* or a gas utility pipeline under the *Gas Utilities Act*, it shall, in addition to any other matters it may or must consider in conducting the hearing or other proceeding, give consideration to whether the construction or operation of the proposed hydro development, power plant, transmission line or gas utility pipeline is in the public interest, having regard to the social and economic effects of the development, plant, line or pipeline and the effects of the development, plant, line or pipeline on the environment.

35. In Decision 2001-111,⁵ the Commission's predecessor, the Alberta Energy and Utilities Board (EUB or the Board), explained its approach to assessing whether the approval of a power plant is in the public interest as follows:

The determination of whether a project is in the public interest requires the Board to assess and balance the negative and beneficial impacts of the specific project before it. Benefits to the public as well as negative impacts on the public must be acknowledged in this analysis. The existence of regulatory standards and guidelines and a proponent's adherence to these standards are important elements in deciding whether potential adverse impacts are acceptable. Where such thresholds do not exist, the Board must be satisfied that reasonable mitigative measures are in place to address the impacts. In many cases, the Board may also approve an application subject to specific conditions that are designed to enhance the effectiveness of mitigative plans. The conditions become an essential part of the approval, and breach of them may result in suspension or rescission of the approval.

In the Board's view, the public interest will be largely met if applications are shown to be in compliance with existing provincial health, environmental, and other regulatory standards in addition to the public benefits outweighing negative impacts.

36. The Commission is of the view that this approach to assessing whether a proposed power plant is in the public interest remains consistent with the purpose and intent of the statutory scheme.

37. Further, Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments* applies to applications for an amendment to a power plant governed by the *Hydro and Electric Energy Act*. The application must meet the informational and other requirements set out in Rule 007. Specifically, an applicant must provide technical and functional specifications, information on public consultation, environmental information including a noise assessment. The requirements that

⁵ Decision 2001-111: EPCOR Generation Inc. and EPCOR Power Development Corporation – 490-MW Coal-Fired Power Plant, Application 2001173, December 21, 2001.

relate to noise control are set out in Rule 012. The applicant must also receive all approvals required pursuant to other applicable provincial and federal legislation.

38. In reaching the determinations set out in this decision, the Commission has considered all relevant materials comprising the record of this proceeding, including the evidence and submissions provided by each party. References in this decision to specific parts of the record are intended to assist the reader in understanding the Commission's reasoning relating to a particular matter and should not be taken as an indication that the Commission did not consider all relevant portions of the record as it relates to that matter.

5 Findings

39. The Commission has reviewed the amendment application and has decided for the reasons that follow to approve the amended project subject to the conditions specified below. Overall, the Commission finds that the amended project will create fewer adverse effects as compared to the original Bull Creek Wind Project approved in Decision 2014-040 (Errata). In making its determination, the Commission agrees with the applicant that the reduction in the project area, the decrease in size and number of wind turbines, the increased distance between residences and amended project components, and the reduction in noise levels, results in a reduction in overall effects. Therefore, the Commission is satisfied that the amended project is in the public interest pursuant to Section 17 of the *Alberta Utilities Commission Act*.

40. Due to changes to the amended project and the work conducted by the applicant, changes to the conditions in Approval U2014-64 are required. The conditions that remain unchanged are as follows:

4. The applicant shall submit a progress report to the Commission in writing, once every three months, on construction progress pursuant to Section 3 of the *Hydro and Electric Energy Regulation*. The first progress report shall be filed with the Commission three months from the date of issuance of this approval.
6. The applicant shall notify the Commission within 30 days of completing the power plant.
10. The applicant must perform a detailed electrical study and corrosion analysis and implement measures to prevent external pipeline corrosion prior to the project's completion. The applicant shall advise the Commission when this condition has been satisfied.
11. The applicant shall finalize its emergency preparedness and response plan and make copies available to members of the Killarney Lake Group prior to the project's completion. The applicant shall advise the Commission when this condition has been satisfied.
12. If the project encroaches upon newly identified wetlands, the applicant must re-site the offending project component(s) or receive ESRD approval to site the project within the wetland setback.

13. The applicant shall conduct a post-construction monitoring program for birds and bats in consultation with ESRD. The applicant shall advise the Commission when this condition has been satisfied.
 14. The applicant shall continue with pre-construction bat monitoring; submit the results of its pre-construction bat monitoring data to ESRD prior to operation of the project; and comply with all directions received from ESRD, including any recommended or required mitigation measures to protect bats. The applicant shall advise the Commission when this condition has been satisfied.
 15. The applicant shall develop and implement an environmental protection plan in consultation with ESRD. The applicant shall advise the Commission when this condition has been satisfied.
 16. The applicant shall, at all times during the construction and operation of the project, maintain insurance coverage that is sufficient to protect against any reasonably foreseeable liabilities. The applicant shall advise the Commission when this condition has been satisfied.
 17. The applicant shall comply with applicable reclamation standards current at the time of decommissioning, or if there are no legislative requirements in place, submit a reclamation plan to the Commission for approval.
 18. The applicant shall obtain Commission approval prior to making any material changes to the power plant or substantially varying the design and/or specifications of the power plant from what was stated in the amendment application or from what the Commission has approved.
 19. This approval is not transferable unless approved by the Commission.
41. The amended conditions will be discussed in the following sections, which will collectively address the social, economic and environmental effects of the amended project.

5.1 Consultation

42. The Commission has reviewed the applicant's participant involvement program and finds that it meets the requirements of Rule 007 and is satisfactory in the circumstances. The Commission also notes that there are no outstanding concerns from any party whose rights may be directly and adversely affected by this decision.
43. The Commission acknowledges that certain individuals and families, most of whom were among those persons who objected to the application that led to Decision 2014-040 (Errata), expressed concerns about this amendment application. The Commission, in its standing ruling, determined that none of these parties may be directly and adversely affected by this amendment application as they had not established that there would be any new measurable effects arising from the amended project as compared with the previously approved project. That said, the Commission recognizes when making its decision that some members of the community are opposed to the amended project. However, the Commission also bears in mind that a two-week hearing was held to consider these parties' concerns and that the parties hosting the turbines on

their property and other interested stakeholders have not indicated outstanding objections to the amended project.

