



Stirling Wind Project Ltd.
Stirling Wind Project

Alberta Electric System Operator
Stirling Wind Project Connection
Needs Identification Document

AltaLink Management Ltd.
Stirling Wind Project Connection
Facility Applications

April 26, 2019

Alberta Utilities Commission

Decision 22546-D01-2019

Stirling Wind Project Ltd.
Stirling Wind Project
Applications 22546-A001 to 22546-A003

Alberta Electric System Operator
Stirling Wind Project Connection Needs Identification Document
Application 22546-A004

AltaLink Management Ltd.
Stirling Wind Project Connection Facility Applications
Applications 22546-A005 to 22546-A006

Proceeding 22546

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**Decision 22546-D01-2019
Proceeding 22546
Applications 22546-A001 to A006**

1 Decision summary

1. In this decision, the Alberta Utilities Commission considers whether to approve an application from Stirling Wind Project Ltd. to construct and operate a wind power project and a collector substation in the Lethbridge area (the project). The Commission must also consider a needs identification document (NID) application from the Alberta Electric System Operator (AESO) as well as a facility application from AltaLink Management Ltd. requesting approval for facilities to provide transmission system access to the project (transmission facilities).

2. For the reasons that follow, the Commission confirms the AESO's assessment of the need to be correct and finds that approval of the facility applications is in the public interest having regard to the social, economic and other effects of the project and transmission facilities, including their effects on the environment.

2 The scope of the proceeding and structure of this decision

3. As discussed in greater detail in Section 7.1, the facilities proposed by AltaLink to provide transmission system access to the project include construction of a proposed transmission line. To accommodate AltaLink's proposed transmission line, relocation of an existing FortisAlberta Inc. distribution line would be required. The Commission received submissions concerning relocation of this distribution line; however, that matter is beyond the scope of this proceeding. The Commission's jurisdiction in this proceeding is confined to consideration of the NID and facility applications described above. Further, the potential relocation of the distribution line is for FortisAlberta to determine. Relocation of the distribution line, will therefore not be addressed further in this decision.

4. The Stirling power plant application, the AESO NID application, and the AltaLink transmission facility application are distinct applications and the Commission must determine separately whether to grant or deny each of them. Nevertheless, there are issues common to the three applications. In recognition of this and to avoid unnecessary repetition, the decision is structured as follows.

- a. Section 3 provides a brief introduction to the proceeding, a description of each of the applications as well as a summary of the process established by the Commission for this proceeding.
- b. Section 4 details the legislative and regulatory framework governing wind power plants and transmission facilities.
- c. Section 5 addresses consultation.
- d. In Section 6, the Commission considers the AESO's NID application.
- e. The common issues associated with the Stirling power plant and AltaLink transmission facility applications are considered in Section 7.
- f. In Section 8, the Commission details its overall conclusions on the applications.

3 Introduction, description of the applications and procedural background

3.1 Introduction

5. In this proceeding, the Commission considers:

- (i) Stirling's facility applications for the project;
- (ii) The AESO's NID application for the project's connection to the Alberta Interconnected Electric System (AIES); and
- (iii) AltaLink's facility applications for the connection.¹

6. A number of landowners in the project area intervened in the proceeding and formed the Stirling Landowner Group (SL Group). The SL Group objected to the siting of project components and the preferred transmission line route. Specifics of the SL Group's objections are detailed in Section 7.1.3. However, in summary, the SL Group stated that the project would cause a number of unacceptable land use impacts and give rise to safety issues. It also expressed concern with Stirling's consultation as well as the adequacy of Stirling's environmental surveys regarding wildlife and wetlands. The SL Group argued that an alternate project substation location would minimize or reduce the effects of the project.

¹ The AESO and AltaLink applications were first registered in Proceeding 23196 on December 12 and 13, 2017, respectively, and were combined to be considered jointly in Proceeding 22546 on June 8, 2018.

3.2 Stirling's facility applications

7. Stirling filed applications under sections 11, 14, 15 and 18 of the *Hydro and Electric Energy Act*, seeking approval to construct, operate and to interconnect the project to the AIES in the Lethbridge area.

8. The original application was to construct 34 Senvion 3.4M140 wind turbines, each rated at 3.4-megawatts (MW), with an overall generation capacity of 115.6 MW. Stirling subsequently amended its application to reduce the number of turbine locations to 32 and construct a different turbine, reducing the project's nameplate capacity to 115.2 MW. The project would be sited on approximately 3,448 hectares of privately-owned agricultural land for which Stirling has option agreements. The project consists of the following components:

- 32 Senvion 3.6M140 wind turbine generators, each rated at 3.6 MW, with a hub height of 110 metres and a rotor diameter of 140 metres
- a 34.5-kilovolt (kV) underground collector system
- a new substation, to be designated as the Red Coat 967S Substation, to connect the project to the AIES. The substation would be located in Legal Subdivision 13 of Section 8, Township 7, Range 18, west of the Fourth Meridian and would contain the following major equipment:
 - one 138/35-kV step-up power transformer rated at 48/64/80-megavolt ampere
 - one 138-kV circuit breaker
 - one 35-kV switchgear building and a chain-link fence enclosing the substation site

9. The project area is located within the County of Warner No. 5 and Lethbridge County in southeastern Alberta, approximately 30 kilometres southeast of Lethbridge. The project's specific location is described in Table 1 and shown in Figure 1 below:

Table 1: Location of Stirling Wind Power Project²

Section	Township	Range	Meridian
8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 22, 23, 24, 27, 29, 34	7	18	W4M
3	8	18	W4M

² Exhibit 22546-X0001.01, Stirling Wind Project AUC Application 07APR2017, PDF page 22 to 23.

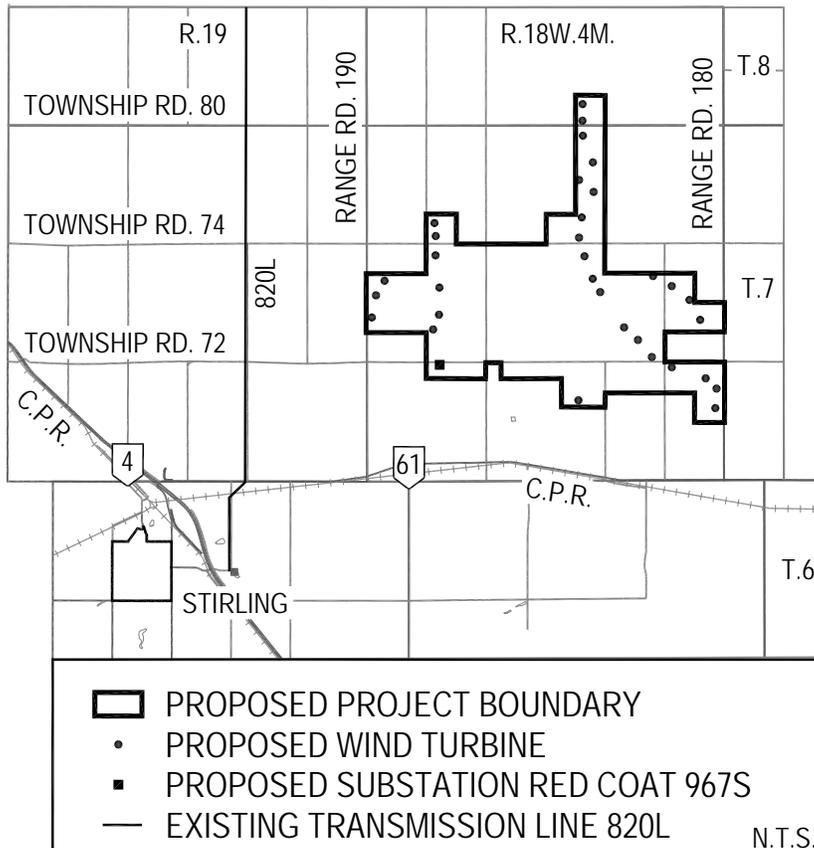


Figure 1: Project area and layout

10. Each wind turbine would include an external padmount transformer to increase the voltage generated by the turbine to 34.5 kV, and an underground electrical collector system would connect each turbine to the Red Coat 967S Substation. This collector system would consist of six circuits buried to a minimum depth of approximately one metre.

11. Turbine access roads would be required to access and maintain the wind turbines over the life of the project and an operations and maintenance building would be built to house spare parts, equipment and the facility's operation centre. A laydown area to stage the project equipment during construction would also be required. The operations and maintenance building and laydown area locations would be determined closer to construction.³

³ Transcript, Volume 1, page 131, line 11 to 19.

3.3 The AESO's NID application

12. The AESO filed the NID application with the Commission requesting approval of the need to provide system access to the project, pursuant to Section 34 of the *Electric Utilities Act*. The AESO evaluated seven options and selected the following proposed transmission development:

- addition of one 138-kV transmission line to connect the project to the existing 138-kV Transmission Line 820L using a T-tap configuration
- modification, alteration, addition or removal of equipment, including switchgear, and any operational, protection, control and telecommunication devices required to undertake the work as planned and to ensure proper integration with the transmission system

13. The AESO determined that the proposed transmission development would provide a reasonable opportunity for the market participant to exchange electric energy and ancillary services and was consistent with the AESO's long-term plans for the South Planning Region.

14. On October 29, 2018, the AESO received a request to change the in-service date of the proposed transmission development to December 20, 2019. The AESO approved this request and amended its NID application. The AESO confirmed that the change to the in-service date did not materially impact the results, conclusions or recommendations of the connection assessment.⁴

3.4 AltaLink's transmission facility applications

15. Pursuant to Section 35 of the *Electric Utilities Act*, the AESO directed AltaLink to submit facility applications to the Commission to meet the needs identified in the AESO's NID application. AltaLink filed applications pursuant to sections 14, 15, 18 and 21 of the *Hydro and Electric Energy Act* for approval to construct a new transmission line, designated as 820BL, from the existing Transmission Line 820L to the proposed Red Coat 967S Substation. AltaLink's solution included two routing options, both requiring alterations to existing Transmission Line 820L. AltaLink also applied to install underground fibre optic lines between the 820BL tap-in point with Transmission Line 820L and the Stirling 67S Substation, and between the Chin Coulee 9261R Radio Site and the Chin Chute 315S Substation.

3.5 Procedural background

16. The Commission issued notices for Stirling's original wind project facilities applications (Proceeding 22546) and for the AESO and AltaLink transmission applications (Proceeding 23196) in 2017. Statements of intent to participate were received in response.

17. All three applications were subsequently held in abeyance pending amendments to Stirling's applications, which were submitted in May 2018. Following receipt of Stirling's amended applications, the three applications were conjoined in Proceeding 22546 and the Commission issued a notice of application amendment for the Stirling applications and for the AESO NID and AltaLink facility applications on June 12, 2018. Notices were directly mailed to stakeholders identified by the applicants and advertised in the Lethbridge Sun Times, the

⁴ Exhibit 22546-X0144, LT AUC re revised NID 2018-10-31.

Lethbridge Shopper, Lethbridge Herald and Westwind Weekly News. An information session was held on July 5, 2018, in Lethbridge, Alberta.

18. In response to the notice of application amendment, the Commission received statements of intent to participate from Rod and Robin Conrad, Brad Cox and Lorraine Thomson-Cox, George and Margaret Stanko, and Calvin and Peggy Metzger. The Commission granted standing to all these parties, who later formed the SL Group. Mr. Cox and Ms. Thomson-Cox, subsequently withdrew their objections to the project.⁵ A statement of intent to participate and to join the SL Group was received from Joe and Whitney Buntyn late in the process. The Commission granted these individuals standing on January 17, 2019.⁶ A statement of intent to participate was also received from Solar Krafte Utilities Inc. However, for the reasons detailed in the Commission's letter of January 18, 2019, Solar Krafte Utilities Inc. was denied standing.⁷

19. The Commission ruled on a number of procedural motions prior to the hearing, including a request to withdraw the evidence filed by Mr. Cox and Ms. Thomson-Cox after they withdrew their objections to the project. The Commission denied that request on the basis that the subject evidence was relevant to the application, but noted that the submissions specific to those interveners (as distinct from those filed as part of the SL Group), were unsponsored evidence and that this would be considered in determining the appropriate weight to be afforded to these submissions.⁸ In this decision, the Commission has considered that the submissions specific to Mr. Cox and Ms. Thomson-Cox could not be tested at the hearing and has taken that into account when weighing that evidence.

20. A public hearing was held January 22, and January 23, 2019, in Lethbridge, Alberta, before Panel Chair Neil Jamieson, and Commission members Carolyn Hutniak and Joanne Phillips.

4 Legislative and regulatory framework

21. The Commission regulates the construction and operation of power plants and transmission facilities in Alberta.

22. The project proposed by Stirling is a "power plant" as that term is defined in Subsection 1(k) of the *Hydro and Electric Energy Act*. 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.

23. Three additional approvals from the Commission are required to build new transmission capacity in Alberta.⁹ First, approval of the need for expansion or enhancement to the AIES, pursuant to Section 34 of the *Electric Utilities Act*, is required. Second, a permit to construct and

⁵ Exhibit 22546-X0127, AUC ruling on standing on applications in Proceeding 22546.

⁶ Exhibit 22546-X0271, AUC ruling on request to withdraw evidence and motions filed by the SL Group.

⁷ Exhibit 22546-X0283, AUC ruling on standing of Solar Krafte Utilities Inc. on applications in Proceeding 22546.

⁸ Exhibit 22546-X0271, AUC ruling on request to withdraw evidence and motions filed by the SL Group in response.

⁹ Except in the case of critical transmission infrastructure.

a licence to operate a transmission facility, including a substation, pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, must be obtained. Finally, Section 18 of the *Hydro and Electric Energy Act* requires approval to connect the facility to the AIES.¹⁰

24. The applications before the Commission request approval to construct and operate a power plant, build and operate new transmission facilities and to connect the power plant to the AIES, pursuant to sections 11, 14, 15 and 18 of the *Hydro and Electric Energy Act* and Section 34 of the *Electric Utilities Act*.

25. When considering a NID application under Section 34 of the *Electric Utilities Act*, the Commission has three options. The Commission may approve or deny the NID, or it may refer the NID back to the AESO with suggestions or directions for changes or additions. Subsection 38(e) of the *Transmission Regulation* requires the Commission to consider the AESO's assessment of need to be correct, unless an interested person satisfies the Commission that the assessment is technically deficient, or that approval of the NID application would not be in the public interest.

26. Transmission facility applications are prepared by the transmission facility owner assigned by the AESO, which in this case is AltaLink. When considering an application for a transmission facility, the Commission must consider whether the proposed transmission facilities are in the public interest having regard for the social and economic effects of the transmission facilities and their effect on the environment.

27. When considering an application for a power plant and associated infrastructure, 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*.

28. Section 2 lists the purposes of the *Hydro and Electric Energy Act*, which include:

- (a) To provide for the economic, orderly and efficient development and operation, in the public interest, of the generation of electric energy in Alberta.
- (b) To secure the observance of safe and efficient practices in the public interest, in the generation of electric energy in Alberta.
- (c) To assist the government in controlling pollution and ensuring environment conservation in the development of hydro energy and in the generation, transmission and distribution of electric energy in Alberta...

[...]

29. 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 and associated infrastructure is in the public interest under Section 17 of the *Alberta Utilities Commission Act*.

¹⁰ Defined in Section 1(1)(o)(iii) of the *Hydro and Electric Energy Act*, RSA 2000, c H-16, "transmission line" includes substations.

30. The purposes of the *Electric Utilities Act* include the development of an efficient electric industry structure and the development of an electric generation sector guided by competitive market forces.¹¹

31. In Alberta, the legislature expressed its clear intention that electric generation is to be developed through the mechanism of a competitive, deregulated electric generation market. Section 3 of the *Hydro and Electric Energy Act* directs that the Commission shall not have regard to whether the proposed power plant "...is an economic source of electric energy in Alberta or to whether there is a need for the electric energy to be produced by such a facility in meeting the requirements for electric energy in Alberta or outside of Alberta." Accordingly, in considering a power plant application, the Commission does not take into account the need for or the cost of a proposed power plant project.

32. The Commission's public interest mandate is located within Section 17 of the *Alberta Utilities Commission Act*, which states:

Public interest

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 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.

33. In EUB Decision 2001-111,¹² the Commission's predecessor outlined the 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.

¹¹ *Electric Utilities Act*, SA 2003, c E-5.1, Section 5.

¹² EUB Decision 2001-111: EPCOR Generation Inc. and EPCOR Power Development Corporation 490-MW Coal-Fired Power Plant, Application No. 2001173, December 21, 2001, page 4.

34. The Commission remains of the view that the above approach is consistent with the purpose and intent of the relevant legislation and provides an effective framework for the assessment of whether a proposed project, including a wind energy project, is in the public interest.

35. When considering NID and facility applications, the Commission also reviews an applicant's compliance with the Commission's rules and whether the applicant has secured other necessary approvals.

36. Pursuant to its authority under Section 76(1) of the Alberta Utilities Commission Act, the Commission has established AUC Rule 007: Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments and AUC Rule 012: Noise Control. Rule 007 applies to applications for the construction and operation of power plants, substations and transmission lines governed by the Hydro and Electric Energy Act and establishes the informational and other requirements that must be met on such applications. Specifically, an applicant must provide technical and functional specifications, information on public consultation, environmental and land-use information including a noise impact assessment.

37. An applicant must likewise meet all applicable Rule 012 requirements and obtain all approvals required by other applicable provincial or federal legislation.

5 Consultation

5.1 Views of Stirling

38. Consultation on the project began in February 2016, with the assistance of Scott Land and Lease Ltd. The majority of the original land titles were pulled in November 2015, and additional land titles were pulled as the files for land option agreements were completed. The most recent searches were completed on February 10, 2017.¹³ A project-specific mailing list, which encompassed all landowners, occupants and residents within 2000 metres of the project area, was created. As the project boundary changed, stakeholders who were no longer in the notification area remained on the mailing list unless they requested to be removed.¹⁴

39. The first mail-out package was distributed in October 2016. It included project information, maps, an invitation to an open house and information on how to get involved. The open house was also advertised in the Lethbridge Sun Times, the Lethbridge Shopper, Lethbridge Herald and Prairie Post West newspapers, and was held at the Stirling/Lions Club Community Centre on Tuesday, October 25, 2016; 80 people attended. In December 2016, a second project package was sent out outlining changes to the project. A third project information package was distributed in February 2017.

40. For stakeholders within 800 metres of the project, three rounds of one-on-one consultation were conducted, through either face-to-face meetings, by e-mail, or by telephone. In total, consultation occurred with 106 stakeholders. All consultations were recorded and any

¹³ Exhibit 22546-X0024, Stirling IR1 Response Proceeding 22546 10MAY2017, PDF page 6.

¹⁴ Exhibit 22546-X0004.02, Attachment 3A - Participant Involvement Program with Appendix A-J, PDF page 4.

follow-up requests were documented and passed on to the appropriate group to provide a response to stakeholders.¹⁵

41. Stakeholders were engaged early to ensure that feedback received could be integrated into the project's design. The final turbine layout was designed, in part, to address concerns received during consultation with stakeholders.

42. In preparation for its amendment application to the Commission, a project information package was distributed in February 2018, and an additional round of consultation and notification was conducted in April 2018. Stakeholders were advised of the proposed changes to the project, including the change in turbine model, reduction in the number of turbines, and changes to access roads and collector lines.

43. Lethbridge County and the County of Warner No. 5 were first consulted in March and April 2017, respectively. The counties were provided notification of the updated layout in February 2018. Neither county had any questions or concerns. The Village of Stirling submitted a letter of support on December 12, 2018.

44. The Aboriginal Consultation Office was contacted and it advised that its process was not required. Consultation material was provided to Kanai Resources Inc. of the Blood Tribe. The Paul First Nation became a partner in the project in the summer of 2018.¹⁶

45. Stirling disputes the SL Group's consultation concerns. While not every concern raised by stakeholders could be addressed, Stirling asserted that the Commission's consultation requirements were met. Attempts were made to address the SL Group's concerns, including removing turbines at the group members' request. Alternate substation locations supported by the SL Group were also considered, and rationale was provided for the location selected.¹⁷

46. Stirling acknowledged that the SL Group agreed to withdraw its objection to the wind project in exchange for the removal and relocation of a number of turbines, and the promise that Stirling would not expand the project west or south and that this arrangement was enforced by the execution of a turbine removal agreement. However, Stirling disagreed with the SL Group's request that, should the Commission decide to approve the project, the turbine removal agreement be entrenched in the Commission's approval. Commitments made to landowners in negotiated private agreements are not typically conditions of approval and there are legal remedies pursuant to contract law if either party is not in compliance with the agreement. Further, entrenching such commitments in the approval would unduly prejudice the approval holder; if the agreement was dissolved or voided, the condition would still remain on the approval.¹⁸

5.2 Views of the AESO

47. The AESO directed AltaLink to assist it in conducting its participant involvement program, which occurred between April and November 2017. A need overview document was

¹⁵ Exhibit 22546-X0004.02, Attachment 3A - Participant Involvement Program with Appendix A-J, PDF page 4.

¹⁶ Transcript, Volume 1, page 98, line 6 to 8.

¹⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 17 to 18.

¹⁸ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 18.

distributed, which notified stakeholders of the need, the preferred option, general area of development and contact information. This document was posted on the AESO website, published in the AESO Stakeholder Newsletter, and included in the consultation material distributed by AltaLink. The material was provided to stakeholders within 800 metres of the proposed transmission line right-of-way and within 100 metres of the proposed fibre optic installation.

48. In October 2017, eight market participants determined to have an interest in the NID (as they may be affected under certain Category B system conditions following the project's connection) were notified.

49. One concern was expressed to AltaLink about future development in the area and whether Transmission Line 820L could connect additional generation following the connection of the Stirling project. The AESO responded that should the project be connected, there will be no more capacity on Transmission Line 820L for additional generation and that new projects would be offered the opportunity to connect to other existing transmission facilities.¹⁹

5.3 Views of AltaLink

50. AltaLink's participant involvement program started in April 2017. Two rounds of consultation were conducted which included notifying stakeholders, and direct consultation. Sixty two stakeholders located within 800 metres from transmission routes and 100 metres from fibre optic routes were notified. The stakeholder list was updated as new stakeholders were identified.

51. Nine stakeholders were directly consulted through face-to-face meetings or over the phone. These consultations were documented and follow-up actions were conducted where required. These sessions occurred in May 2017, and August 2017.

52. AltaLink's first information package was distributed on April 28, 2017, and contained information on the transmission line, detailed maps, the AESO's consultation material, and information on how to get involved. A second information package was distributed on August 8, 2017, for both the transmission line and fibre optic lines.

53. The participant involvement program provided notification of the transmission facilities and gave stakeholders an opportunity to ask questions, raise issues and provide input. The transmission line routing on the preferred route was moved from the south side of Township Road 72 to the north side, in part due to feedback received during consultation.²⁰

54. Agencies and industry were consulted, including the County of Warner No. 5, Lethbridge County, Alberta Transportation, Alberta Culture and Tourism and Alberta Environment and Parks (AEP). Approvals from Alberta Culture and Tourism were received on August 31, 2017, and September 14, 2017. No concerns were received from AEP or Alberta Transportation, the counties or industry. AltaLink indicated it would work with FortisAlberta to relocate the identified distribution line should the preferred route be approved.

¹⁹ Exhibit 22546-X0069, Appendix C- AESO PIP, PDF page 5.

²⁰ Exhibit 22546-X0100, AML Stirling Wind Project Connection – Application, PDF page 46.

55. Aboriginal consultation was not required for the transmission facilities as there are no Aboriginal-owned lands within 800 metres of the transmission facilities. No inquiries or concerns from Indigenous groups were expressed.²¹

5.4 Views of the SL Group

56. General concerns with Stirling's consultation process include the following:

- Stirling lied to interveners, telling them that its members were the only opposition to the project, and it bullied, harassed and intimidated landowners.²²
- The information provided by Stirling was not consistent.²³
- Stirling cancelled and refused group meetings and preferred to meet one-on-one.²⁴
- Stirling has driven a wedge between the SL Group and surrounding landowners such as the Hutterian Brethren Church of New York (New York Colony). Prior to the project, the SL Group members had a good relationship with the New York Colony, including crop sharing agreements; this relationship may have been negatively impacted.²⁵

57. The Stankos submitted that they were so stressed from dealing with Stirling that they needed to have their daughters intervene on their behalf.²⁶

58. The Conrads submitted that Stirling would not have discussions about the substation location. When the substation location was raised with Stirling, Stirling told them to talk with AltaLink and that its consultation would be starting soon. When the Conrads asked AltaLink about the substation location, they were told the location of the substation was up to Stirling.²⁷

59. The Conrads, Metzgers and Stankos signed turbine removal agreements with Stirling, which stated they would withdraw their objections to the wind farm application in exchange for the removal of a number of turbines. These agreements also stated that Stirling would not put additional turbines to the south and west of the proposed project area. The SL Group requested that the Commission entrench the agreements as a condition of approval so that they remain protected should the approval be transferred to another party.²⁸

60. Members of the SL Group have fulfilled their part of the turbine removal agreements by withdrawing their objections to the wind project. Refusing to entrench the agreements in the approvals only benefits Stirling. Further, if Stirling becomes bankrupt or transfers its approval to another company, the future successor may not want to be bound by the agreements. The

²¹ Exhibit 22546-X0100, AML Stirling Wind Project Connection – Application, PDF page 67.

²² Exhibit 22546-X0172, Master Submission of Stirling Landowner Group, PDF page 17.

²³ Exhibit 22546-X0174, Attachment B - Submission of Robin and Rod Conrad, PDF page 2.

²⁴ Exhibit 22546-X0172, Master Submission of Stirling Landowner Group, PDF page 17.

²⁵ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 56 to 57.

²⁶ Exhibit 22546-X0176, Attachment D - Submission of George and Marge Stanko, PDF page 4.

²⁷ Exhibit 22546-X0174, Attachment B - Submission of Robin and Rod Conrad, PDF page 1.

²⁸ Exhibit 22546-X0172, Master Submission of Stirling Landowner Group, PDF page 18.

members of the SL Group would have greater protection if the terms of the turbine removal agreements were made a condition of the approval.²⁹

5.5 Commission findings

61. Rule 007 requires that a participant involvement program must be conducted before a NID or facility application may be filed with the Commission. It is therefore a fundamental component of each of these application types. The applicant bears the responsibility of meeting the notification and consultation requirements of Rule 007.

62. In Decision 2011-436, the Commission made the following comments with respect to effective consultation under Rule 007:

... In the Commission's view, effective consultation achieves three purposes. First, it allows parties to understand the nature of a proposed project. Second, it allows the applicant and the intervener to identify areas of concern. Third, it provides a reasonable opportunity for the parties to engage in meaningful dialogue and discussion with the goal of eliminating or mitigating to an acceptable degree the affected parties concerns about the project. If done well, a consultation program will improve the application and help to resolve disputes between the applicant and affected parties outside of the context of the hearing room.³⁰

63. The Commission acknowledges that an effective consultation program may not resolve all landowner concerns. There may be situations where individual stakeholders might feel that the consultation effort, particularly as it pertained to their interests, was insufficient or superficial. The above noted views of the parties, particularly in relation to the Stirling facility applications, demonstrate that the perceptions of Stirling and the SL Group about the quality and effectiveness of Stirling's public consultation are quite different. The fact that the parties disagree however, is not necessarily determinative of whether the notice and consultation requirements of Rule 007 have been met.

64. As previously stated, in order to approve an application, the Commission must be satisfied that the fundamental objectives of consultation, and Rule 007 requirements, have been met. For the reasons that follow, the Commission is satisfied that they have been.

65. Generally speaking, the Commission considers that the applicants designed their participant involvement programs to ensure that all potentially directly and adversely affected persons and all relevant and interested stakeholders understood the project and transmission facilities, had a reasonable opportunity to voice concerns and to have those concerns addressed where feasible. This is consistent with the purpose of consultation, and Rule 007 requirements.

66. The Commission has considered the SL Group's more specific concerns with how Stirling conducted its consultation, including that members of the SL Group stated that they felt intimidated and bullied in the consultation process and were unhappy that landowners were not consulted as a group. Stirling disputed the SL Group's characterization of the consultation. As previously observed, such differences of opinion or perception are not uncommon. Nevertheless,

²⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 48.

³⁰ Decision 2011-436: AltaLink Management Ltd. and EPCOR Distribution & Transmission Inc. – Heartland Transmission Project, Proceeding 457, Application 1606609, November 1, 2011, PDF page 57, paragraph 283.

and without making any findings concerning the character of Stirling's consultation, it is worth reiterating the Commission's expectation, as expressed in Appendix 1 to Rule 007, that individuals conducting personal notification and consultation, have, among other things, sufficient training and experience in conducting public consultations including customer service, courtesy and respect. Further, the participant involvement program guidelines in Rule 007 state that the creation of landowner groups may be an efficient way to interact and discuss concerns. The Commission considers that group discussions may have been useful in this case, given the concerns with the process that were raised by the SL Group.

67. Notwithstanding the concerns expressed by the SL Group about the manner in which consultation was conducted by Stirling, the SL Group has not asserted a lack of knowledge about either the project or the proposed transmission facilities and on the evidence before it, the Commission is satisfied that the SL Group was aware of and had adequate opportunities to learn about both and to provide feedback from an early stage of the process. The Commission is similarly satisfied that the SL Group had adequate opportunities to identify areas of concern to the applicants and that reasonable efforts were made by the applicants to accommodate those concerns where feasible. For example, the Commission notes that AltaLink made adjustments to the routing of the transmission line and Stirling removed a number of turbines as a result of consultation with stakeholders.

68. Having regard to the purpose of consultation as described above, and for all of the above reasons, the Commission finds that the participant involvement programs of Stirling, the AESO and AltaLink met the regulatory requirements of Rule 007.

69. The Commission acknowledges the request of the SL Group to entrench the turbine removal agreement as a condition of the project's approval. However, doing so is neither appropriate nor necessary in the circumstances. The turbine removal agreement is a private contract between Stirling and certain individual members of the SL Group, over which the Commission has no authority or jurisdiction relative to its terms or its enforcement. Further, the Commission notes that any project amendments, transfer of ownership or expansion of the project would require an application before the Commission. Any issues regarding the siting of new facilities to the south and west of the project area may be addressed in those subsequent applications.

6 AESO NID Application

6.1 Views of the AESO

70. Stirling requested system access service to connect the project, in the Lethbridge/Stirling area, with an expected commercial operation date of December 31, 2019 (the Stirling request). The Stirling request included a new Rate Supply Transmission Service (STS) contract capacity of 113 MW and a new Rate Demand Transmission Service (DTS) contract capacity of 1 MW.

71. Under Section 29 of the *Electric Utilities Act*, the AESO must provide system access service on the transmission system in a manner that gives all market participants a reasonable opportunity to exchange electric energy and ancillary services. Pursuant to Section 34 of the *Electric Utilities Act*, the AESO determined that an expansion or enhancement of the

transmission system is required to respond to the Stirling request, thereby establishing the need for the NID application.

72. A number of options were considered to respond to the Stirling request and connect the project. However, the AESO's proposed solution is to add one 138-kV transmission line to connect the project to the existing 138-kV Transmission Line 820L via a T-tap configuration. This option is estimated to cost approximately \$10 million and the costs would be classified as participant-related.³¹

73. Six other alternatives were considered. The AESO's process for identifying and evaluating connection alternatives in response to a request for system access service is to:

- (a) Identify alternatives based on the request and the geographic location of the project;
- (b) Develop the conceptual scope for each alternative;
- (c) Eliminate alternatives based on comparatively greater scope or construction and access constraints; and
- (d) To perform a detailed evaluation of the remaining alternatives through engineering assessments, cost considerations and environmental assessments.³²

74. Radial connections to the Stirling 67S, Chin Chute 315S, Hillridge 139S and Picture Butte 120S substations were considered, as were in-and-out connections to transmission lines 820L and 941L (the MATL³³ line). These alternatives were ruled out due to increased transmission development and increased costs as they would require more or longer transmission lines, new switching stations and/or additional circuit breakers.

75. Information from the SL Group that the distance between the Red Coat 967S Substation and the MATL line was 2.9 kilometres and not 10 kilometres (as was indicated in the NID application) was considered but this correction did not materially impact the AESO's conclusions and recommendations.³⁴

76. In response to the specific submissions from the SL Group that the MATL line alternative would reduce the length of transmission lines needed and therefore reduce intrusions to wetlands,³⁵ the AESO explained that the MATL line alternative was initially ruled out due to increased transmission development and increased costs when compared to the proposed transmission development. More particularly, an interconnection with the MATL line would require: a new substation, with a minimum of three 240-kV circuit breakers; the relocation of all transmission equipment from the existing MATL 120S Substation to this new substation; the creation of an in-and-out connection between the MATL line and the new substation; and a new 240-kV transmission line connecting the Red Coat 967S Substation and the new substation.³⁶

³¹ Exhibit 22546-X0077.01, Stirling Wind Project Connection NID, PDF page 5 to 7.