44. The Commission has assessed the social effects of the projects and finds them to be acceptable.

5.2 Environment

45. The Commission considers the reduction in the number of turbines, the elimination of the substation, the reduction in collector lines and access roads, and continued work in consultation with ESRD results in an overall decrease in environmental effects when compared with the previously approved project. The Commission observes that the amended project would result in a decrease in the number of wind turbines and, correspondingly, the amended project site would be reduced from 3,560 hectares to 1,640 hectares. Also, the amended project's layout will create greater separation between the previously approved project and existing wetlands and animal habitats. Further, the reduction in the number of wind turbines is expected to reduce bird and bat mortality.

46. The Commission has considered the assessment of the effects to wildlife, as summarized in the ESRD sign-off, and relies upon the recommendations made by ESRD and commitments made by the applicant in its determination that the potential effects to wildlife during operation of the amended project will be managed.

47. In the Commission's view, sign-off by ESRD suggests that the effects on the environment are acceptable from its perspective. The Commission regards compliance with the existing regulatory requirements administered by other public or government departments or agencies to be important elements when deciding if potential adverse effects are acceptable and approval of a project is in the public interest. In line with the above approach, the Commission considers that sign-off from ESRD is strong evidence that the project's environmental effects will be acceptable.

48. The Commission accepts the applicant's commitment to consult with ESRD and complete and report additional wildlife surveys prior to construction of the amended project. In addition, as specified in Decision 2014-040 (Errata), the Commission expects the applicant to uphold its commitment to follow ESRD's *Bat Mitigation Framework*. The Commission observes that the implementation of this framework may include implementing mitigation measures prior to the amended project's initial operation, such as pre-emptive blade feathering and curtailment for lower wind conditions if the pre-construction surveys anticipate that the amended project will have a large effect on bats. The Commission acknowledges that pre-construction bat monitoring has been submitted to ESRD and that approval has been received.

49. As specified in Decision 2014-040 (Errata), the Commission recognizes that ESRD, in its sign-off, required the applicant to complete post-construction surveys to determine changes to bird and bat use of the areas associated with turbines and related infrastructure over a minimum of two years after construction. The bird surveys would be conducted using the methods described in Canada Wildlife Services' publication entitled *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds*.

50. As a result of the above, the Commission finds that the amended project's potential environment effects to be acceptable with the implementation of the above conditions. In imposing these conditions, the Commission is mindful that one of the purposes of the *Electric Utilities Act* is to assist in controlling pollution and ensuring environment conservation in the generation of electric energy in Alberta.

5.3 Noise

51. The Commission has reviewed the NIA submitted in support of this amendment application. The Commission observes that project-only noise contribution at all receptors will be lower than it would have been for the currently approved project.

52. Condition 7 of Approval U2014-64 directed the applicant to re-measure outstanding 2010 facilities in the evaluation of their sound power levels within three months of receiving the original approval. The applicant completed the measurements and submitted the results to the Commission on May 22, 2014. The Commission approved the report on July 23, 2014. The Commission considers that satisfaction of this condition was important information to be included in the new NIA for this amendment application.

53. Accordingly, the Commission, based on its review of the new NIA, finds that it was completed in accordance with the requirements of Rule 012.

54. The Commission considers that Condition 9 in Approval U2014-64 directed baseline and post-construction comprehensive noise studies at a number of receptor locations. The Commission acknowledges that the amended project increases the distance between a number of the receptors to the nearest wind turbine(s). As a result, the applicant submitted that receptors R004, R052, R055, R 065, R070 and the receptor at NW 31-40-1-W4M no longer require baseline or post-construction comprehensive noise surveys. Due to the importance of measures to ensure the amended project's compliance with the PSL, the Commission finds that approval of the amended project is conditional on the following:

- The applicant shall conduct baseline (pre-construction or post-construction with no turbines operating) and post-construction comprehensive noise studies, including an evaluation of low frequency noise, at receptors R063, R086, R141 and the receptor located in NW 31-40-1-W4M under representative conditions, in accordance with Rule 012: *Noise Control*. All studies and reports relating to the pre-construction and post-construction noise survey shall be filed with the Commission within one year of connecting the power plant to the Alberta Interconnected Electric System.

55. The new NIA indicates that noise levels at all dwellings are compliant with the daytime and nighttime PSLs and do not require noise attenuation barriers at third party facilities or the operation of turbines in the NRO mode or the shutting down of wind turbine(s) at nighttime. The Commission is satisfied that the applicant's estimated daytime and nighttime predicted cumulative sound levels meet the requirements of Rule 012.

56. Condition 8 in Approval U2014-64 directed the applicant to ensure all noise mitigation measures be utilized, if necessary, including noise barriers at third-party facilities and the operation of wind turbines in NRO mode, and shutting down of wind turbine(s) at nighttime to ensure compliance with permissible sound levels. Because the revised NIA indicated that the use of these mitigation measures is no longer required to meet the PSLs, the Commission finds that

any approval would no longer require the implementation of any noise mitigation measures in the first instance. However, the applicant is still required to ensure that the amended project meets the PSLs specified in Rule 012 at all times. For clarity, should either the baseline or post-construction comprehensive noise studies indicate non-compliance (or predicted non-compliance) with the PSLs, the Commission expects the applicant to implement any necessary mitigation measures immediately, including noise barriers, shutting down wind turbines, or the use of NRO modes, to achieve compliance.

57. As stated in Decision 2014-040 (Errata), the Commission concludes that compliance with daytime and nighttime PSLs, which is mandatory, will protect nearby residents from noise related health effects, including those residents with pre-existing medical conditions. The Commission has imposed the above conditions on its approval of the amended project to ensure that it strictly complies with Rule 012 and its PSL.

58. Overall, the Commission accepts that the amended project will reduce or have no effect on the noise impacts on area residents. Further, the Commission finds that approval of the amended project would provide some economic benefit for the community. The Commission expects that similar to the original project, the amended project, if approved, states that the applicant will hire local employees and use local services for construction and operation of the amended project. The amended project may also benefit the Alberta Schools Commodities Purchasing Consortium by providing it with long-term predictability of electricity costs and limiting its exposure to electricity price volatility. The Commission also finds that approval of the project will result in increased tax contributions to the Municipal District of Provost.