³² Exhibit 22546-X0267, AESO Rebuttal Evidence with attachments, PDF page 2 to 3.

³³ MATL refers to the former owner of the transmission line, Montana-Alberta Tie Ltd. The current owner of the line is Enbridge Inc.

³⁴ Exhibit 22546-X0154, AESO-SLG-2018OCT27-001 and 002.

³⁵ Exhibit 22546-X0172, Master Submission of Stirling Landowner Group, PDF page 16.

³⁶ Exhibit 22546-X0267, AESO Rebuttal Evidence with attachments, PDF page 4.

The new substation and relocation of equipment from the MATL 120S Substation would be required because the MATL 120S Substation currently contains the equipment which measures the amount of energy going between the United States and Alberta as well as the phase shifter which controls the flow. This equipment would need to be relocated to measure and control the intertie flow.³⁷ This option also uses 240-kV equipment, which is larger and more expensive than equipment rated for 138-kV and has larger land impacts and a larger required right-of-way. In addition, the MATL alternative may include reclassification of the costs associated with that portion of the MATL line of interest, since the MATL line is a merchant transmission line, as well as additional regulatory review and commercial agreements which could impact the in-service date.³⁸ For all these reasons, the MATL line alternative was eliminated from consideration.

77. It is acknowledged that the AESO is required to assess environmental effects within a development area. However, because the NID application is combined with AltaLink's facility application, which includes that environmental assessment, the AESO relies on AltaLink's assessment.³⁹

6.2 Views of the SL Group

78. Concerned that the MATL alternative had been insufficiently considered and prematurely rejected by the AESO, the SL Group initially requested the Commission to direct the AESO to investigate whether the wind project could be connected to the MATL line. In making this request, the SL Group noted that the AESO did not conduct a study regarding the connection to the MATL line in its initial connection assessment because the AESO originally thought the MATL line was 10 kilometres, and not 2.9 kilometres, away from the Red Coat 967S Substation.⁴⁰ In the SL Group's submission, a connection to the MATL line would eliminate the wetland intrusion that the preferred and alternate routes would make when interconnecting to Transmission Line 820L.

79. Following its review of the additional information filed by the AESO over the course of the proceeding, the SL Group agreed that connection to the MATL line did not make sense.⁴¹

6.3 Commission findings

80. The SL Group initially challenged the adequacy of the AESO's consideration of connection alternatives for the project, more particularly the MATL line connection, which the SL Group considered would be more in line with the public interest.

81. The Commission finds that the AESO appropriately considered the MATL option when preparing the NID application. While detailed information about the transmission upgrades was not presented until the rebuttal evidence, the MATL connection was listed as an alternative that the AESO considered in its application. The Commission agrees with the AESO that a connection to the MATL line requires increased transmission developments and increased costs

³⁷ Transcript, Volume 1, page 30, line 3 to 9.

³⁸ Exhibit 22546-X0267, AESO Rebuttal Evidence with attachments, PDF page 4 and 5.

³⁹ Exhibit 22546-X0077.01, Stirling Wind Project Connection NID, PDF page 9.

⁴⁰ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 6.

⁴¹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 58.

and has more potential for land disturbance. Based on the record, the Commission is satisfied that the AESO exercised reasonable, professional judgment to rule out potential alternatives without requiring a full connection assessment.

82. Further and in any event, the Commission notes that following its consideration of all of the information provided by the AESO over the course of the proceeding, the SL Group acknowledged that the MATL alternative “does not appear to make sense.”⁴² No other challenges to the technical sufficiency of the AESO’s assessment have been advanced by any interested party and there are no outstanding arguments that approval of the AESO’s NID application would not be in the public interest. The AESO NID application is therefore no longer contested.

83. As noted in Section 4, Subsection 38(e) of the *Transmission Regulation* requires the Commission to consider the AESO’s assessment of need to be correct, unless an interested person satisfies the Commission that the assessment is technically deficient, or that approval of the NID application would not be in the public interest. Accordingly, consistent with Section 38(e) of the *Transmission Regulation*, the Commission finds the AESO’s assessment of the need to be correct. In Section 5, the Commission found that the AESO had satisfied the notice and consultation requirements of Rule 007, and the environmental impacts of the proposed transmission alternative identified in the AESO’s need application have been considered as part of the discussion concerning AltaLink’s facility application in Section 7.2 below. In view of all of the foregoing, the Commission approves the AESO’s NID application as filed.

7 Stirling and AltaLink facility applications - common issues

7.1 Project siting

7.1.1 Views of Stirling

84. The project, which consists of 32 wind turbines, the Red Coat 967S Substation and underground collector lines, is proposed to be located within the County of Warner No. 5 and Lethbridge County, approximately 30 kilometres southeast of Lethbridge. 98 per cent of the total land use within the project area is cultivated. The project is being developed in accordance with the South Saskatchewan Regional Plan, is not located in conservation areas or provincial recreation areas and avoids native grasslands. Stakeholder feedback was incorporated in determining the final turbine layout and only two residences remain within 800 metres of project infrastructure.⁴³

85. The location of the substation was chosen based on the slope of the land, landowner feedback, proximity to transmission, and other constraints such as environmental and noise setbacks.⁴⁴ No areas near the project are considered significant viewpoints or recreational areas. The location is cultivated and privately owned, with restricted public access.

86. Multiple alternative locations for the proposed substation were evaluated, including the location preferred by the SL Group, which is approximately one mile north of the applied-for

⁴² Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 58.

⁴³ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 6.

⁴⁴ Exhibit 22546-X0001.01, Stirling Wind Project AUC Application 07APR2017, PDF page 39.

location (“the alternative substation location”). The timing of these evaluations and the locations evaluated are as follows.

87. In May 2017, while Stirling was negotiating the turbine removal agreements with members of the SL Group, the alternative substation location was raised. Stirling did not begin an assessment of this location at that time because it was finalizing the turbine removal agreements with the landowners, which it understood would alleviate the SL Group’s concerns with the project as a whole.⁴⁵

88. After the turbine removal agreements were signed, the SL Group again raised concerns with the substation location.⁴⁶ In response to these concerns, Stirling completed a more in-depth evaluation of the following potential substation locations:

- Location 1 was 1.2 kilometres east of the proposed substation location. This location was ruled out as it was within 300 metres of a residence, and while there would be an eight per cent reduction in total collector line length, there would be an 18 per cent increase in transmission line length.
- Location 2 was 2.6 kilometres south of the proposed substation location, adjacent to a secondary highway. This option was eliminated as it was deemed to be more expensive, Stirling did not have land control for the substation site or for collector lines from this location and it is located near native prairie.
- Location 3 was 3.3 kilometres north of the proposed substation location. This option was disregarded due to increased costs, and because the transmission line from the substation to the interconnection point would require a 20-metre right-of-way which would fragment farming operations and would not parallel existing linear disturbances.
- Location 4, the alternative substation location (preferred by the SL Group), was located 1.6 kilometres north of the proposed substation location. Contrary to the SL Group’s assertion that this location was agreeable to the landowner;⁴⁷ Stirling was advised by the landowner, the New York Colony, that its farming operations would be disrupted if this location was chosen because it would be within the middle of its property. This information is recorded in Stirling’s updated consultation records and was one of the reasons this alternative was eliminated. In addition, the transmission line from the alternative substation location to the interconnection would require a 20-metre right-of-way which would not parallel existing linear disturbances and would further fragment farming operations.
- Location 5 was 5.5 kilometres west of the proposed substation location. While this location would reduce the transmission line length significantly, the total collector line length would increase by 58 per cent which would result in higher costs. Further, Stirling did not have the landowner’s consent.⁴⁸

⁴⁵ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 15.

⁴⁶ Exhibits 22546-X0050, SWP Turbine removal - substation question and 22546-X0051, SWP - Substation inquiry.

⁴⁷ Exhibit 22546-X0174, Attachment B - Submission of Robin and Rod Conrad, PDF page 1.

⁴⁸ Exhibit 22546-X0168, 22546 Stirling Intevenor IR1 28NOV2018, PDF page 10 to 12.

89. In November 2018, in response to information requests from the SL Group, Stirling took another look at the alternative substation location. However, the proposed location continued to be the preferred location⁴⁹ because:

- Stirling has land control for the site
- the location balances collector lines and transmission line length
- it is the least expensive option
- it minimizes impact to farming operations
- it follows an existing linear disturbance within the road allowance
- it does not infringe on environmental setbacks
- it is located 1.3 kilometres from the closest resident⁵⁰

90. The SL Group's concern that the substation potentially infringes on the setback from an unidentified wetland is acknowledged. However, Stirling is confident that the setback can be met and it has committed to abide by the mitigation measures recommended by AEP, should the setback be infringed.⁵¹ The SL Group's recommended condition to have detailed engineering and survey plans showing the specified lands for the substation is unnecessary as Stirling is committed to maintaining AEP's minimum wetland setbacks and to apply appropriate mitigation.⁵²

91. Regarding the SL Group's concerns with the permanent operation and maintenance building, and more specifically, that it would infringe on wetland setbacks if it was located adjacent to the Red Coat 957S Substation,⁵³ Stirling testified that the final location of the operation and maintenance building has not been determined and will not be finalized until after it has executed a turbine supply agreement with the turbine manufacturer. However, currently neither the operation and maintenance building nor the parking lot are expected to be associated with the substation; the substation site will contain only the components required for the substation.⁵⁴

92. Responding to the SL Group's concern that locating the substation beside a county road would increase the chance of vandalism and theft, Stirling stated that it does not expect the presence of the substation to result in an increase in crime because it would be located in a remote location with few residences in the vicinity. The experience of AltaLink supports this expectation. AltaLink owns the Stirling 67S Substation near the Village of Stirling and has reported no security incidents in the last five years.⁵⁵

⁴⁹ Exhibit 22546-X0277, Appendix C - Updated Consultation Records, PDF page 11.

⁵⁰ Exhibit 22546-X0168, 22546 Stirling Intevenor IR1 28NOV2018, PDF page 12 to 13.

⁵¹ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 7 to 8.

⁵² Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 8 to 9.

⁵³ Transcript, Volume 1, page 130, line 23, to page 131, line 2.

⁵⁴ Transcript, Volume 1, page 131, line 10, to page 132, line 24.

⁵⁵ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 10 to 11.

7.1.2 Views of AltaLink

93. AltaLink's application is submitted as directed by the AESO and in accordance with the AESO's functional specifications.⁵⁶ The application proposes a new 138-kV transmission line, with two potential routes from Stirling's proposed Red Coat 967S Substation to a tap point along existing Transmission Line 820L. The existing Transmission Line 820L will need to be altered to accommodate the tap.

94. In developing potential routing options, AltaLink first identified routes on a conceptual level and then refined those options to minimize overall impacts. The proposed transmission line would be built primarily on 138-kV wood monopole structures and primarily within developed road allowance, undeveloped road allowance or along quarter-section lines. Where the transmission line is located within a road allowance, it would be located approximately one metre inside of the road allowance boundary.⁵⁷

95. The preferred route, shown in Figure 2, follows the developed road allowance on the north side of Range Road 72 for approximately five kilometres, or approximately 99 per cent of the line length. The route has two residences within 800 metres of the line, has low potential for agricultural impacts, requires no tree clearing and has good access for construction and maintenance. This route would require the relocation of five kilometres of a FortisAlberta Inc. distribution line.⁵⁸ AltaLink's alternate route, also shown in Figure 2, proceeds north from the Red Coat 967S Substation for approximately one mile before heading west along a section line to the tap point.

⁵⁶ Exhibit 22546-X0097, AML Stirling Wind Project Connection - Appendix C AESO Direction Letters.

⁵⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 26.

⁵⁸ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 48.

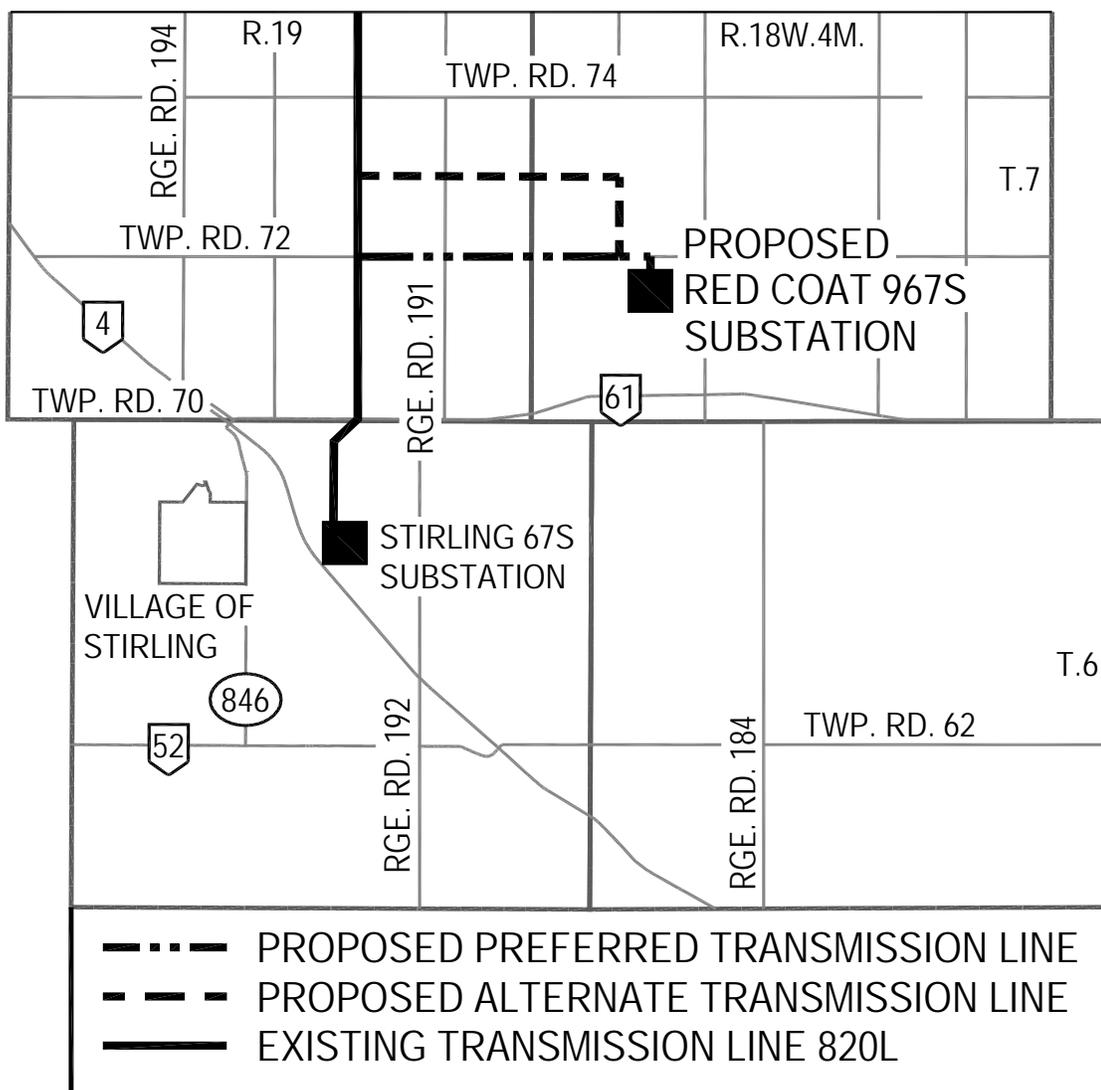


Figure 2: Transmission line routing

96. Both routes have low potential for residential and environmental impacts and do not require tree clearing.⁵⁹ However, the preferred route is two kilometres shorter than the alternate route, requires less right-of-way on private property, and has a lower overall cost. The preferred route also parallels an existing linear disturbance where the alternate route would introduce a new disturbance. The alternate route requires a 20-metre right-of-way on private property for approximately five kilometres, has higher potential for agricultural impacts and has one residence within 800 metres. Regardless of whether the majority of the land along the alternate transmission route is owned by the major lessor of the project (the New York Colony), Stirling and AltaLink are separate entities and AltaLink would require separate agreements in order to build the transmission line on the alternate route.⁶⁰

97. Underground fibre optic lines are also required as a result of the project. These fibre optic lines would be installed between the tap point for transmission lines 820L and 820BL and the Stirling 67S Substation and between the Chin Coulee 9261R Radio Site and the

⁵⁹ Exhibit 22546-X0100, AML Stirling Wind Project Connection – Application, PDF page 16.

⁶⁰ Exhibit 22546-X0327, AML Reply Submissions, PDF page 7.

Chin Chute 315S Substation. The fibre optic lines are required to allow for faster and more efficient communication between substations, and are located primarily within road allowances.

98. Temporary workspaces will be required during construction. More specifically, a laydown yard, office trailer and parking will all be required during construction, and would be located on land leased by Stirling, although the location has not been finalized. The preferred route will also require five metres of workspace along road allowance, and the alternate route will require 20 metres of permanent right-of-way on private property.⁶¹ No transmission structures would be placed on land owned by the SL Group; however, if there are concerns from any landowners with transmission structures on their property, AltaLink will work with the landowner to reduce or remove the workspace where possible. These workspaces should be included in the right-of-way described in the Commission's approval. The workspaces will be reclaimed and returned to landowners for their use after construction.

99. While the SL Group proposed an alternate location for the Red Coat 967S Substation, and interconnections with the MATL line, AltaLink did not consider these options. This is because the needs identified by the AESO in its functional specification document, required AltaLink to apply for transmission solutions to connect the proposed Red Coat 967S Substation to the existing Transmission Line 820L with a new 138-kV transmission line.⁶² The proposed transmission solutions meet that need.

7.1.3 Views of the SL Group

100. The Red Coat 967S Substation was sited poorly. The Commission should deny the application for the substation location and require Stirling to apply to site the substation one mile north of the currently proposed location.

101. Stirling ignored the New York Colony's offer to move the substation one mile north. Relocating the substation one mile north to the alternative substation location would reduce many concerns, including those related to property devaluation, lost development potential, fire hazards, weeds, crop disease, noise, dust, vandalism and theft.

102. Siting the substation beside a county road as proposed would increase the chance of theft and vandalism. While the substation would be fenced off, the Metzger's farm and equipment is located close to the proposed substation and would be more vulnerable due to the increased attraction. Moving the substation one mile north would increase security and reduce the risk to neighbours.⁶³

103. The alternative substation location would also shorten some collector lines and would make AltaLink's preferred and alternate routes the same length.⁶⁴ Further, if the centerline of the alternate route was moved from the section line to be located entirely on the New York Colony's land, then the New York Colony could use lands that have existing surface lease agreements for the wind project. Concerns that the alternate route would fragment farming operations should be

⁶¹ Transcript, Volume 1, page 44, line 20 to 23.

⁶² Exhibit 22546-X0092, AML Stirling Wind Project Connection - Appendix E AESO Functional Specific, PDF page 5.

⁶³ Exhibit 22546-X0175, Attachment C - Submission of Cal and Peggy Metzger, PDF page 3.

⁶⁴ Exhibit 22546-X0175, Attachment C - Submission of Cal and Peggy Metzger, PDF page 2.

dismissed given that the New York Colony is hosting a number of wind turbines, which fragment farming operations as well.⁶⁵

104. Although the alternate route would require 20 metres of right-of-way on private land, the majority of the land along the alternate transmission route is owned by the major lessor of the wind project, the New York Colony. It is common for surface leases for wind projects to allow for the placement of transmission lines. The alternate route requires less right-of-way if existing surface leases are used and does not require the FortisAlberta distribution line to be relocated. The onus is on AltaLink and Stirling to show that the alternate route requires a right-of-way and that the existing surface lease does not allow for the placement of the transmission line without additional compensation.⁶⁶

105. There are also fewer wetlands around the alternative substation location than Stirling's proposed location. The proposed substation location is surrounded by a group of modest-sized Class 2 and 3 wetlands, including one Class 3 wetland which infringes upon the AEP minimum setback.⁶⁷ One of the SL Group's expert witnesses, Mr. Cliff Wallis, noted the potential to infringe on that wetland and identified a feature directly east of the substation which also appeared to be a waterbody.⁶⁸

106. Concerning temporary workspaces, in their original applications, Stirling and AltaLink stated the laydown areas, parking lot, and office trailer would be located adjacent to the Red Coat 967S Substation. However, the location of these workspaces has since been moved and has not been finalized. The Commission should require Stirling and AltaLink to determine the location of the operation and maintenance yard and laydown yard before approval of the project and transmission facilities. The Commission should also require Stirling to complete and submit detailed engineering and survey plans for the proposed substation.⁶⁹

7.1.4 Commission findings

107. The majority of the members of the SL Group have entered into turbine removal agreements with Stirling. While the Buntyns did not sign a turbine removal agreement, their statement of intent to participate did not indicate any specific objections to the location and siting of the project's wind turbines. Accordingly, no issue has been taken in this proceeding with the location or siting of the wind turbines by the SL Group and there are no other intervening parties.

108. The siting issues in this proceeding principally relate to the proposed substation location. The SL Group acknowledged that its concerns with the siting of the proposed transmission line exist only as a consequence of the proposed substation location; if the substation is moved to the north as requested by the SL Group, the alternate route should be chosen.⁷⁰

109. For the reasons that follow, the Commission is satisfied that Stirling gave reasonable consideration to alternative locations for the substation, on its own initiative and in response to

⁶⁵ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 16 to 17.

⁶⁶ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 13.

⁶⁷ Exhibit 22546-X0177, Evidence of Cliff Wallis, December 2018, PDF page 21 to 22.

⁶⁸ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 29.

⁶⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 22.

⁷⁰ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 58.

concerns raised by the SL Group, and that it has offered reasonable explanations for why the other alternatives were rejected in favour of the proposed location.

110. Stirling considered five potential substation locations, including the alternative substation location preferred by the SL Group. That particular alternative location was considered on a number of occasions at different points in the project's development. Stirling has offered a reasonable explanation for why the proposed substation location is preferred over all of the other options, including the alternative substation location. With respect to that particular option, the Commission is satisfied that its rejection is reasonably supported having regard to: ambiguous evidence concerning the affected landowner's willingness to locate the substation on its land; the fragmentation of farming operations that would result; as well as the requirement for a 20-metre right-of-way for the interconnection, which would further fragment farming operations and would not parallel existing linear disturbances.

111. Having regard to the above and the whole of the record of this proceeding, the Commission is satisfied that Stirling conducted a satisfactory siting exercise intended to minimize multiple potential impacts arising from the placement of the substation taking into account a number of factors, including proximity to residences, cost, as well as environmental and agricultural impacts. For instance, the Commission notes that the nearest residence is located 1.3 kilometres away from the substation. Additionally, for the reasons discussed in sections 7.2 to 7.5, the Commission finds that there are reasonable mitigation measures in place to address any residual, potential adverse effects resulting from the substation's location, including those on land use and the environment.

112. With respect to AltaLink's transmission line, the Commission is satisfied that AltaLink conducted a satisfactory route planning exercise, taking into account established routing principles and factors including existing linear disturbances, agricultural impacts and cost. The Commission notes in particular that the preferred route follows existing linear disturbances for 99 per cent of its length and is shorter in length. The preferred route is also within a road allowance for the majority of its length while the alternate route fragments farm land. The Commission accordingly finds that AltaLink's route planning exercise resulted in the selection of the lowest-impact route: AltaLink's preferred route.

113. The Commission is further satisfied that AltaLink's application meets the need identified by the AESO (a transmission solution to connect the proposed Red Coat 967S Substation to the existing Transmission Line 820L with a new 138-kV transmission line), including all of the technical requirements specified in the AESO NID application and the functional specification document.⁷¹

114. Concerning Stirling's operation and maintenance yard and AltaLink's laydown yard, the Commission acknowledges the SL Group's request to have the location of these workspaces determined before approval of the project and transmissions facilities. However, neither of these workspaces require Commission approval, and the Commission has not been persuaded that their location is a critical consideration in whether the applications before the Commission are in the public interest.

⁷¹ Exhibit 22546-X0092, AML Stirling Wind Project Connection - Appendix E AESO Functional Specification.

7.2 Environmental impacts

115. Stirling retained McCallum Environmental Ltd. (McCallum Ltd.) to prepare an environmental evaluation report (the EE Report).⁷² Mr. Robert McCallum testified at the hearing on behalf of Stirling. Stirling also filed an AEP renewable energy referral report.⁷³

116. The EE Report described the environmental components present in the project area (including the substation), the project's potential effects on these components, mitigation measures to avoid or reduce the project's predicted adverse environmental effects and any monitoring proposed to evaluate the efficacy of those measures.⁷⁴ The EE Report was completed using desktop studies and field-based wildlife and wetland surveys conducted throughout 2016. The methodologies used were based on the requirements of AEP and standard practices for environmental assessments.⁷⁵ The EE Report found the greatest overall negative effects would be associated with impacts to birds, bats, wildlife species-at-risk and barriers to wildlife movement. The EE Report found effects to groundwater quality, soils, wetlands, native vegetation, surface water quality and amphibians to be neutral. The EE Report found effects to air quality to be positive due to the lack of emissions associated with the project during operation, and the offset of equivalent emissions that would have occurred in the absence of the project.⁷⁶

117. The EE Report predicted that the magnitude of the project's effects on wildlife habitat, watercourses, wetlands, and breeding bird habitat would be insignificant⁷⁷ and the magnitude of the residual impacts on birds and bats would be insignificant and low, respectively. It concluded that the accuracy of these predictions would be determined through post-construction bird and bat mortality-monitoring results and reporting.⁷⁸

118. AltaLink retained CH2M HILL Energy Canada Ltd. (CH2M Ltd.) to prepare a separate EE Report (Transmission EE Report) for the proposed transmission line and a draft environmental specifications and requirements document that itemized mitigation measures to eliminate or reduce the potential adverse effects of the transmission facilities.⁷⁹ The Transmission EE Report was completed using desktop studies and field-based wildlife, wetland and vegetation surveys conducted in the spring and summer of 2017. The Transmission EE Report predicted that, with implementation of the proposed mitigation measures, the potential adverse residual effects for all the environmental components are "not significant."⁸⁰

119. The Transmission EE Report found that neither the preferred or alternate routes crossed any environmentally significant areas (ESAs), native grassland, or watercourses. Both routes had no observed rare-plant species or ecological communities, raptor nests or sensitive wildlife species within one kilometre or sensitive amphibian species in open-water

⁷² Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation.

⁷³ Exhibit 22546-X0007.01, Attachment 5 - Alberta Environment and Parks Referral Report.

⁷⁴ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation.

⁷⁵ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 5.

⁷⁶ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 154, and 193 to 195.

⁷⁷ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 69, 72, 76 and 129.

⁷⁸ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 129, 143 and 152.

⁷⁹ Exhibit 22546-X0085, AML Stirling Wind Project Connection - Appendix L Environmental Evaluation.

⁸⁰ Exhibit 22546-X0085, AML Stirling Wind Project Connection - Appendix L Environmental Evaluation, PDF page 23 to 28.

wetlands within 100 metres.⁸¹ The reports stated the preferred route crossed two wetlands for a total length of 0.2 kilometres while the alternate route crossed one wetland for a total length of 0.02 kilometres.⁸² CH2M Ltd. concluded that, while both routes are environmentally satisfactory with implementation of the mitigation measures itemized in the environmental specifications and requirements document, the preferred route is slightly favoured from an environmental perspective since it would have a smaller total footprint and would parallel existing linear disturbances for 99 per cent of its length compared to 7 per cent for the alternate route.⁸³

120. The SL Group retained Mr. Cliff Wallis, a professional biologist with Cottonwood Consultants Ltd., and Mr. Ken Orich, a former Government of Alberta forest officer and current director of the Lethbridge Naturalists Society,⁸⁴ to file evidence and testify on its behalf on environmental matters. Mr. Wallis filed a report discussing the project's environmental impacts and potential mitigations.⁸⁵ Mr. Orich filed a report that describes the results of bird activity surveys that he conducted in the fall of 2018, and compares his results to those of the project's fall 2016 bird migration surveys.⁸⁶

7.2.1 Siting, surveys and general environmental effects

7.2.1.1 Views of Stirling

121. The majority of the project area consists of privately owned cultivated land (98.4 per cent).⁸⁷ There are approximately 427 hectares of marsh and open water wetlands, and a large number of ephemeral water bodies throughout the project area.⁸⁸ Wetland boundaries and distances from project components were delineated using desktop data supplemented by three field visits.⁸⁹ The turbines will not encroach upon AEP's wetland setbacks for the project.⁹⁰

122. The project is over five kilometres from any ESA,⁹¹ there are no mapped or permanent watercourses within the project area and AEP will be notified of all applicable watercourse crossings.⁹² The SL Group raised concerns about the presence of three named lakes and ESAs near the project area. However, the project satisfies AEP's 1,000-metre setback from a named lake and the SL Group did not provide any specific data to support its conclusion that birds originating from these ESA water bodies move into and through the project area.⁹³

⁸¹ Exhibit 22546-X0085, AML Stirling Wind Project Connection - Appendix L Environmental Evaluation, PDF page 15 to 21.

⁸² Exhibit 22546-X0085, AML Stirling Wind Project Connection - Appendix L Environmental Evaluation, PDF page 16.

⁸³ Exhibit 22546-X0085, AML Stirling Wind Project Connection - Appendix L Environmental Evaluation, PDF page 29.

⁸⁴ Transcript, Volume 2, page 289, line 1 to 13.

⁸⁵ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis.

⁸⁶ Exhibit 22546-X0179, Attachment G - Expert Report of Ken Orich -Stirling WP Area Birds.

⁸⁷ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 68.

⁸⁸ Ephemeral water bodies are not considered wetlands under the Alberta Wetland Classification System: Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 73 to 74.

⁸⁹ Exhibit 22546-X0168, 22546 Stirling Intevenor IR1 28NOV2018, PDF page 33.

⁹⁰ Transcript, Volume 1, page 100, line 17 to 18.

⁹¹ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 14.

⁹² Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 70 to 71.

⁹³ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 14.

123. Wildlife surveys were conducted in 2016, in accordance with the 2011 *Wildlife Guidelines for Alberta Wind Energy Projects* and the Government of Alberta's *Sensitive Species Inventory Guidelines*. Survey methodologies were based on feedback received from AEP during project-specific consultation and were approved by AEP.⁹⁴ In some cases, for example, the 2016 migratory bird surveys, Stirling exceeded AEP's minimum requirements because additional rounds of surveys were conducted.⁹⁵ Survey methodologies also met the Canadian Wildlife Service's recommended methods for bird point-count surveys.⁹⁶ A micro-siting of infrastructure survey was also conducted to ensure the proposed turbines, access roads, collector lines, and substation complied with AEP's minimum setback requirements for wildlife features and wetlands, and, in some instances, infrastructure was relocated to comply with setbacks. Amphibian surveys were not requested by AEP in 2016, because at that time the project was not planning to construct within 100 metres of any potential amphibian-breeding-pond habitat.⁹⁷

124. As part of its consultation with AEP, Stirling agreed to a 115-metre setback for turbines and a 45-metre setback for other types of infrastructure, such as roads and collector lines, from Class 2 temporary wetlands, and a 170-metre setback for turbines and a 100-metre setback for other types of infrastructure from Class 3, Class 4, and Class 5 wetlands.⁹⁸

125. AEP issued a renewable energy referral report in 2017, which concluded that the project posed an overall low risk to wildlife and wildlife habitat.⁹⁹ AEP noted that the project has committed to maintain current raptor nest and other wildlife surveys through project construction, and to consult and work with AEP if new wildlife features or issues are identified.¹⁰⁰ Following changes to the project layout, filed with the Commission on May 14, 2018, AEP confirmed that its assessment of the project's risk to wildlife had not changed.¹⁰¹

126. Updates to the project layout, a review of additional aerial photos, and a more conservative reclassification by McCallum Ltd. of some of the wetlands resulted in the encroachment of several of the project's collector lines and/or access roads into AEP's 100-metre setback for Class 3 and higher wetlands. These encroachments affected fourteen Class 3 wetlands, two Class 4 wetlands, and one Class 5 wetland, with the reduced setbacks

⁹⁴ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 33; Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 9 and 10; Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 7 to 8; Exhibit 22546-X0166, Attachment SL GROUP-IR1-031 AEP Update Aug 2016 to Nov 2018, PDF page 2 to 3; Transcript Volume 1, page 141, line 10 to 25, and page 142, line 1 to 11.

⁹⁵ Transcript, Volume 1, page 200, line 15, to page 201, line 3.

⁹⁶ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 10.

⁹⁷ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 32 and 47.

⁹⁸ Exhibit 22546-X0278, Appendix B - Expert Report of Robert McCallum - Response to evidence provided by Cliff Wallis, PDF pages 8 and 9.