59. As stated in Decision 2014-040 (Errata) regarding the economic effects of the project, Section 3 of the *Hydro and Electric Energy Act* states that when performing its analysis under Section 17, the Commission cannot consider whether the project is an economic source of electric energy or if there is a need for the electric energy that would be produced by the project. Section 3 further requires the Commission to have regard for the purposes of the *Hydro and Electric Energy Act* and the *Electric Utilities Act* which contemplate an efficient electricity generation sector guided by competitive forces.

60. For the reasons stated above, the Commission has determined that the technical, siting, emissions, environmental and noise aspects of the power plant have been met.

61. Based on the foregoing, the Commission considers the amended project to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

6 Decision

62. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants the applicant the approval set out in Appendix 1 – Power Plant Approval 3520-D02-2015 – April 17, 2015, for the Bull Creek Wind Project. (Appendix 1 will be distributed separately).

63. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants the applicant the connection order set out in Appendix 2 – Connection Order 3520-D03-2015 – April 17, 2015, to connect the Bull Creek Wind Power Project to the FortisAlberta Inc. distribution system. (Appendix 2 will be distributed separately).

Dated on April 17, 2015.

Alberta Utilities Commission

(original signed by)

Henry van Egteren
Panel Chair

(original signed by)

Tudor Beattie, QC
Commission Member

(original signed by)

Neil Jamieson
Commission Member

Appendix A – AUC ruling on standing

[\(return to text\)](#)



AUC Standing
Ruling.pdf

(consists of 7 pages)

Appendix B – ESRD sign-off

[\(return to text\)](#)



ESRD Sign-Off.pdf

(consists of 10 pages)

March 4, 2015

To: Interested Parties

**1646658 Alberta Ltd.
Alteration to Bull Creek Wind Project
Proceeding 3520
Application 1610995-1**

Introduction

1. In this ruling, the Alberta Utilities Commission must decide if the persons who filed a submission relating to the alteration to the Bull Creek Wind Project have demonstrated that they have rights that may be directly and adversely affected by the Commission's decision on the project application. A person who demonstrates the potential for direct and adverse effect is said to have "standing."
2. The Commission asked me to write to you to provide its ruling and reasons for its ruling on the standing of those persons who filed submissions in relation to Proceeding 3520.

Background and statements of intent to participate

3. 1646658 Alberta Ltd., a subsidiary of BluEarth Renewables Inc. (BluEarth), filed an application with the AUC to alter the already-approved Bull Creek Wind Project. The applied for project would have 17 wind turbines and a total installed capacity of 29.2 megawatts (MW), as opposed to the original 46-turbine, 115 MW project approved by the AUC in Approval [U2014-64](#).¹ In its application, BluEarth is seeking approval for the following project amendments (the altered project or the amendment application):

- (i) a reduction in capacity from 115 MW to 29.2 MW;
- (ii) a reduction in the number of wind turbines from 46 to 17;
- (iii) a change in wind generation technology from GE 2.5-103 to GE 1.7-103 turbines;
- (iv) a reduction in the size of the project area from approximately 3,560 hectares to 1,640 hectares;
- (v) the inclusion of a fibre optic communication line; and
- (vi) a modification from a transmission to distribution interconnection.

¹ Approval U2014-64: 1646658 Alberta Ltd., 115-MW Wind Power Plant, Application 1608556, Proceeding 1955, February 20, 2014.

4. The altered project would be connected to the FortisAlberta Ltd. distribution system. Therefore, neither the approved Bull Creek substation nor the other transmission facilities would be required to connect the altered project to the Alberta Interconnected Electric System. The locations of the 17 proposed turbines would be within 50 metres of the coordinates of the locations originally approved.

5. On December 12, 2014, the Commission issued a revised notice of application for Proceeding 3520. In the revised notice of application, the Commission directed any person who had concerns with, or objections to, the application, or who wished to support the application, to file a submission by January 6, 2015.

6. In response to its notice of application, the Commission received objections to the altered project from the following individuals:

- Kevin and Eiri Beatty
- Rick Hager
- Doug and Heather Buck
- John and Lorraine Skinner
- Charlene and Alan Hager
- Benjamin Hager and Deandra Statchura

7. The Commission also received submissions from TransCanada Energy Ltd. (TransCanada) and TransAlta Corporation (TransAlta). In their respective submissions, these parties asserted, among other things, that the altered project would create generation additions to the transmission system in the Sheerness area and could create new constraints or exacerbate existing constraints on the transmission system. These parties submitted that the amendment application may be the only opportunity available to understand whether their interests may be directly and adversely affected.

8. On January 13, 2015, the Commission wrote to interested parties and stated that before ruling on standing it would give BluEarth an opportunity to comment on the standing of those persons who filed statements of intent to participate in relation to Proceeding 3520.

9. On January 23, 2015, BluEarth commented on the standing of those parties who filed objections to the amendment application. BluEarth submitted that these parties had not met the Commission's test for standing as none of them will experience any incremental effects as a result of the altered project, versus the currently approved project, that have the potential to directly and adversely affect their rights.

10. BluEarth also was of the view that the amendment application as filed will result in *no material change* in project effects, compared to the effects associated with the approved project.²

² Exhibit 3520-F0026, BluEarth Response to amendment SIPs, page 3.

11. With regard to TransAlta and TransCanada, BluEarth stated that transmission constraints and generation addition are policy matters unrelated to the facility alteration application. BluEarth also classified their interventions as collateral attacks on Decision [2014-242](#).³
12. On January 20, 2015, the Commission received a letter of support from David Blume.
13. The Commission afforded parties an opportunity to respond to BluEarth's comments on their standing.
14. The Commission received further submissions from Mr. and Ms. Beatty, Mr. A. and Ms. C. Hagar, Mr. B. Hager and Ms. Stachura, TransCanada and TransAlta responding to BluEarth's comments on their standing.
15. Mr. and Ms. Beatty stated that the degree of changes to the altered project should constitute a new project and not an amendment. They acknowledged they are further away from the altered project but stated they still had the right to be concerned for their livelihoods, their neighbours and community, and the local environment and wildlife.
16. Mr. A. Hagar and Ms. C. Hager and Mr. B. Hager and Ms. Stachura expressed their continued noise concerns and wanted assurances that there are no noise issues. They stated that everyone within a 10 kilometre radius should be given standing.
17. TransCanada and TransAlta also replied to BluEarth's comments on their standing. Subsequently, TransAlta and TransCanada wrote to the Commission and withdrew their respective statements of intent to participate.
18. On February 12, 2015, the Commission received a motion from Mr. and Ms. Bonnefoy (the Bonnefoys) requesting, among other things, permission to file a statement of intent to participate in the above-referenced proceeding pursuant to Rule 001: *Rules of Practice*.
19. By correspondence dated February 17, 2015, the Commission informed interested parties that it would consider the Bonnefoys' application for standing, notwithstanding that the deadline to file a statement of intent to participate set out in the Commission's notice of application had past. The Commission afforded parties an opportunity to comment on the Bonnefoys' standing by February 20, 2015 and the Bonnefoys an opportunity to reply to comments.
20. On February 20, 2015, BluEarth commented on the Bonnefoys' standing. BluEarth stated that there would be no incremental change as a result of the amendment application and, in fact, the potential impacts to the Bonnefoys would decrease if the Commission approves the amendment application. Therefore, BluEarth submitted that the Bonnefoys had not established that their rights may be directly and adversely affect from the amendments.
21. The Commission also received a further submission from Ms. Beatty dated February 17, 2015 expressing concerns related to the altered project and BluEarth.