⁹⁹ Exhibit 22546-X0007.01, Attachment 5 - AEP Referral Report, PDF page 3.

¹⁰⁰ Exhibit 22546-X0007.01, Attachment 5 - AEP Referral Report, PDF page 6 to 7.

¹⁰¹ Exhibit 22546-X0007.01, Attachment 5 - AEP Referral Report, PDF page 15.

ranging from 15 metres to 75 metres.¹⁰² A few of these encroachments were the result of efforts to satisfy landowner requests and trying to make use of existing access roads.¹⁰³

127. Stirling and McCallum Ltd. proposed several mitigations to reduce the project's indirect effects on wetlands and the wildlife that may use them as habitat, including additional field work and studies, restricted construction activities and times, and the presence of environmental monitors on site.¹⁰⁴ Directional drilling would also be used to mitigate both direct and indirect impacts.¹⁰⁵

128. In late 2018, and early 2019, McCallum Ltd. submitted information to AEP describing updates to the project layout and proposed mitigation to reduce effects on wetlands and the wildlife using them as habitat.¹⁰⁶ AEP confirmed that given Stirling's commitments to implement additional wetland and amphibian mitigations, their assessment of the project's risk had not changed.¹⁰⁷

129. Stirling has committed to conducting pre-construction amphibian surveys in 2019, in and around all Class 3, and higher, wetlands that are located within 100 metres of the project infrastructure.¹⁰⁸ Trenching will be used to install collector lines only where amphibian surveys do not show sensitive amphibian species present.¹⁰⁹ Directional drilling techniques would be used where collector lines directly intersect wetland boundaries.¹¹⁰ Additionally, Stirling would consult with AEP if additional mitigation was required to protect amphibians.¹¹¹

130. In response to the SL Group's challenges to the sufficiency and accuracy of the project's bird surveys, McCallum Ltd. and Stirling responded that Mr. Orich's bird survey program used non-standardized search methods designed to count as many birds as possible, whereas the project's bird migration surveys were designed to measure birds in flight using AEP-approved, standardized methods for wind projects that enable regulatory agencies to compare the risks presented by different projects. Since there were significant differences between the survey methodologies, their results cannot be reliably compared and the accuracy of the project's bird surveys should not be questioned just because Mr. Orich obtained different results.¹¹² Further, McCallum Ltd. responded to the SL Group's evidence that there were missing bird nests by conducting an additional raptor nest survey of the quarter section where the SL Group indicated that nests were present in December 2018, but did not find signs of a raptor nest.¹¹³

¹⁰² Exhibit 22546-X0276, Appendix E - AEP Correspondence, PDF page 6 to 17; Transcript, Volume 1, page 145, line 18, to page 146, line 22, and page 151, line 6, to page 152, line 4.

¹⁰³ Transcript, Volume 1, page 134, line 9, to page 135, line 8; Transcript, Volume 1, page 137, line 1 to 3.

¹⁰⁴ Exhibit 22546-X0276, Appendix E - AEP Correspondence, PDF page 7 to 19, and PDF page 90.

¹⁰⁵ Exhibit 22546-X0166, Attachment SL GROUP-IR1-031 AEP Update Aug 2016 to Nov 2018, PDF page 15 to 16.

¹⁰⁶ Exhibit 22546-X0166, Attachment SL GROUP-IR1-031 AEP Update Aug 2016 to Nov 2018, PDF page 15 to 39.

¹⁰⁷ Exhibit 22546-X0276, Appendix E - AEP Correspondence, PDF page 88 to 90.

¹⁰⁸ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 7 to 9.

¹⁰⁹ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 14.

¹¹⁰ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 11.

¹¹¹ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, 2019, PDF page 9.

¹¹² Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 8.

¹¹³ Exhibit 22546-X0275, Appendix A - Expert Report of Robert McCallum - Response to evidence provided by Ken Orich, PDF pages 4 and 10.

McCallum Ltd. submitted that while some of the missed nests may be used by some smaller raptor species, all project infrastructure is well outside AEP's 100-metre raptor nest setback.¹¹⁴

131. Stirling responded to the SL Group's request for more comprehensive wildlife studies, stating that the breeding bird survey areas covered 24.6 per cent of the project area and included 71 Class 3, nine Class 4, and three Class 5 wetlands.¹¹⁵ More comprehensive wildlife field-survey coverage is not feasible given the extent of wind project boundaries and the fact that breeding-bird surveys are typically done prior to the development of the project layout.¹¹⁶ Stirling committed to assess the bird use of Class 3 and higher wetlands where AEP's 100-metre setback is being encroached upon as part of its amphibian surveys.¹¹⁷

132. In response to the SL Group's request for nocturnal surveys and radar studies, Stirling and McCallum Ltd. stated that any bird species identified during nocturnal surveys would be the same as those identified during diurnal surveys and that there is no correlation between pre-construction nocturnal bird passage rates and post-construction fatality rates.¹¹⁸ McCallum Ltd. submitted that the collision risk to nocturnal birds is not as significant as Mr. Wallis contends citing a nocturnal bird movement and collision study in the Netherlands that concluded that collision risk for nocturnal migrants and local birds flying at night was just 0.01 per cent and 0.16 per cent, respectively.¹¹⁹ McCallum Ltd. submitted that the Canadian Wildlife Service Atlantic Canada radar study requirements cited by Mr. Wallis are more applicable to coastal wind projects that characterize the Atlantic Canada region than they are applicable to inland wind projects that characterize the Alberta region.¹²⁰ A condition requiring radar studies or monitoring is not warranted at this time because the effectiveness of radar technology has not been substantiated.¹²¹

7.2.1.2 Views of AltaLink

133. AltaLink considered the environmental effects of the NID application, on behalf of the AESO, in its facility application. AltaLink procured the Transmission EE Report and an environmental specifications and requirements document itemizing mitigation measures designed to ensure that the construction of the transmission facilities is carried out in an environmentally responsible manner. AltaLink would require its contractors to prepare and submit a construction and environmental management plan that is consistent with the environmental specifications and requirements document prior to construction.

¹¹⁴ Transcript, Volume 1, page 156, line 17 to 25.

¹¹⁵ Exhibit 22546-X0278, Appendix B - Expert Report of Robert McCallum - Response to evidence provided by Cliff Wallis, PDF pages 4 and 11.

¹¹⁶ Exhibit 22546-X0278, Appendix B - Expert Report of Robert McCallum - Response to evidence provided by Cliff Wallis, PDF page 11.

¹¹⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 16 to 17.

¹¹⁸ Exhibit 22546-X0278, Appendix B - Expert Report of Robert McCallum - Response to evidence provided by Cliff Wallis, PDF page 13.

¹¹⁹ Exhibit 22546-X0278, Appendix B - Expert Report of Robert McCallum - Response to evidence provided by Cliff Wallis, PDF page 12; Transcript, Volume 1, page 178, line 7 to 13 and page 216, line 12 to 16.

¹²⁰ Transcript, Volume 1, page 163, line 16, to page 166, line 2.

¹²¹ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 11 to 12.

134. Wetland delineation work was conducted along the transmission line routes. There are no wetlands in the proposed transmission line right-of-way.¹²² AltaLink added in reply that its environmental assessment of the transmission line routes included a 10-metre buffer on either side of the centre line which captured wetlands within temporary workspaces.¹²³

7.2.1.3 Views of the SL Group

135. A number of concerns exist with the project's potential effects on wetlands, encroachments on AEP setbacks, and reclamation. AEP's role in the survey process and the adequacy of the AUC and AEP's joint assessment process are also of concern.¹²⁴

136. Mr. Wallis identified a wetland from a 2012 Google Earth image between turbines 27 and 28 intersected by a proposed collector line which may not have been originally identified by McCallum Ltd. in its desktop evaluation or wetland field work.¹²⁵ A number of wetlands are located around the substation site and along the preferred transmission route that were identified by AltaLink.¹²⁶

137. Mr. Wallis also raised concerns about bird and amphibian species-at-risk using wetlands in and near the project area as habitat and the lack of wildlife surveys completed to date around these wetlands.¹²⁷ Mr. Wallis suggested that the Commission should require Stirling to conduct species-at-risk surveys around specific wetlands where the proposed access roads encroach upon AEP's minimum wetland setbacks.¹²⁸ Mr. Wallis also recommended the condition that Stirling not be permitted to relax the proposed reduced wetland setbacks any further than what AEP has accepted.¹²⁹

138. Mr. Wallis discussed the importance of Class 1 ephemeral water bodies and Class 2 temporary wetlands in the project study area as habitat for the great plains toad and plains spadefoot and noted that project infrastructure would be located within 100 metres of several such water bodies.¹³⁰

139. Mr. Wallis and Mr. Orich raised concerns about the presence of three named lakes and ESAs near the project area: the Chin Coulee ESA, Stirling Lake ESA, and Etzikom Coulee ESA, which provide habitat for waterbirds that move from these water bodies into and through the project area.¹³¹ Mr. Orich submitted that Stirling Lake is an important resting, feeding and staging area for waterfowl and shorebirds during the spring and fall, contains a Franklin's gull

¹²² Transcript, Volume 1, page 64, line 14, to page 65, line 12, and page 65, line 18, to page 66, line 4.

¹²³ Exhibit 22546-X0327, AML Reply Submissions, PDF page 6.

¹²⁴ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF pages 28, 38 and 39; Exhibit 22546-X0183, October 26, 2018 letter from the SL GROUP to AEP, PDF page 23.

¹²⁵ Exhibit 22546-X0278, Appendix B - Expert Report of Robert McCallum - Response to evidence provided by Cliff Wallis, PDF page 8; Transcript, Volume 1, page 147, line 1 to 11.

¹²⁶ Exhibit 22546-X0304, EXHIBIT 304 - STIRLING WIND POWER WETLANDS ON PROPOSED TRANSMISSION LINE MAP PROVIDED BY STIRLING.

¹²⁷ Transcript, Volume 2, page 292, line 17 to 21.

¹²⁸ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 30 to 31.

¹²⁹ Transcript, Volume 2, page 304, line 5 to 12.

¹³⁰ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 15.

¹³¹ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 7; Transcript, Volume 2, page 293, line 9 to 22; Exhibit 22546-X0172.

nesting colony on the south side of the lake and is used by thousands of snow geese and hundreds of tundra swans.¹³² Mr. Orich submitted that thousands of snow geese move from Stirling Lake into the project area under favourable food, water and weather conditions.¹³³ At the hearing, Mr. Wallis testified that the proximity of the ESAs to the project area was not problematic if the correct mitigation measures are applied.¹³⁴

140. Mr. Orich and Mr. Wallis submitted that the 2016 bird surveys conducted for the project's EE Report were inaccurate because surveyors chose survey locations out of sight of particular open water wetland areas and bird surveys were conducted outside of peak activity periods.¹³⁵ Mr. Orich conducted his own bird migration surveys in the project area in the fall of 2018, and submitted that he observed a greater total number of bird species, individual birds, and average daily bird activity than described in McCallum Ltd.'s EE Report.¹³⁶

141. Mr. Wallis submitted that the project's survey coverage and amount of data collected was insufficient to adequately assess the use of wetlands in the project area by waterbirds and bird species-at-risk, and recommended as a condition of approval that additional breeding-bird surveys be conducted around wetlands located within 100 metres of the project infrastructure.¹³⁷ The SL Group requested that the Commission require Stirling to conduct more comprehensive wildlife surveys within the project area.¹³⁸

142. The SL Group criticized the scope and accuracy of the project's raptor nest surveys, noting that raptor nests in the project area were missed or the species occupying the nests were unidentified.¹³⁹ Mr. Orich detected the nest of an unknown raptor species in a clump of trees located west of turbine 42¹⁴⁰ which the SL Group speculated could be a ferruginous hawk nest.¹⁴¹ Mr. Orich also identified 17 nests, including several potential raptor nests, in a shelterbelt west of turbines 25 and 26.¹⁴² McCallum Ltd. responded by inspecting the shelterbelt and identified 11 nests.¹⁴³ The SL Group requested that the Commission require Stirling to conduct detailed raptor nest surveys in 2019, and deny any turbine locations that infringe upon AEP's setbacks from species-at-risk nests, including turbines 25, 26, and 42.¹⁴⁴

143. Mr. Wallis raised concerns about the risk of passerine, species-at-risk, and migratory-bird collisions and fatalities during operation due to the height of the proposed turbines.¹⁴⁵ He submitted that bird fatalities at Canadian wind energy facilities are dominated by passerines, and

¹³² Exhibit 22546-X0179, Attachment G - Expert Report of Ken Orich -Stirling WP Area Birds, PDF page 68.

¹³³ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 7; Transcript, Volume 2, page 324, line 22 to page 325, line 25.

¹³⁴ Transcript, Volume 2, page 332, line 7 to 12.

¹³⁵ Transcript, Volume 2, page 333, line 17 to page 334, line 5.

¹³⁶ Exhibit 22546-X0179, Attachment G - Expert Report of Ken Orich -Stirling WP Area Birds, PDF pages 3, and 70 to 71.

¹³⁷ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 18 to 21.

¹³⁸ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 38.

¹³⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 41 to 42.

¹⁴⁰ Exhibit 22546-X0179, Attachment G - Expert Report of Ken Orich -Stirling WP Area Birds, PDF page 66.

¹⁴¹ Exhibit 22546-X0183, Attachment K - Letter to AER, PDF page 10.

¹⁴² Exhibit 22546-X0179, Attachment G - Expert Report of Ken Orich -Stirling WP Area Birds, PDF page 14; Exhibit 22546-X0183, Attachment K - Letter to AER, PDF page 11.

¹⁴³ Transcript, Volume 1, page 156, line 2 to 15.

¹⁴⁴ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 42.

¹⁴⁵ Transcript, Volume 2, page 293, line 6 to 8, and page 308, line 8 to 13.

that fatalities of some nocturnal passerine species-at-risk have been detected at wind facilities. Mr. Wallis recommended that nocturnal bird radar surveys/studies be conducted because they could provide better information on passerine and waterbird use of the project area during the night, which can be used to more effectively site turbines and identify operational mitigation for bird collisions.¹⁴⁶ Mr. Wallis and the SL Group submitted documents discussing how weather radar systems measuring atmospheric conditions such as air temperature, air pressure, and precipitation can be used to predict the timing, intensity and location of nocturnal bird migration events.¹⁴⁷ Mr. Wallis noted that the Canadian Wildlife Service is now recommending at least two years of radar and acoustical monitoring studies for turbines taller than 150 metres in Atlantic Canada because turbines at this height are within the nocturnal flight corridor of migrating passerines, and the project's proposed maximum height is 180 metres.¹⁴⁸

144. The mitigations in the AEP renewable energy referral report, such as alteration to cut-in speed, and turbine shutdown during migration nights should be made conditions of approval and these mitigations should be extended to adverse weather events as well.

7.2.1.4 Commission findings

145. In making its public interest determination on the environmental effects of the proposed facilities, the Commission has considered the evidence filed by Stirling, AltaLink, the SL Group and also AEP's renewable energy referral report and related correspondence.

146. Concerns expressed by the SL Group about the role of the AEP in the survey process and the weight afforded to the AEP's renewable energy referral report are acknowledged. However, the Commission wishes to emphasize that the AEP referral report is only one piece of evidence considered by the Commission in its determination of the environmental effects of a proposed wind energy project, and whether those effects can be reasonably mitigated. The test that the Commission must apply is not whether AEP has provided a renewable energy referral report, but whether weight of evidence supports that each of the proposed facilities is in the public interest, having regard to its environmental effects.

147. It should also be observed that the referral report provided by AEP is a single step in a long, collaborative process guided by AEP and does not end as of the issuance of the AEP renewable energy referral report. AEP has an ongoing oversight role for the project in the construction and operation phases, as well as oversight over reclamation activities at the end of the project's operational life.

148. Turning to the potential environmental effects associated with the siting of the project and proposed transmission line, while the Commission takes into account the presence of ESAs amongst other factors, the Commission considers that the location of ESAs is less useful in determining effects than other information, such as the type of vegetation cover, and targeted field surveys that identify the presence and quality of wildlife habitat and the presence of species-at-risk which may be using that habitat. The Commission is mindful that ESAs are

¹⁴⁶ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 31 to 32; Transcript, Volume 2, page 307, line 22 to 24, and page 337, line 10 to 17.

¹⁴⁷ Exhibit 22546-X0314, Weather Radar Predicts Nighttime Bird Migrations, September 13, 2018, by Walter Beckwith, 7 pages.

¹⁴⁸ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 32 to 33.

intended to be used as a planning tool and are not, in and of themselves, intended to restrict development. The Commission also notes that Mr. Wallis did not take issue with the proximity of the ESAs if appropriate mitigation measures were to be applied.

149. Mr. Wallis likewise testified that environmental considerations of the transmission line are less significant than other factors in route selection when proper mitigation is applied.¹⁴⁹

150. Overall, the Commission is satisfied that the siting of nearly all of the proposed facilities on cultivated lands and other disturbed areas, and not on native vegetation or wetlands, will reduce the potential for adverse effects on wildlife and wildlife habitat. Further, with diligent application of the applicants' mitigation measures, construction and post-construction monitoring, implementation of additional mitigation where warranted, and implementation of the Commission's conditions of approval, the potential adverse environmental effects from the siting, construction and operation of the proposed facilities can be sufficiently mitigated.

151. With respect to wetlands in particular, the Commission finds the siting of project infrastructure on cultivated lands, and not on wetlands, significantly mitigates the project's potential environmental effects on such features. Further, AEP's correspondence indicates that the three intersections of collector lines with wetlands, and the encroachments of several of the project's access roads and collector lines on AEP's minimum wetland setbacks, are acceptable to AEP, given the project's proposed alternative mitigation and overall avoidance of wetlands. The Commission has taken AEP's perspective into account as part of its overall consideration of whether the proposed setbacks from wetlands in the project area are reasonable, in light of the other evidence submitted in respect of the project's effects on wetlands and the mitigation measures proposed by Stirling.

152. Concerning the sufficiency of the surveys conducted, having regard for all of the evidence, Commission is satisfied that, while Stirling's pre-construction wildlife surveys conducted for the project did not cover every part of the project area, the survey approach adopted was reasonable in the circumstances given that the surveys were developed in consultation with AEP and follow both AEP and Canadian Wildlife Service methodologies. The Commission likewise finds AltaLink's surveys to be adequate as AltaLink conducted a desktop review, verified with field surveys along the transmission route, and included a 10-metre buffer on either side of the centre line to account for temporary workspaces.

153. The Commission agrees with Stirling that the bird survey results can not be compared with Mr. Orich's observations given the differences in their methods. Nevertheless, the Commission observes that where discrepancies were noted in the observed nests between the intervener's and Stirling experts, Stirling made reasonable attempts to verify the presence of the nests and identify the species using the nests.

¹⁴⁹ Exhibit 22546-X0322, AML Final Submissions, PDF page 10 to 11.

154. The Commission expects Stirling to engage in ongoing discussions with AEP, complete further pre-construction wildlife surveys as required or recommended by AEP and abide by its existing commitments to AEP concerning future surveys. These existing commitments include the commitment to:

- (a) Conduct amphibian surveys prior to construction within 100 metres of any Class 3 and higher wetlands;
- (b) Notify AEP of the results of environmental surveys;
- (c) Not to use a ploughing technique to install collector lines within 100 metres of any Class 3 and higher wetlands if any amphibian species-at-risk are detected; and
- (d) Implement any other mitigation measures recommended in consultation with AEP.

155. The above commitments are significant in light of Mr. Wallis's evidence on the importance of water bodies and wetlands in the project area as habitat for the great plains toad and plains spadefoot toad. The Commission notes that portions of the project's collector lines and access roads are proposed to be located within 100 metres of Class 2 and higher wetlands, which may result in adverse effects to amphibians and their habitat. Accordingly, if directed by AEP, the Commission expects Stirling to implement the same amphibian mitigation measures as above for any Class 2 wetlands that potentially provide breeding habitat for great plains toad and plains spadefoot toad and are located within 100 metres of the project construction footprint.

156. The Commission also expects Stirling to abide by its commitment, as part of the planned 2019 amphibian surveys, to survey and assess bird use (including that of bird species-at-risk), of Class 3 and higher wetlands where AEP's 100-metre setback is being encroached upon.¹⁵⁰ Stirling is directed to consult with AEP on the results of these bird use surveys around wetlands studies and implement any additional mitigation required by AEP as a result of these consultations.

7.2.2 Effects on birds and bats, and mitigation of these effects

7.2.2.1 Views of Stirling

157. AEP's renewable energy referral report stated that migratory and breeding bird surveys indicated low numbers of birds, limited presence of bird species with a high mortality risk from collisions with turbines, and a limited number of bird species-at-risk in the project study area.¹⁵¹ Stirling stated that the most common bird species were passerines, shorebirds, waterfowl and raptors.¹⁵²

158. McCallum Ltd. predicted mortality rates for the project of 6.88 passerine mortalities per turbine per year, 2.02 shorebird mortalities per turbine per year, and 0.84 waterfowl

¹⁵⁰ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 16.

¹⁵¹ Exhibit 22546-X0007.01, Attachment 5 - AEP Referral Report, PDF page 7.

¹⁵² Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 85 to 86, 92 and 105.

mortalities per turbine per year.¹⁵³ While passerines typically have the highest number of fatalities from turbine collisions, McCallum Ltd. stated that the population-level effects for most passerine species may be smaller compared to other bird species groups.¹⁵⁴ Stirling submitted that all project turbines were spaced at least 360 metres apart to reduce the obstruction of bird movements within and through the project study area.¹⁵⁵

159. Provincial and/or federal bird species-at-risk detected during the 2016 wildlife surveys included: breeding birds such as barn swallow, bank swallow, Baird's swallow, grasshopper sparrow, and chestnut-collared longspur; waterbirds such as northern pintail, Forster's tern, lesser scaup, upland sandpiper, long-billed curlew, and great blue heron; and raptors such as Swainson's hawk, ferruginous hawk, golden eagle, and northern harrier.¹⁵⁶ The most commonly detected species-at-risk were northern pintail, northern harrier, barn swallow, and Swainson's hawk. While three sharp-tailed grouse were observed, no sharp-tailed grouse leks were identified within 500 metres of the project boundary during the 2016 surveys.¹⁵⁷

160. Due to their behaviors and lower reproductive rates, raptors are more vulnerable to collisions with turbines than most other avian species groups.¹⁵⁸ Raptors were detected within the turbines' rotor sweep area approximately 13 per cent and 50 per cent of the time in the spring and fall 2016 migratory bird surveys, respectively.¹⁵⁹ McCallum Ltd. predicted a raptor mortality rate for the project of 0.12 mortalities per turbine per year, or 4.5 raptors per year based on 38 turbines.¹⁶⁰

161. During the 2016 raptor nest survey, one active great horned owl nest north of the project area and one ferruginous hawk nest approximately two kilometres south of the project area were detected. AEP's recommended setbacks are one kilometre year-round from active ferruginous hawk nests and 100 metres from active great horned owl nests.¹⁶¹ Two great horned owl nests and three Swainson's hawk nests were identified during another raptor nest survey conducted in 2018, but all nests were located far outside AEP's recommended setbacks.¹⁶² Stirling has committed to keeping raptor nest surveys current in accordance with AEP WM's requirements by repeating them every two years prior to the start of construction.¹⁶³

162. The project's draft EPP includes a post-construction wildlife-monitoring plan prepared in consultation with AEP and in accordance with AEP's *Wildlife Directive for Alberta Wind Energy Projects* to assess the impacts of operation on wildlife.¹⁶⁴ The post-construction wildlife-monitoring plan includes a minimum of three years of post-construction bird carcass

¹⁵³ The original report included incorrect figures of 3.44, 2.02 and 0.42 mortalities, per turbine per year, but McCallum acknowledged during the hearing that there was an error and the rates should be doubled; Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 118 to 123; Transcript, Volume 1, page 202, line 3 to 19.

¹⁵⁴ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 111.

¹⁵⁵ Exhibit 22546-X0168, 22546 Stirling Inteviewer IR1 28NOV2018, PDF page 39.

¹⁵⁶ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 78 to 103.

¹⁵⁷ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 95 and 115.

¹⁵⁸ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 111.

¹⁵⁹ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 89 and 109.

¹⁶⁰ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 124 to 126.

¹⁶¹ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF pages 113, 115 and 117.

¹⁶² Exhibit 22546-X0151, Stirling Wind Project-2018 Raptor Nest survey results.

¹⁶³ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 11.

¹⁶⁴ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 191.

surveys, repeating some of the pre-construction bird surveys (e.g., raptor nest, breeding bird) and comparing their results to those of the pre-construction surveys, calculating an annual estimated corrected fatality rate for birds, and submitting an annual post-construction wildlife monitoring report to AEP. As part of the project's adaptive management process, bird mortalities may trigger an investigation of the cause, consultation with AEP about the need for reactive bird mitigation, and monitoring the effectiveness of the reactive mitigation.¹⁶⁵ Stirling and McCallum Ltd. stated the project will comply with AEP's judgment and any operational mitigation that AEP may require in response to unacceptable mortality levels.¹⁶⁶ McCallum Ltd. indicated that AEP informed it that it presently determines bird mortality thresholds for a wind energy project by comparing a project's mortality rates to those of other wind energy projects in the region.¹⁶⁷ In the absence of specific bird mortality thresholds from AEP, the SL Group submitted that the Commission should set allowable thresholds for the project following the 2011 guidelines provided by the Ontario Ministry of Natural Resources.¹⁶⁸

163. Stirling objected to the SL Group's request to conduct five years of post-construction mortality reporting and provide the reports to the SL Group, stating it has committed to meeting AEP's three-year requirement and that "there would be no incremental benefit to the public interest by providing post-construction monitoring results directly to the SL Group."¹⁶⁹

164. In response to a complaint from the SL Group,¹⁷⁰ AEP reviewed the design of the project's existing 110-metre permanent meteorological tower. AEP required Stirling to either re-design or re-build the tower without guy wires or place bird marking devices on the guy wires to reduce potential bird collisions.¹⁷¹ Stirling later committed to installing bird markers on the tower's guy wires and confirmed during the hearing that they had been installed in December 2018.¹⁷² Stirling stated that it anticipated that the bird markers would be maintained during operation to ensure they remain visible and in good condition.¹⁷³

165. With respect to the project's effects on bats, the EE Report stated that the project's 2016 bat activity acoustic surveys were conducted in accordance with AEP protocols.¹⁷⁴ The EE Report stated that the spring 2016 bat survey detected an average of 0.19 total migratory bat passes per detector per night. The fall 2016 survey recorded an average of 0.47 total bat passes and 0.22 migratory bat passes per detector per night.¹⁷⁵ The EE Report stated the results were below AEP's one migratory bat pass per detector per night threshold and indicated a low and potentially acceptable risk.¹⁷⁶

166. AEP's renewable energy referral report included the following potential mitigation measures if high levels of bat mortalities are identified by AEP WM during project operation:

¹⁶⁵ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 188 to 192.

¹⁶⁶ Transcript, Volume 1, page 179, line 13 to page 180, line 15.

¹⁶⁷ Transcript, Volume 1, page 181, line 3 to 12.

¹⁶⁸ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 36.

¹⁶⁹ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 12 to 13.

¹⁷⁰ Exhibit 22546-X0183, Attachment K - Letter to AER, PDF page 21.

¹⁷¹ Exhibit 22546-X0145, AEP WM email re Stirling Wind Issues_deficiency.

¹⁷² Transcript, Volume 1, page 226, line 20 to page 227, line 1.

¹⁷³ Transcript, Volume 1, page 227, line 2 to 14.

¹⁷⁴ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 43.

¹⁷⁵ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 132 to 134.

¹⁷⁶ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 140 to 141.

altering the turbine cut-in speed; turbine shut-down at night during bat-migration periods; and any mitigation deemed appropriate based upon site-specific circumstances or incidents following consultation with AEP WM. If operational bat mitigation is required, AEP stated that an additional two years of bat mortality monitoring would be required to determine if mitigation is successful at reducing mortality rates to acceptable levels.¹⁷⁷

167. Stirling proposed a post-construction wildlife monitoring plan to address the potential mortality impacts to bats from operation, which included:

- Conducting a minimum of three years of post-construction bat-fatality studies, calculating an annual estimated corrected fatality-rate for bats, and submitting an annual post-construction wildlife monitoring report.¹⁷⁸
- Bat mortalities during operation may trigger an investigation of the cause, consultation with AEP about the need for reactive bat mitigation, implementing mitigation, and monitoring the effectiveness of the mitigation. The main reactive operational bat mitigations identified are: increasing turbine cut-in wind speeds at individual turbines or turbine clusters, and periodic shut-down of individual turbines or turbine clusters.¹⁷⁹ Operational mitigation should consider parameters that influence bat collision risk such as air temperature, wind speed, time of day, and peak periods of migratory activity.¹⁸⁰
- If additional mitigation is required by AEP to address high bat fatality levels present during the initial three-year monitoring period, Stirling will conduct additional years of post-construction bat fatality surveys to assess the effectiveness of the mitigation.¹⁸¹

7.2.2.2 Views of AltaLink

168. AltaLink has an aviation protection plan for the transmission facilities that provides standards and guidelines for identifying high risk bird collision areas.¹⁸² High risk collision areas include wetlands with high concentrations of waterfowl, permanent open water wetlands, river valleys, river crossings, and wetlands in high public use areas such as golf courses.¹⁸³ No such high risk areas have been identified in the vicinity of the proposed transmission line routes such that the installation of bird marking devices along the shield wire and/or optical ground wire would be required.

169. In response to concerns raised by the SL Group about the transmission line's potential effects on wildlife using nearby wetlands, AltaLink reiterated that its EE Report included desktop and field work assessment of wetlands that intersect the construction disturbance areas of both the preferred and alternate routes, and that field work confirmed that the areas identified by the SL Group as wetlands unmapped by AltaLink were not wetlands.¹⁸⁴ CH2M Ltd. submitted

¹⁷⁷ Exhibit 22546-X0007.01, Attachment 5 - AEP Referral Report, PDF page 7 to 8.

¹⁷⁸ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 146 to 149.

¹⁷⁹ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 192.

¹⁸⁰ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 142 to 143.

¹⁸¹ Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 146.

¹⁸² Transcript, Volume 1, page 62, line 6 to 10, and page 80, line 14 to 18.

¹⁸³ Transcript, Volume 1, page 81, line 17 to page 82, line 11.

¹⁸⁴ Exhibit 22546-X0322, AML Final Submissions, PDF page 10.

that the wetlands sited in the vicinity of both routes are at the lower end of wildlife habitat quality.¹⁸⁵

7.2.2.3 Views of the SL Group

170. Mr. Wallis stated that the project proposed no explicit and effective mitigation for waterbirds.¹⁸⁶ He recommended that project approval be contingent on operational mitigation that is also effective for reducing the project's collision risk to waterbirds and should include periods of peak migration and inclement weather events such as fog and snowstorms.¹⁸⁷

171. The SL Group requested as a condition of approval that all post-construction wildlife mortality reports be made public by filing them with the AEP, the Commission and the SL Group and publishing them on Stirling's website. The SL Group also requested that the Commission require Stirling to conduct five years of post-construction bird mortality surveys.¹⁸⁸

172. The SL Group raised concerns about the orientation of turbines 34 to 40 and 43 to 46 circling four large Class 5 wetlands and the amount of waterfowl observed using these wetlands which are susceptible to turbine collisions.¹⁸⁹

173. Mr. Orich recommended that all new transmission lines in the project area, or at least those line segments that pass in or near waterfowl flight paths between water bodies, be equipped with bird marking devices to reduce collisions.¹⁹⁰

174. With respect to the project's effects on bats, Mr. Wallis agreed that the project area appears not to exhibit high bat activity. Mr. Wallis noted that the only mitigation documented to reduce bat fatalities from wind turbines is operational curtailment during high risk periods.¹⁹¹ Mr. Wallis also submitted that if the project's post-construction corrected bat mortality rates are too high, then problematic turbines should be subject to further operational mitigation including possible decommissioning if mitigations are ineffective.

7.2.2.4 Commission findings

175. The Commission observes that several bird species-at-risk were observed in the project area during the wildlife field surveys. However, based on its review of the EE Reports and AEP correspondence including the original AEP renewable energy referral report and subsequent referral report update letters, the Commission accepts AEP's assessment that the project poses a low risk to bird species-at-risk and bird species groups in general.

176. Likewise, the Commission finds that the project poses a low risk to bats based on evidence from the independent witnesses for both Stirling and the SL Group, that the project area does not exhibit high bat activity. This evidence is consistent with AEP's referral report which

¹⁸⁵ Transcript, Volume 1, page 78 line 24 to page 79, line 5.

¹⁸⁶ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 37.

¹⁸⁷ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, PDF page 41.

¹⁸⁸ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 44.

¹⁸⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 42 to 43.

¹⁹⁰ Exhibit 22546-X0179, Attachment G - Expert Report of Ken Orich -Stirling WP Area Birds, PDF page 75.