³ Exhibit 3520-X0030, BluEarth Response to amendment SIPs, page 5.

Commission findings

How the Commission determines standing

22. Standing before the Commission is determined by subsection 9(2) of the *Alberta Utilities Commission Act*, which states:

(2) If it appears to the Commission that its decision or order on an application may directly and adversely affect the rights of a person, the Commission shall

(a) give notice of the application in accordance with the Commission rules,

(b) give the person a reasonable opportunity of learning the facts bearing on the application as presented to the Commission by the applicant and other parties to the application, and

(c) hold a hearing.

23. In *Cheyne v. Alberta (Utilities Commission)*, the Alberta Court of Appeal characterized Section 9(2) as the equivalent of Section 26(2) of the *Energy Resources Conservation Act* and confirmed that there is a two-part test for standing. First, a person must demonstrate that the right he or she is asserting is recognized by law. Second, a person must provide some information that shows that the Commission's decision on the application may directly and adversely affect his or her rights. The first part of the test is legal; the second part of the test is factual. For the factual part of the test, the Alberta Court of Appeal has stated that "some degree of location and connection between the work proposed and the right asserted is reasonable."⁴

24. In *Sawyer v. Alberta (Energy and Utilities Board)* the Alberta Court of Appeal commented further on the factual component of the standing test and stated that "...in considering the location or connection, the Board is entitled to look at factors such as residence, the presence or absence of other wells in the area, and the frequency and duration of the applicant's use of the area near the proposed site."⁵

25. The Commission assesses the potential for direct and adverse effect on a case-by-case basis, having regard for the specific circumstances of each proposed project application and each application for standing. The Commission considers that the expression of general or broad concerns about a proposed project, without some link or connection to the demonstrated or anticipated characteristics of a proposed project will generally be an insufficient basis for establishing the potential for a direct and adverse effect. In the Commission's view, this is the very mischief that the Alberta Court of Appeal identified when it opined that "some degree of location or connection between the work proposed and the right asserted" is a necessary ingredient for standing.⁶

⁴ *Dene Tha' First Nation v. Alberta* (Energy and Utilities Board), 2005 ABCA 68 at para 14.

⁵ 2007 ABCA 297 at para 16.

⁶ *Dene Tha' First Nation v. Alberta* (Energy and Utilities Board), 2005 ABCA 68 at para 14.

26. In relation to determining standing on an amendment application, a person must provide information that shows the Commission's decision on the amendment application may directly and adversely affect the rights of that person.⁷ The determination in relation to whether there is a direct and adverse effect relates to the effects of the amendment versus what was previously approved and not the effect of the amendment versus a greenfield or new development. In *Visscher v. Alberta (Energy Resources Conservation Board)*, the Alberta Court of Appeal stated:

If the expansion will have no measurable impact, then permitting standing would amount to a collateral re-examination of the permit originally given for the existing facility. There is no issue of law of sufficient importance raised...⁸

27. If the Commission finds that a person has standing pursuant to Section 9(2) of the *Alberta Utilities Commission Act*, it must hold a hearing to consider the person's concerns about the subject application. Further, persons with standing have the right to fully participate in the hearing. The Commission considers this to include the right to file evidence in support of their positions, the right to question or cross-examine the applicant(s) on its (their) evidence and the right to make argument.

Standing ruling

28. In reaching its determinations set out within this ruling, the Commission members considered all relevant materials comprising the record of this proceeding. References to specific parts of the record were intended to assist the reader in understanding the Commission's reasoning relating to a particular matter and should not be taken as an indication that it did not consider all relevant portions of the record of this proceeding. With respect to Ms. Beatty's submission dated February 17, 2015, filed as Exhibit 3420-X0043 in the proceeding, the Commission has considered this submission as an attachment in support of Mr. and Ms. Beatty's application for standing.

29. The Commission has reviewed the amendment application, including the nature of the altered project itself; namely, the specific proposed changes to the Bull Creek Wind Project. For the reasons that follow, the Commission is of the view that the amendment application will not create any new, measurable adverse effects as compared to the approved Bull Creek Wind Project on those individuals and families objecting to the amendment application. Accordingly, the Commission has determined that none of the parties who filed a statement of intent to participate have standing in Proceeding 3520.

30. The Commission has reviewed the concerns expressed by Mr. A. Hager and Ms. C. Hager, Mr. B. Hagar and Ms. Stachura, and Mr. and Ms. Bonnefoy all of whom are located within a 2,000 metre radius of the altered project. The Commission considers that these parties have not demonstrated, on a factual basis, that the amendment application has the potential for increased direct and adverse effects when compared with the approved Bull Creek

⁷ Exhibit 0093.00, Application to Amend the Previously Approved WR2 Project, Application 1610214, Proceeding 3004, March 27, 2014.

⁸ 2011 ABCA 209 at para 11.

Wind Project. In making its determination, the Commission has considered the generation capacity and the height of the turbines, and that the altered project is the same distance, or further away from these parties' residences as they are in the previously approved Bull Creek Wind Project.⁹

31. The Commission is aware that since the original hearing, there may be further information available on the effects of wind power plants. However, these parties failed to explain how this information demonstrates that there may be increased direct and adverse effects from the amendment application taking into account the specific nature of the altered project. The Commission finds that, in the absence a measurable adverse effect from the amendment application, permitting standing to examine these reports would amount to a collateral re-examination of the permit originally given for the Bull Creek Wind Project.

32. With respect to Mr. and Ms. Beatty, Mr. Rick Hager, Mr. and Ms. Buck, and Mr. and Ms. Skinner, an important consideration for the Commission was these parties' distances from the altered project. While proximity to a project is not the only factor that the Commission will consider when reviewing an application for standing, it is an important one. The fact that these parties do not own or reside on land located within 2,000 metres of the altered project area has a direct bearing on whether there is a direct and adverse impact on them. In circumstances such as this, it was incumbent upon these parties to establish a connection between the concerns expressed and the anticipated effects associated with the altered project approval. In the Commission's view, the general concerns expressed, including the details of the altered project, provide an insufficient basis for granting standing, especially given the nature of the project and its distance from the lands owned by these parties. Based on the above, the Commission considers that these parties have not demonstrated that the amendment application may create a direct and adverse effect on their rights or interests.

33. The Commission observes that Mr. Blume has not objected to the amendment application. However, given Mr. Blume's land location in relation to the altered project, he would be entitled to fully participate if a hearing had been held on the amendment application.

Conclusion

34. The Commission has determined that there is no party whose rights may be directly and adversely affected by its decision in Proceeding 3520. As such, the Commission will not be holding a hearing in this matter.

⁹ Rule 007 states that after an approval is received for movement less than 50 metres, the applicant is not required to reapply unless there is an adverse impact on the permissible sound level or wildlife setback distances.

35. If you have any questions please contact the undersigned at 403-592-4499.

Sincerely yours,

Shanelle Sinclair
Commission Counsel



Environment and Sustainable Resource
Development

Fish and Wildlife Division
#8, 4701-52 Street
Vermilion, Alberta
Y9X 1J9
Canada
Telephone: 780-853-8137
www.alberta.ca

November 17, 2014
Tom Bird
BluEarth Renewables Inc.
34 Harvard Road
Guelph, ON N1G 4V8

Dear Mr. Bird,

This letter is to advise that Environment and Sustainable Resource Development (Resource Management) Staff have reviewed the Environmental Evaluation Addendum and associated updated report content related to the Bull Creek Wind Farm planned re-submission to the Alberta Utilities Commission by 1646658 Alberta Ltd., a subsidiary of BluEarth Renewables Inc ("BluEarth"). This project was approved by the Alberta Utilities commission on February 20, 2014 (Approval No. U2014-64). This approval highlighted several requirements that BluEarth was to meet during preparation to move ahead with the project. BluEarth has moved forward with work required to meet the AUC conditions and has also made significant changes to the planned project. In response to the project changes and additional information that has been supplied, attached is a copy of the formal updated sign-off letter/Wind Energy Referral Report which reviews the potential impacts on wildlife and wildlife habitat of this project and appropriate alterations or mitigations for inclusion with your application to other regulatory agencies.

Environment and Sustainable Resource Development- Resource Management considers the reports, turbine locations, and associated mitigation measures current for this defined project. Any deviations to the reported siting or mitigation measures requires further review to ensure elements of wildlife and habitat are protected. Review of the Decommissioning Plan will be required prior to implementation.

Sincerely,

A handwritten signature in blue ink that reads "Emily Herdman".

Emily Herdman
Wildlife Biologist
Vermilion

Cc: Dave Moore, ESRD; Alison Beal, Stantec Consulting Limited

Wind Energy Referral Report – ESRD Resource Management

A. Alberta Resource Management Review:

The project [Bull Creek Wind Power Project](#) was reviewed by Emily Herdman (Wildlife Biologist, ESRD). Environment and Sustainable Resource Development – Resource Management (ESRD-RM) has reviewed the proposal (including turbine locations) and is satisfied with the monitoring and mitigation of impacts to wildlife and their associated habitats, including Species at Risk for the construction of the project. Post-construction monitoring results will be reviewed by ESRD-RM and any additional mitigations required as a result of those results will be developed by 1646658 Alberta Ltd., a subsidiary of BluEarth Renewables Inc. (referred to throughout as BluEarth Renewables Inc. or BluEarth) in consultation with ESRD-RM. ESRD-RM has reviewed the proposed location, proposed mitigation strategies, including associated infrastructure and construction plans, and post-construction monitoring program, as detailed below.

ESRD- RM Office: [Vermilion](#)

The [Bull Creek Wind Power Project](#) Wind energy environmental evaluation plan and addendum for [Bull Creek Wind Power Project](#) meets with the recommended pre-construction and construction mitigation strategy.

Signature:  Date: [November 17, 2014](#)

Printed Name: [Emily Herdman, Wildlife Biologist, Vermilion](#)

B. Project Details

Project Name: [Bull Creek Wind Power Project](#)

Company name: [1646658 Alberta Ltd, a subsidiary of BluEarth Renewables Inc.](#)

AUC Approval #: [U2014-64](#)

Location of Project: Section: [Various](#) TWP: [41](#) RGE: [1, 2](#) Meridian: [W4](#)

Project Details: Area: [36](#) km² Turbines #: [17](#) Height: [80](#) m Blade Diameter: [103](#) m

Bull Creek Wind Power Project

Turbine Locations (as of October 14, 2014)

Turbine ID	Easting (Zone 12, NAD 83)	Northing (Zone 12, NAD 83)
17	560456.6	5817584
18	561219.8	5817162
19	561391	5818323
20	561588	5817388
21	562232.9	5818034
22	562018.4	5817595
23	562005.5	5819144
24	562163.6	5818369

Turbine ID	Easting (Zone 12, NAD 83)	Northing (Zone 12, NAD 83)
27	562206.3	5818785
43	565341.8	5816843
44	565457.6	5818096
45	565581	5818420
46	565731.8	5817223
47	566478.2	5818066
48	566317.3	5818488
51	566936.3	5818497
52	567347.6	5818065

C. Wildlife Issues to be addressed (list current impacts):

Site Selection:

Pre-development Planning and Surveys

Please refer to the attached reports:

1. Environmental Evaluation Addendum – Bull Creek Wind Power Project. Stantec Consulting Ltd. On behalf of BluEarth Renewables Inc. Received by ESRD-RM October 30, 2014.
2. Environmental Evaluation, Bull Creek Wind Power Project. Submitted to BluEarth Renewables Inc. 200, 4723 1 Street SW Calgary, Alberta T2G 4Y8. Golder Associates, report number: 11-1334-0085. Received by ESRD-RM April 2012.
3. Bull Creek Wind Power Project Fall 2014 Pre-Construction Bat Monitoring Report. Prepared for BluEarth Renewables Inc. Stantec Consulting Ltd. Project Number 123511363. Received by ESRD-RM October 20, 2014.
4. Bull Creek Wind Power Project Fall 2014 Supplemental Pre-Construction Wetland Assessment. Prepared for BluEarth Renewables Inc. Stantec Consulting Ltd. Project Number 123511363. October 31, 2014. Received by ESRD-RM November 3 2014.