¹⁹¹ Exhibit 22546-X0177, Attachment E - Expert Report of Cliff Wallis, page 38.

concluded that, in accordance with the criteria *Bat Mitigation Framework for Wind Energy Projects*, cited in the AEP Referral Report, the project area is classified as a potentially acceptable and low risk site for bat fatalities based on the results of the pre-construction bat surveys.

177. The Commission considers that the identified level of risk to birds and bats from the project is reasonably mitigated through imposition of the conditions identified in Section 7.2.4, the applicants' adherence to their previously expressed commitments and the Commission's expectations and conditions.

178. The Commission expects Stirling to maintain the visibility and condition of the bird markers that have been installed on the guy wires of the permanent meteorological tower by inspecting them as part of the project's routine operational maintenance activities and replacing the markers as necessary.

179. The Commission acknowledges that the SL Group raised concerns with AltaLink's proposed transmission line routing where it crosses wetland areas heavily used by birds, and that Mr. Orich proposed that AltaLink should install bird markers along certain sections of the line. AltaLink does not currently anticipate installing bird markers, because it did not identify the area as a high risk area for bird collisions. The Commission has considered the SL Group's concerns and concludes that there is insufficient evidence on the record to require AltaLink to install the bird markers as proposed.

7.2.3 Conservation and reclamation

7.2.3.1 Views of Stirling

180. Stirling will implement a reclamation plan as described in Section 10 of its draft Environmental Protection Plan (EPP).¹⁹² A post-construction reclamation and decommissioning plan is required by both the County of Warner No. 5 and Lethbridge County as part of their development permit approval processes. The terms of the lease agreements with landowners also require Stirling to return the land to substantially the same condition as when the lease was signed.¹⁹³

181. Stirling has committed to consultation with landowners with respect to decommissioning and end-of-life reclamation activities. Stirling acknowledges that it is statutorily required to obtain a reclamation certificate from AEP in accordance with the *Conservation and Reclamation Regulation* when the project is decommissioned¹⁹⁴ and has accordingly, committed to complying with the requirements of AEP's 2018 *Conservation and Reclamation Directive for Renewable Energy Operations* and any other applicable conservation and reclamation-related regulations.¹⁹⁵

182. Stirling is also considering the establishment of a protocol for reclamation funding, which would include commissioning an independent study to assess decommissioning costs and salvage value near the end of the project's life cycle.¹⁹⁶ The salvage values of steel, copper, and

¹⁹² Exhibit 22546-X0010, Attachment 8 - Environmental Evaluation, PDF page 185 to 188.

¹⁹³ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 19.

¹⁹⁴ Exhibit 22546-X0274, Appendix D - Proposed Conditions and Applicant's Responses, PDF page 3.

¹⁹⁵ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 15.

¹⁹⁶ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 15.

other metals in a turbine can be significant and practically all of the valuable components are salvageable upon decommissioning.¹⁹⁷ Stirling is open to posting security for any difference between the decommissioning costs and the estimated salvage value based on the results of the study conducted near the end of the project's life cycle; however, it objects to the posting of a reclamation bond or similar security as an explicit condition of approval.¹⁹⁸

7.2.3.2 Views of the SL Group

183. Project reclamation is a concern. AEP's 2018 *Conservation and Reclamation Directive for Renewable Energy Operations* should apply to the project, and the Commission should require Stirling to prepare and file a conservation and reclamation plan in accordance with this directive.

184. The Commission should also require a security deposit for reclamation as a condition of project approval¹⁹⁹ as there is no certainty that sufficient funds for reclamation will be available at the project's end of life or that the salvage value of the project would be enough to cover the reclamation costs of the project.

7.2.3.3 Commission findings

185. The Commission has considered the evidence submitted and the commitments made by Stirling in light of the statutory framework for end-of-life reclamation activities in Alberta. For the reasons that follow, the Commission is satisfied that Stirling has taken an acceptable approach to ensure the effective decommissioning and reclamation of the project and that the concerns and risks identified by the SL Group are reasonably addressed and mitigated by the relevant legislation, the contractual and other commitments made by Stirling concerning decommissioning and reclamation and the conditions imposed in Section 7.2.4.

186. Under the *Environmental Protection and Enhancement Act* and the *Conservation and Reclamation Regulation*, the operators of "renewable energy operations" including wind power projects have a duty to conserve and reclaim land used for the construction and operation of the project. This includes a requirement to obtain a reclamation certificate from AEP. In September 2018, the Government of Alberta released the *Conservation and Reclamation Directive for Renewable Energy Operations*, which provides more detailed information on conservation and reclamation planning and reclamation certificate requirements.²⁰⁰ The directive does not currently²⁰¹ mandate operators to provide a conservation and reclamation plan in their application for approval from the Commission.

187. Stirling acknowledged its statutory obligation to decommission the project and reclaim the project footprint in accordance with the *Environmental Protection and Enhancement Act* and its associated *Conservation and Reclamation Regulation*, AEP's *Conservation and Reclamation*

¹⁹⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 19.

¹⁹⁸ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 15.

¹⁹⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 49 to 52.

²⁰⁰ Government of Alberta – Alberta Environment and Parks (GOA: AEP). 2018. *Conservation and Reclamation Directive for Renewable Energy Operations*. Edmonton, Alberta.

²⁰¹ For applications submitted prior to January 1, 2020, the directive does not require submission of a conservation and reclamation plan to the Commission.

Directive for Renewable Energy Operations, and any development permits issued by the counties. While not strictly necessary, the Commission has reinforced this obligation through imposition of a condition requiring compliance with all statutory reclamation obligations in place at the time of decommissioning.

188. Stirling has further acknowledged its responsibilities on decommissioning in the project's EPP, which contains a conceptual reclamation plan and has also contractually committed to the proper decommissioning and reclamation of the project in its lease agreements with participating landowners.

189. Also significant is Stirling's assertion that the salvage values of steel, copper and other metals in a turbine can be significant and are generally salvageable upon decommissioning. The Commission considers that this provides some assurance that funds will be available for reclamation activities.

190. With respect to the SL Group's request that the Commission require Stirling to post security, the Commission notes that the legislative scheme established under the *Environmental Protection and Enhancement Act* provides that operators of renewable energy operations could be required to post security, should a designation be made by the Minister under the *Conservation and Reclamation Regulation*. Given the foregoing, and as no such designation has been made, the Commission does not consider it appropriate in the circumstances to require security to be posted.

7.2.4 Conditions of approval and environmental effects conclusion

191. The Commission has considered the evidence on the record of this proceeding in assessing the environmental effects of the proposed facilities, including the various commitments made by the applicants, the mitigation and monitoring plans established by the applicants in consultation with AEP, and the project's adherence to applicable regulatory standards, directives and guidelines, including post-construction wildlife requirements set out in the AEP's *Wildlife Directive for Alberta Wind Energy Projects* and renewable energy referral report.

192. With respect to the environmental effects of the project, the Commission considers that adherence to the mitigation measures identified in AEP's correspondence (including the AEP's original renewable energy referral report and subsequent referral report update letters), the project's EE Reports and associated appendices (including the draft EPP), and to any additional measures that may be recommended by AEP following the Commission's approval, is essential to reducing the project's environmental effects.

193. Similarly, the Commission considers that AltaLink's adherence to the mitigation measures identified in its evidence is essential to reducing the environmental effects of its proposed transmission facilities. The Commission accepts AltaLink's assurances that it will implement the mitigation measures itemized in the transmission facilities' environmental specifications and requirements document for avoiding or reducing the proposed transmission line's environmental effects on wildlife and wetlands.

194. Taking into account its findings in this section, the Commission considers that the potential adverse environmental effects from construction and operation of the proposed facilities can be reasonably mitigated through imposition of the following conditions.

- The siting, construction and operation of the project's infrastructure shall meet all of AEP's setbacks for wetlands and wildlife species-at-risk habitat features for the project, unless AEP has agreed to implementation of a reduced setback and alternative mitigations.
- Stirling shall abide by all of AEP's directions outlined in AEP correspondence on the record of this proceeding. This includes keeping the project's wildlife data current until the project is commissioned by conducting amphibian surveys and repeating raptor nest surveys in 2019, and by updating other pre-construction wildlife field surveys as required by AEP. Stirling shall continue to consult with AEP throughout construction and operation of the project as necessary, and implement any additional mitigation measures recommended by AEP.
- Stirling shall abide by all of the commitments and recommendations included in its final version of the environmental protection plan developed for the project. Stirling shall implement all mitigation measures identified in the environmental protection plan.
- AltaLink shall abide by all of the commitments and recommendations included in its final version of its project-specific environmental specifications and requirements document. AltaLink shall implement all mitigation measures identified in this document.
- Stirling shall abide by any requirements and commitments outlined in its final version of the post-construction wildlife monitoring plan developed for the project unless otherwise directed by AEP. Stirling shall submit to the Commission annually a copy of the project's post-construction wildlife monitoring report along with correspondence from AEP WM summarizing its views on the report.
- As part of its post-construction wildlife monitoring program, Stirling shall communicate to AEP the corrected mortality rates for birds and bats (using an AEP approved "fatality estimator") and upon the discovery of any carcasses of species-at-risk, must report the discovery to AEP. Stirling must abide by any AEP requirements to implement new mitigation measures to prevent or reduce further mortalities.
- Following completion of the post-construction wildlife monitoring program, Stirling shall notify AEP of the discovery of any carcasses of species-at-risk or high levels of mortality which might be observed near project infrastructure during operation or maintenance and, if required, implement any new mitigation measures that AEP may recommend to prevent or reduce further mortalities.
- AltaLink shall notify AEP of the discovery of any carcasses of species-at-risk or high levels of mortality which might be observed near the transmission facilities during operation or maintenance and, if required, implement any new mitigation measures that AEP may recommend to prevent or reduce further mortalities.
- Stirling shall comply with current applicable reclamation standards at the time of decommissioning. If no legislative requirements pertaining to reclamation are in place at the time of decommissioning, Stirling shall submit a reclamation plan to the Commission for approval.

195. With diligent adherence to the conditions listed above, the Commission concludes that the potential adverse environmental effects from construction and operation of the proposed facilities can be satisfactorily mitigated. The Commission accordingly considers the project to be in the public interest having regard to its environmental effects.

7.3 Noise

7.3.1 Views of Stirling

196. The noise impact assessment (NIA) submitted in support of the application demonstrated compliance with Rule 012. More specifically, the NIA predicted that the cumulative sound levels are below permissible sound levels, and that the potential for low frequency noise is minimal.²⁰²

197. The NIA included four receptors (R94, R102, R118, and R123) within 1.5 kilometres of a wind turbine or the substation, and three third-party facilities in its modelling. As no NIAs were found for the third-party facilities, Stirling conducted a field visit. The NIA predicted that all receptors would be below the daytime and nighttime permissible sound levels, which are 50 to 53 dBA Leq daytime and 40 to 43 dBA Leq nighttime, calculated in accordance with Rule 012, when the project is in operation. Receptor R102 showed the highest cumulative sound levels with 39 A-weighted decibels (dBA) nighttime and 48 dBA daytime. The permissible sound levels for this receptor are 43 dBA nighttime and 53 dBA daytime.²⁰³

198. The NIA also included an analysis of the potential for a low frequency noise condition. The Rule 012 test for a potential low-frequency noise condition is that the difference between the C-weighted daytime levels and the A-weighted daytime levels must be equal to or greater than 20, and tonal sound must be present at frequencies lower than 250 Hz. The NIA model showed that the dBC-dBA calculation was greater than 20 at all receptors; however, Stirling added that the specifications provided for the turbine model used for the project indicated that tonality would not occur at or below 250 Hz.²⁰⁴

199. Stirling will develop traffic plans as required by the County of Warner No. 5 and Lethbridge County, and follow their bylaws for construction noise in order to mitigate and minimize such disturbance to the greatest extent possible.²⁰⁵ Construction activities would occur between 7 a.m. and 10 p.m., and nearby residents would be advised of significant noise-generating activities. Stirling will work with residents to schedule these activities to reduce disruptions, and will ensure all internal combustion engines are well maintained, and equipped with muffler systems.²⁰⁶

200. The article relied on by the Stankos to support their concern about health impacts due to noise, relates to noise levels around 60 dB. However, the nighttime permissible sound level is 40 dBA. Compliance with Rule 012 is designed to limit the potential for negative impacts to residents and is consistent with health-based limits in other jurisdictions.²⁰⁷

²⁰² Exhibit 22546-X0011.01, Attachment 9 Noise Impact Assessment, PDF page 6.

²⁰³ Exhibit 22546-X0011.01, Attachment 9 Noise Impact Assessment, PDF page 18.

²⁰⁴ Exhibit 22546-X0011.01, Attachment 9 Noise Impact Assessment, PDF page 20.

²⁰⁵ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 9.

²⁰⁶ Exhibit 22546-X0011.01, Attachment 9 Noise Impact Assessment, PDF page 20.

²⁰⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 8.

7.3.2 Views of AltaLink

201. The noise level of the transmission line at the road allowance edge would be significantly below the assumed ambient sound level of 35 dBA Leq. The noise from the transmission line is considered negligible and within the permissible sound levels.²⁰⁸ An NIA was not conducted as there are no continuous noise sources as part of AltaLink's proposed transmission facilities.

202. Construction activities would occur between 7 a.m. and 10 p.m. While temporary construction noise is anticipated to occur; the construction noise is not expected to vary greatly from typical farming equipment used in the area. It is not anticipated that ongoing operations or maintenance activities would cause additional noise impacts, and significant maintenance is not expected for the first 20 years of operation.²⁰⁹

7.3.3 Views of the SL Group

203. The Stankos currently enjoy a peaceful, quiet area and are concerned that the noise from the construction and operation of the substation would disrupt their sleep and cause other irritation²¹⁰ as would noise from increased traffic use of the road, which is 104 feet from their residence. Continual maintenance and eventual upgrading of the substation will also result in noise concerns through the lifetime of the substation. An article, submitted by the Stankos, looked at the negative health impacts associated with noise levels around 60 dB.²¹¹ The other members of the SL Group share the Stanko's concerns about noise associated with the construction of the substation. Relocating the substation one mile north would increase the distance from residences and would minimize these concerns.

7.3.4 Commission findings

204. The Commission acknowledges the interveners' concerns and that the project will introduce added noise to the project area. However, the purpose of an NIA is to ensure that the noise from a facility, measured cumulatively with noise from other energy-related facilities, does not exceed the permissible sound level calculated in accordance with Rule 012. For the project, the permissible sound level values are 50 to 53 dBA Leq daytime and 40 to 43 dBA Leq nighttime, depending on the dwelling density at the various receptors. For the reasons that follow, the Commission accepts the final NIA submitted by Stirling and finds the project in compliance with the requirements of Rule 012.

205. The SL Group did not challenge the results of the NIA and there is no reason otherwise apparent to the Commission why its results should not be accepted. Based on its review of the NIA, the Commission is satisfied that the NIA provides reasonable predictions of the project's noise contribution as well as the cumulative noise level that would be experienced at nearby residences. Accordingly the Commission accepts the cumulative sound level assessment in the

²⁰⁸ Exhibit 22546-X0100, AML Stirling Wind Project Connection – Application, PDF page 78.

²⁰⁹ Exhibit 22546-X0280, AML Reply Evidence, PDF page 7.

²¹⁰ Exhibit 22546-X0176, Attachment D - Submission of George and Marge Stanko, PDF page 2.

²¹¹ Exhibit 22546-X0198, Attachment Z - Noise pollution and air pollution both have negative effects.

NIA, which indicates that the daytime and nighttime permissible sound level requirements will be met at all of the receptor locations.²¹²

206. With respect to the potential for low frequency noise, Rule 012 contains a two-part test to assess the potential for low frequency noise. With respect to the first part of the test, while the dBC minus the dBA value was predicted to be greater than 20 dB at the receptors, the turbines are not predicted to have a tonal component. Because the turbines are not predicted to have a tonal component, the Commission considers the potential for low frequency noise issues from the turbines to be low. Based on the above, the Commission finds that Stirling followed Rule 012 requirements in conducting its low frequency noise analysis and is satisfied, based on the evidence, that the operation of the project would result in a low potential for low frequency noise at the receptors.

207. The Commission agrees with AltaLink that an NIA was not required for the transmission facilities. Based on the evidence provided by AltaLink concerning the construction and operation of the transmission facilities, the Commission is satisfied that these facilities are unlikely to introduce significant noise.