Impacts to Native Grasslands

ESRD-RM identified the potential negative impacts of siting wind turbines in areas of native grasslands on wildlife, in particular on species at risk. Negative impacts may include, but are not limited to; habitat fragmentation, site abandonment, and loss of foraging/breeding/rearing habitat. In the updated project plan (see Environmental Evaluation Addendum), BluEarth Renewables Inc. has chosen to proceed with only 2 turbines located in native grassland (a decrease from 9 turbines). The length of collector system components and access roads in native grassland has also been reduced from 13.8 km to 1.409 km. The addition of underground fibre-optic cable will affect another 922 m of native grassland.

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Wildlife Impacts:

ESRD-RM identified concerns over the potential of negative impacts on wildlife caused by wind turbines or related infrastructure including access roads, and collection lines. ESRD-RM recommends that areas immediately adjacent to key wildlife habitats be avoided by appropriate setbacks as outlined in the *Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta* (<http://esrd.alberta.ca/fish-wildlife/wildlife-land-use-guidelines/documents/WildlifeLandUse-SpeciesHabitatGrasslandParkland-Apr28-2011.pdf>).

Specific to the Bull Creek Wind Project the following issues were identified by ESRD-RM:

1. *Collector lines between Turbine 44 and Turbine 46:* This collector line runs between two wetlands and falls within the recommended 100 meter buffer from both wetlands. However this line is located on a high point of land between the wetlands and mitigations will be put in place to avoid negative impacts on the adjacent wetlands.
2. *Proximity to Piping Plover Critical Habitat:* Killarney, Leane, and Dillberry Lakes have been identified as Critical Habitat for Piping Plover, which is ranked as Endangered in Alberta and Canada. All turbines in the updated project are at least 4.4 km from any of the lakes and well outside of the 200m setback for Piping Plover habitat.
3. *Proximity of the project to an Important Bird Area (IBA):* the project is sited adjacent to the Killarney Dillberry Lakes (KDL) IBA. ESRD-RM recommends that the IBA and a minimal buffer be maintained between the project and this IBA. The updated project sites all turbines at least 2.2 km away from the IBA.
4. *Proximity to wintering range:* ESRD-RM identified concerns over the proximity of the development to critical winter range for both mule deer and moose. While ESRD-RM generally recommends that timing conditions (Jan 15th to April 30th) identified under the Recommended Land-use Guidelines: Key Wildlife and Biodiversity Zones. (<http://esrd.alberta.ca/FishWildlife/WildlifeLandUseGuidelines/documents/WildlifeLandUse-KeyWildlifeBiodiversityZones-Dec03-2010.pdf>) it is recognized that winter conditions are preferred time of construction to lessen the impacts on breeding birds and native vegetation.
5. *Construction Timing and breeding birds:* The primary concern for grassland birds is related to construction during critical breeding, nesting and rearing stages, April 1st-July 15th. ESRD-RM recommends that all activities on native grassland occur outside the critical breeding period. This will ensure that grassland bird nests, including species at risk, are not destroyed or damaged as per the *Alberta Wildlife Act* and the *Migratory Bird Conventions Act*. Refer to Section E for detailed mitigation plans.

Avoidance of Migration Routes for Birds and Bats

A large number of bird species and bat species in Alberta migrate between overwintering habitat south of the Canadian Border and their breeding grounds here in Alberta. During these migrations species may form large groups and may migrate along the same route year after year. Wind energy projects that are built within these migration routes present a large hazard and an increased mortality risk. ESRD-RM recommends that wind farms not be sited along migration routes.

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D. Industry Submission of Wildlife Monitoring Program (submission to Fisheries and Wildlife Management Information system-FWMIS)

Research License #: Not available

Research licenses were not required for the completion of the pre-construction wildlife surveys by BluEarth Renewables Inc. A research permit will be required for the Post Construction Monitoring Plan which BluEarth Renewables Inc. has committed to develop with ESRD-RM.

Pre-construction survey data submitted within 2 years of project construction:

In addition to the initial pre-construction surveys completed as part of the original submission, updated Bird Migration and Bat Monitoring Surveys were completed in 2014. A wetland survey was also completed to meet conditions of the AUC approval. Please see the following attached reports for more details:

1. Environmental Evaluation Addendum – Bull Creek Wind Power Project. Stantec Consulting Ltd. On behalf of BluEarth Renewables Inc. Received by ESRD-RM October 30, 2014.
2. Environmental Evaluation, Bull Creek Wind Power Project. Submitted to BluEarth Renewables Inc. 200, 4723 1 Street SW Calgary, Alberta T2G 4Y8. Golder Associates, report number: 11-1334-0085. Received by ESRD-RM April 2012.
3. Bull Creek Wind Power Project Fall 2014 Pre-Construction Bat Monitoring Report. Prepared for BluEarth Renewables Inc. Stantec Consulting Ltd. Project Number 123511363. Received by ESRD-RM October 20, 2014.
4. Bull Creek Wind Power Project Fall 2014 Supplemental Pre-Construction Wetland Assessment. Prepared for BluEarth Renewables Inc. Stantec Consulting Ltd. Project Number 123511363. October 31, 2014. Received by ESRD- RM November 3 2014.

BluEarth Renewables Inc. has committed to complete additional wildlife surveys prior to construction of the project. As per standard protocol, a pre-construction wildlife survey of the turbine sites and associated infrastructure will occur in the spring preceding construction to ensure that no new wildlife conflicts have appeared (specifically: Raptor Nest surveys, Sharp-tailed Grouse Lek surveys, Spring bird movement surveys, Amphibian surveys, and Breeding Bird surveys), and results reported to the ESRD-RM representative. This may require additional mitigative measures, developed through consultation with ESRD-RM. ESRD-RM does not required Burrowing Owl surveys to be completed because the updated project is restricted to agricultural land and no portions are impacting potential habitat. Amphibian surveys will be conducted at wetlands that are within 100 m of infrastructure including turbines, access roads, and collector lines. ESRD-RM will review results of amphibian surveys with BluEarth Renewables Inc. in order to determine appropriate mitigations as necessary.

Post-construction Survey dates:

To be determined as part of the Post-Construction Monitoring Plan which BluEarth Renewables Inc. has committed to develop with ESRD-RM. Please refer to the *Wildlife Monitoring* section of this letter.

Annual Due date for Post construction Survey data submittal (dd/mm): 01 / April

D. ASRD-FWD recommendations:

Recommendations Relating to Site Selection (setbacks based from tip of turbine blade):

Impacts to Native Grasslands

To minimize negative impacts to wildlife, 15 of 17 potential turbines are located in cultivated or previously disturbed lands. ESRD-RM recommends avoidance of siting wind turbines and associated infrastructure on native grasslands.

Two of the 17 turbines are proposed on native grasslands. These grasslands are considered marginal with significant disturbances including altered range communities, and increased numbers of human developments throughout. This project lies outside the range of many species at risk that rely on native grasslands as key breeding and rearing habitat. BluEarth Renewables Inc. has taken efforts to site turbines, roads, and collection lines within existing disturbances on native grasslands to the extent possible. Due to these factors ESRD-RM has agreed to this turbine layout. BluEarth Renewables Inc. has agreed to the following additional mitigation measures during the construction and operation of these nine turbines on native grasslands:

1. Activities on native grasslands will be limited within the project footprint (turbine lease, interconnection right of way, construction and operations access routes, substation and workspaces).
2. That all turbines, road collection system and substation construction should occur outside the critical grassland bird breeding period (April 1st - July 15th) in areas of native grasslands. Construction should either be completed before April 1st or after July 15th of the construction year.
3. All equipment will be cleaned and decontaminated to prevent the spread of weeds and other invasive species to the project area.
4. Areas not containing permanent facilities or operational access roads will be reclaimed to an equivalent land use capability in accordance with regulatory requirements.
5. All activities on native grasslands should occur during dry or frozen conditions and follow the mitigation as outlined in the Environmental Protection Plan that will be developed in consultation with ESRD-RM.
6. Roads, fencing and other infrastructure on native prairie will be limited.
7. Topsoil will be stripped, salvaged, for use during reclamation.
8. Minimal disturbance techniques (i.e. plough in) will be used for underground collector lines.
9. Sod salvage and replacement will be attempted in areas of short duration and small footprint size.
10. Reclamation on native pasture will use certified inspected native seed mixtures.

Aboveground power lines to avoid strikes and electrocution of birds

Information provided to ESRD-RM indicates that the collection system power lines for the wind turbines will be primarily underground. However the proponent has not indicated which lines may differ from this plan. See attached report (section 1.1.3).

ESRD-RM recommends that all collection lines on native prairie be placed underground. If aboveground lines are used in the project, than post-construction wildlife surveys of the

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aboveground powerlines should be completed. If it is determined through post-construction wildlife surveys that avian species are colliding with aboveground lines, visibility enhancement devices will be installed to reduce the risk of collision with the line. These devices may include marker balls, bird diverters or other line visibility devices.

Wildlife Impacts

All ESRD-RM Wildlife Guidelines for Alberta Wind Energy Projects (Sept 19, 2011) have been considered and applied to site by BluEarth Renewables Inc. BluEarth Renewables Inc. has submitted preliminary mitigation measures. Further input and consultation with ESRD-RM will occur in order to finalize an Environmental Protection and Reclamation Plan (EPRP).

Special mitigation was developed between ESRD-RM and BluEarth Renewables Inc. at specific wildlife sites, this includes:

1. **Raptor nests:** All turbines, access roads, collector lines, work areas and the substation have been located over 180 meters from any raptor nest. This is consistent with ESRD-RM recommendations. BluEarth Renewables Inc. has committed to monitor all known nests sites and to complete raptor nest searches annually until the project is constructed. If additional sites are found, BluEarth Renewables Inc. will consult with ESRD-RM to determine appropriate mitigation for these sites.
2. **Proximity of the wind farm to Piping Plover Critical Habitat:** ESRD-RM identified potential concerns with the siting of the project due to its proximity to Killarney Lake, which have been identified as Critical Habitat for piping plover. The current project layout is outside the 200 meter setback from piping plover, 4.4 km from nearest turbine, and the project is south of the lake. The piping plover typically moves east to west through this region. Therefore, it is not expected that the development will impact migration of the species to its nesting grounds. Based on the current project design and biology of the piping plover this project is not deemed to be significant concern.
3. **Proximity of project to the Killarney-Dillberry-Leane IBA:** No turbines will be constructed within 2 km of the KDL IBA. This geographic separation is anticipated to allow birds the room for unobstructed approach and or departure flight paths over the area.
4. **Wetland Setbacks:** The Supplemental Pre-Construction Wetland Assessment (attached) identified a number of wetlands not identified in the initial Environmental Evaluation. BluEarth Renewables Inc. moved a number of turbines and other project infrastructure to avoid or minimize conflict with wetland setbacks, five turbines remain within 150 m of wetland(s) because of other restrictions to changing of turbine sighting. A number of these wetlands (BW010, BW011, BW001) have been significantly altered by agriculture and are unlikely to provide wildlife value. Pre-construction amphibian surveys will be conducted at all wetlands within 150 m of project infrastructure to help determine appropriate mitigations during construction. In addition, breeding bird surveys will be completed for the duration of the post-construction monitoring program for turbines 27, 44, 47, and 48 and will be completed pre-construction if clearing is to take place after the start of the nesting period. The collector line between turbines 44 and 46 runs between two wetlands. This line occurs on a high point of the land within 30 meters of these wetlands. The landholder has developed this high point as an access road between their land holdings and it is used regularly to transport farm equipment. This road was deemed by ESRD-RM to be an

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existing road and in efforts to limit new infrastructure the current collection line layout was accepted by ESRD-RM with the following conditions

- a. The collection line be installed outside the critical breeding period for breeding birds of April 1st-July 15th.

Additional mitigation for wetlands proposed by BluEarth Renewables Inc. and accepted by ESRD-RM include:

1. All equipment will be routed around wetlands.
2. All project activities will follow BMP for sedimentation and spill prevention.
3. All disturbed areas not used for subsequent operation will be reclaimed following construction to minimize erosion and siltation.

Additional mitigations specific to amphibians (e.g. drift fencing, timing of construction) may be identified if amphibian surveys indicate the presence of amphibians in wetlands within 150 m of planned project infrastructure.

Bird and Bat Migration Routes

- Migration surveys were completed in the 2008, 2009, and 2014. The Bull Creek Wind Farm was not sited near ridgelines, or other terrains that concentrate migratory bird and bat species. However, as the bat activity rate during the fall migration experienced some highs, especially in August (potential bat migration timing), ESRD-RM expects a potentially high risk to bats. The 2014 Fall Migratory Bird Survey preliminary results suggest that there are no migratory bird flight corridors or areas of concern within the project area. Fatality risk for migrating birds is likely to be low within the project area.

The post-construction monitoring program for the Bull Creek site will need to gather additional data on activity and fatality levels of birds and bats, which can be used to further examine the relationship between activity and fatality rates. Mitigation will be required if post-construction fatality assessment reveals a higher than acceptable bird or bat fatality rate. A firm commitment for implementing mitigation and adaptive management has been made by BluEarth Renewables Inc. and they will conduct post-construction monitoring to assess bird and bat mortality and implement mitigation measures if deemed necessary by ESRD-RM due to excessive bat mortality. ESRD-RM recommends that mitigation measures for excessive mortality may include but are not limited to:

- Alter cut-in speeds at turbines with high mortality rates.
- Ensuring checks and balances are in place to prevent unnecessary lighting at night.
- Any mitigation that is deemed appropriated based upon the site-specific circumstances or incidents following consultation with ESRD-RM.

Results of the post-construction monitoring will be provided annually to ESRD-RM. Results will be communicated as quickly as possible once monitoring has been completed to allow for the development of mitigation interventions if required.

Mitigation for Decommissioning of Wind Farm

A full decommissioning plan for the Bull Creek Wind Farm project has not been reviewed by ESRD-RM. ESRD-RM will provide review and comment with regards to the potential impacts of the decommissioning plan on wildlife and wildlife habitat once it has been prepared by BluEarth

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Renewables Inc. or the project owners at time of decommissioning. As a preliminary step, BluEarth Renewables Inc. has identified the following mitigation strategies for use during decommissioning of the Bull Creek Wind Farm project:

1. All areas will be reclaimed to equivalent land use capabilities.
2. In areas of wetlands:
 - a. Underground cabling will be left in situ
 - b. All project activities will follow BMP for sedimentation and spill prevention
3. All decommissioning activities will be restricted to the access ROWs, leases and temporary work areas.
4. All connection points for collector lines will be excavated and buried powerlines removed to 1 m below surface.
5. Buried connection lines will be left in place below the cultivation layer to prevent soil disturbance.
6. Aboveground lines and poles will be removed, holes will be filled and covered with topsoil.
7. Soil will be ploughed as necessary to repair any compaction.
8. Disturbed areas on native or tame pastures will be seeded with the appropriate seed mixtures.
9. All spills will be remediated and reclaimed.
10. All waste will be removed.
11. Turbine foundations will be removed to 1 meter below grade and turbine footprint will be returned to original land use.
12. Reclamation of native pasture will use certified inspected native seed mixtures.
13. All decommissioning activities will be scheduled to avoid sensitive breeding periods and areas.

Wildlife Monitoring Requirements:

To be determined through consultation with ESRD-RM and BluEarth Renewables Inc.

BluEarth Renewables Inc. have committed to develop a Post-Construction Monitoring Plan (PCMP) in consultation with ESRD-RM. Post-construction follow-up surveys will be completed over a minimum of 2 years to determine changes to bird and bat use of the areas associated with turbines and related infrastructure. Specifically monitoring will occur during the bird and bat migration periods (March 1st- October 31st).

Carcass searches will be completed within blade (radius) diameter plus ten meters of the turbines at a representative sample of 1/2 of the turbine sites. Turbines 27, 44, and 48 will be included in this sample because of their proximity to wetlands and concerns about potential negative impacts. Surveys will be conducted using the methods described in "*Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds*" (Canadian Wildlife Service 2007). Each searcher will be tested for search efficiency. Additionally a scavenger removal study will be carried out. Individual carcasses will be collected, labeled and submitted to ESRD-RM. A detailed report of the post-construction monitoring will be provided to ESRD-RM annually.

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If a site (turbine or other infrastructure) is found to have a higher than accepted rate of mortality (as determined by ESRD-RM), mitigation measures will be employed. ESRD-RM recommends that mitigation measures for excessive mortality may include but are not limited to:

- Alter cut in speeds at turbines with high mortality rates.
- Ensuring check and balances are in place to prevent unnecessary lighting at night.
- Any mitigation that is deemed appropriated based upon the site specific circumstances or incidents following consultation with ASRD-FWD.

Specific attention to native prairie and wildlife impacts will also be assessed by BluEarth Renewables Inc. in the post-construction monitoring plan to be developed with ESRD-RM. Staff from ESRD-RM will have opportunity to provide detailed input into monitoring and mitigation strategies contained in the post construction monitoring plan.

If aboveground lines are used in the project, than post-construction wildlife surveys of the aboveground powerlines should be completed. If it is determined through post-construction wildlife surveys that avian species are colliding with aboveground lines, visibility enhancement devices will be installed to reduce the risk of collision with the line. These devices may include marker balls, bird diverters or other line visibility devices.

Prior to commencement of the PCMP, BluEarth Renewables Inc. must ensure that proper regulations are followed and appropriate research and collection licenses are obtained. Information collected under the authority of the licenses will be submitted annually to ESRD-RM to be entered into the FWMIS database.

As full discussions on PCMP development have not yet occurred, survey timelines will be determined in consultation with ESRD-RM at a later date.