208. With respect to construction noise, the Commission finds this noise to be temporary and that its effects can be reasonably mitigated through the Stirling's commitment to work with the counties and landowners to implement measures to minimize impacts and to provide notice of disruptive activities.

7.4 Land use and property impacts

7.4.1 Views of Stirling

209. Stirling remains open to discussing the use of trees or other types of visual screening to address and mitigate the SL Group's concerns about visual impacts from the substation, transmission line, and turbine lights. Regarding the aviation warning lights on some wind turbines, these lights are typically shielded from ground view and are required by Transport Canada. Stirling does not intend to install more than the minimum number of lights required by Transport Canada.²¹³

210. Stirling has committed to working with counties and local authorities to address the SL Group's concerns with regards to increased traffic and dust from increased road use and will follow all requirements in the road use agreements. These agreements typically include an obligation to implement dust control measures.²¹⁴ Stirling does not expect a significant increase in road traffic during the operational phase of the project.²¹⁵

211. To address concerns that a waterline used by the Stankos could be damaged during the construction and operation of the project, Stirling has committed to identifying the owner of the waterline prior to construction, and to developing appropriate crossing agreements with the owner.²¹⁶ Stirling will accurately locate the waterline prior to construction and either protect or

²¹² Exhibit 22546-X0011.01, Attachment 9 Noise Impact Assessment, PDF page 6.

²¹³ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 8.

²¹⁴ Transcript, Volume 1, page 103, line 23 to 25.

²¹⁵ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 9.

²¹⁶ Transcript, Volume 1, page 113, line 14 to 20.

relocate it. Should the waterline be damaged during construction, Stirling would work with the owner to repair the line as quickly as possible.²¹⁷

212. Stirling will follow all applicable provincial clubroot procedures and abide by the Alberta *Weed Control Act*. Stirling has also committed to conducting pre-disturbance and post-construction weed surveys,²¹⁸ and to consulting with landowners to determine whether there is clubroot in the area, sample susceptible soils or plants using approved methods, maintain sampling records, monitor and maintain equipment in a clean state and wash and disinfect equipment as needed.²¹⁹

7.4.2 Views of AltaLink

213. No significant visual impacts are expected from AltaLink's preferred transmission line route, as it would be taking the place of an existing distribution line. Because the distribution line would be relocated, the transmission line would also not cause a visual funnelling effect along Range Road 72 (transmission and distribution lines on both sides of the road). While the Stankos raised concerns about the visual impact of the transmission line from their yard, visual impacts at that location are expected to be minimal because their residence is approximately 1200 metres east of the Red Coat 967S Substation.²²⁰

214. Air quality and dust control measures are outlined in AltaLink's environmental specifications and requirements document, which states that dust emissions from access roads and construction activities will be controlled as necessary. Chemical dust suppressants would not be used.²²¹ Ground patrol inspections would occur every three to seven years and vegetation management would be conducted as required. No significant maintenance is expected in the first 20 years of service and therefore maintenance activities would be unlikely to add to traffic and dust concerns.

215. Traffic volume along Township Road 72 near the construction sites is anticipated to increase temporarily during construction, and AltaLink would work with road use authorities to minimize traffic impacts. Construction would be expected to be completed between September and December 2019.²²²

216. AltaLink attempted to avoid or minimize agricultural impacts when designing the transmission line routes by locating the transmission line within road allowances or along section lines. Locating the transmission line on section lines would reduce land fragmentation and impacts on cultivated lands.²²³ The proposed transmission line provides adequate clearance for farm machinery under six metres tall to pass safely underneath and the preferred route has fewer impacts on agricultural uses.

²¹⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 12.

²¹⁸ Exhibit 22546-X0168, 22546 Stirling Intevenor IR1 28NOV2018, PDF page 16.

²¹⁹ Exhibit 22546-X0320, Stirling Wind Project LP Final Written Argument - February 6, 2019, PDF page 13.

²²⁰ Exhibit 22546-X0280, AML Reply Evidence, PDF page 5.

²²¹ Exhibit 22546-X0085, AML Stirling Wind Project Connection - Appendix L Environmental Evaluation, PDF page 53.

²²² Exhibit 22546-X0280, AML Reply Evidence, PDF page 7.

²²³ Exhibit 22546-X0100, AML Stirling Wind Project Connection – Application, PDF page 74.

217. AltaLink has a weed management policy and all contractors must carry out weed-control activities in compliance with the *Weed Control Act*. AltaLink would conduct a pre-assessment survey in areas where the spread of weeds or clubroot is a concern.²²⁴ Equipment and materials would also be properly cleaned prior to entering the construction site and would be free of mud, soil, vegetative material and debris prior to leaving the site. Contractors would also be required to follow AltaLink's Clubroot Management Procedure should clubroot be confirmed in the project area.²²⁵

7.4.3 Views of the SL Group

218. The SL Group is concerned that a funnelling effect would result from having a transmission line on the north side of Township Road 72 and a distribution line on the south side of the road. Also of concern are the visual impacts of the transmission line. While AltaLink stated the alternate route would have a higher visual impact because it would be a new disturbance, the owner of the majority of the land along the alternate route is the New York Colony, which is hosting most of the project's turbines. Further, the New York Colony residences are approximately two miles from the alternate transmission line route.²²⁶

219. The proposed substation also creates visual impacts. Locating the substation one mile north would reduce the visual impacts as the substation would be located at least one mile from any road and two miles from the colony residences. The Stankos are the closest residents to the proposed substation. The substation will be an eyesore for them. Other potential locations exist that would not impact their views.²²⁷

220. Dust will be generated by increased traffic. Dust has a negative impact on crops, gardens and health. The SL Group currently pays for dust control from the County of Warner No. 5. The cost for dust suppression for the first 200 metres of the road is shared between the landowners and the county, and is applied twice a year. The County uses a calcium chloride mixture for dust mitigation. Any additional dust control measures are paid for entirely by the landowners at a cost of \$2,000 per 200 metres.²²⁸

221. The increased traffic from project and transmission facilities' construction, operation and maintenance would wear out the dust suppressant applications and additional applications would be necessary. Stirling and AltaLink should be required to pay for adequate dust control from the County of Warner No. 5.²²⁹ While Stirling and AltaLink apply dust control measures using water, the effectiveness and frequency of the water applications is uncertain.²³⁰

222. The project's construction may also introduce noxious weeds and clubroot into the area. The majority of the project is sited on New York Colony land. The New York Colony farms the land near the Conrads, Stankos and Metzgers, which increases the risk of weeds and clubroot spreading.

²²⁴ Transcript, Volume 1, page 69, line 12, to page 70, line 12.

²²⁵ Exhibit 22546-X0280, AML Reply Evidence, PDF page 9.

²²⁶ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 14.

²²⁷ Exhibit 22546-X0176, Attachment D - Submission of George and Marge Stanko, PDF page 1.

²²⁸ Transcript, Volume 2, page 277 to 279.

²²⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 23.

²³⁰ Transcript, Volume 2, page 282, line 15 to page 283, line 6.

223. The Commission should make Stirling's clubroot protocol a condition of the approval and require Stirling to identify to the SL Group where construction equipment is coming from and when the equipment will arrive.²³¹ Plant and soil samples should also be taken on lands hosting the wind turbines to test for the presence of clubroot²³² and the SL Group should be notified if clubroot was found in the area. It is concerning that Stirling did not know that clubroot is a reportable disease in Warner County.²³³

224. The Stankos share a waterline with the New York Colony which provides water for their gardens, trees, plants and animals. The Stankos are concerned that the waterline could be damaged during construction of the wind project. They requested that Stirling locate the waterline and ensure the line is protected during construction. Stirling should also be required to pay for repairs if the waterline is damaged during construction and for any adverse effects as a result of interruption to the water supply.²³⁴

225. The Conrads are concerned that property values would decrease as a result of the proximity of the substation and transmission line. Entrenching the turbine removal agreement in the Commission's approvals would help address these concerns.²³⁵

7.4.4 Commission findings

226. When considering the visual impacts of a proposed project, the Commission takes into account that the assessment of visual impacts is inherently subjective in nature. Nonetheless, it recognizes that the proposed wind turbines are large and that if the project is approved, the landscape of the project area would be changed. This is one of the factors the Commission has considered in making its overall public interest determination for the project. However, overall, the Commission is not convinced that the visual impact of the project is prohibitive in and of itself. The Commission notes that Stirling remains open to discussing mitigation measures to address the visual impact of the project and the Commission encourages the parties to continue such discussions

227. The Commission also acknowledges the interveners' concerns about increased traffic and that increased dust will likely occur as a result of the project and transmission facilities; however, the Commission does not consider that conditions for additional dust control are necessary. The Commission notes that both Stirling and AltaLink have committed to working with the counties and local authorities to implement dust control measures and to mitigate the impacts caused by the increase in traffic, and considers that these measures should be adequate to reasonably mitigate potential impacts.

228. The Commission is also not persuaded that specific conditions to address weed control are necessary. Stirling and AltaLink have both committed to carry out weed-control activities in compliance with the *Weed Control Act*. While the SL Group has concerns that weeds could spread from the New York Colony, the Commission notes that there are no project components located on the SL Group's land and the SL Group can contact Warner County to obtain

²³¹ Exhibit 22546-X0172, Master Submission of Stirling Landowner Group, PDF page 10.

²³² Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 26.

²³³ Transcript Vol. 2, page 248, line 14 to 15.

²³⁴ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 27.

²³⁵ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 26.

information on clubroot in the area. The Commission expects Stirling to provide the results of the project's pre-disturbance and post-construction weed surveys to the SL Group as per the SL Group's request.

229. The Commission finds that Stirling has adequately considered potential impacts to the Stanko's waterline and has developed a reasonable plan to address and mitigate potential damage to the line. The Commission notes that Stirling has committed to, among other things, repairing the waterline in a timely manner should it be damaged. The Commission acknowledges the Stankos' submission that Stirling should be required to pay for repairs and any other potential adverse effects should the waterline be damaged during construction. However, should such damage occur, any resulting compensation between parties would be a matter settled between those parties and outside the scope of the Commission's jurisdiction.

230. The Commission finds that while assertions were made on the impacts on property value, no evidence was provided on whether or not the project would have an impact on property value. While the SL Group requested the turbine removal agreement be entrenched to address this concern, as discussed in Section 5.5 of this decision, it is neither appropriate nor necessary in the circumstances to do so.

7.5 Safety

7.5.1 Views of Stirling

231. The project will be monitored by both on-site project personnel and a remote operation centre 24 hours per day, seven days per week. Should an emergency occur, the remote operation centre will contact on-site personnel and local emergency responders. On-call staff are anticipated to reach the project site within 45 minutes of being notified of an emergency.²³⁶

232. Should a fire occur at the substation due to an electrical fault, the substation is designed to automatically stop the flow of power at the substation. Once a fire is observed, on-site staff would call 911 to dispatch local responders. Stirling will maintain a list of nearby residents in the project area to notify of emergency situations where applicable.²³⁷

233. The project's emergency response plan will be developed in consultation with local emergency responders and fire departments, prior to commencement of construction. All contractors would be required to comply with this plan or develop their own plans with local emergency services during the construction and operation phases of the project.²³⁸

234. The Metzger's request that they be indemnified against loss sustained from fire spreading from the Metzger lands, is not sufficiently specific to form a condition of approval.²³⁹ Stirling will maintain commercial liability insurance that would cover negligent acts such as damage to properties caused by a fire.²⁴⁰

²³⁶ Transcript, Volume 1, page 206, lines 3-10.

²³⁷ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 10.

²³⁸ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 10.

²³⁹ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 17.

²⁴⁰ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 10.

235. There is limited risk of ice throw from the turbines. The formation of ice on a turbine requires a specific set of humidity and temperature conditions, and that the turbine be spinning. The turbine's vibration control measures will automatically shut down in the event of icing, and the turbine cannot be restarted until it has been visually inspected by someone on-site.²⁴¹ Another potential mitigation is to evaluate weather patterns and pre-emptively stop the turbines to avoid these conditions.²⁴²

236. Concerns of the SL Group that the turbines could fall over on or near roads, are acknowledged. However, such an event is rare. Further, given the low likelihood of failure, and the amount of traffic on these roads, it would be very unlikely a turbine would contact a vehicle.²⁴³

7.5.2 Views of AltaLink

237. In response to the SL Group's concerns about fire spreading from the transmission line and the impacts of high winds and severe storms, AltaLink notes that the transmission line is designed to withstand a 50-year weather event with no mechanical failures and is designed with an overhead shield wire. The poles are constructed using non-flammable insulators.

238. Should a fire or weather event cause a failure on the transmission line, AltaLink's control centre would be alerted immediately, and a transmission line specialist would be contacted to patrol the area to locate the fault. AltaLink could be assisted by FortisAlberta personnel as well, and it is expected that someone would be on-site within three to four hours.²⁴⁴ Further, the Stirling volunteer fire department could respond to a fire within 20 minutes.²⁴⁵

7.5.3 Views of the SL Group

239. The potential for fires spreading from the transmission lines and substation to the surrounding property is a concern. Mr. Metzger is also concerned about fire spreading from his farming operation to the substation. He stated that farm equipment occasionally causes fires, which could spread to the nearby substation. While he carries fire risk coverage for normal crop loss, he is worried his insurance would not cover damage to the substation.

240. The response time of the local volunteer fire fighting team is also a concern. Mr. Conrad testified that he personally came across a fire caused by a failed power line. He stated that he called the fire department and battled it for two hours before the fire was put out. The fire department did not arrive until after the fire was extinguished; FortisAlberta personnel did not arrive until 18 hours afterwards.²⁴⁶

241. The SL Group requested that fire breaks be maintained around the substation, fire suppression equipment be installed on buildings, adequate fire-fighting equipment be available on site, a water reservoir be established on site, a fire-fighting emergency response plan be

²⁴¹ Transcript, Volume 1, page 124, line 16 to 19.

²⁴² Transcript, Volume 1, page 123, line 6 to 15.

²⁴³ Exhibit 22546-X0326, Stirling Wind Project LP Reply Argument - February 20, 2019, PDF page 18.

²⁴⁴ Exhibit 22546-X0273, Stirling Wind Project-Reply Evidence, PDF page 8 to 9.

²⁴⁵ Transcript, Volume 1, page 67 line 23, to page 68 line 5.

²⁴⁶ Transcript, Volume 2, page 253, line 12 to 23.

developed and copies of fire control arrangements between the applicants and local fire-fighting authorities be provided to it.²⁴⁷

242. Mr. Metzger also requested that Stirling hold fire insurance to protect itself from neighbouring fire risks and that he be indemnified if a fire resulting from normal agricultural operations spread to the substation from his property.²⁴⁸

243. Ice thrown from the turbines is another concern. Material from the Canadian Wind Energy Association, or CANWEA, suggests that five-kilogram ice chunks could be thrown 270 metres from turbines and Stirling testified that they could be thrown a maximum distance of 375 metres.²⁴⁹

244. Turbines could also fall over onto roads. With a maximum height of 180 metres, there are seven turbines that could fall into a developed road allowance.²⁵⁰

7.5.4 Commission findings

245. The Commission acknowledges the safety concerns raised by the SL Group and is satisfied that Stirling has identified and detailed reasonable and adequate measures to address these concerns. Those measures include commitments to:

- Develop an emergency response plan prior to commencement of construction in consultation with local emergency responders and fire departments,
- Constantly monitor project components,
- Incorporate safety features into the design of project components for example, to interrupt the flow of electricity and to stop the wind turbines from spinning, should an emergency event occur.

246. Concerning the risk of fire in particular, given the safety measures inherent in the turbine design and Stirling's intended development of an emergency response plan in conjunction with local authorities, the Commission is satisfied that adequate safety measures are in place. The Commission was not presented with sufficient evidence to establish that the need for additional fire control measures are required for this particular project, given the mitigations and plans described by Stirling.

247. The Commission is also satisfied that the setback requirements and vibration control measures described by Stirling reasonably mitigate the potential for ice throw. The Commission was not presented with sufficient evidence to satisfy it that further measures are required in this case to mitigate the risks of ice throw and falling turbines.

²⁴⁷ Exhibit 22546-X0172, Master Submission of Stirling Landowner Group, PDF page 9.

²⁴⁸ Exhibit 22546-X0175, Attachment C - Submission of Cal and Peggy Metzger, PDF page 4.

²⁴⁹ Exhibit 22546-X0316, Final Argument Submission of Stirling Landowner Group, PDF page 55.

²⁵⁰ Exhibit 22546-X0308, RESPONSE TO UNDERTAKING NUMBER 2.

7.6 Other approvals

248. As noted in Section 4, an applicant must obtain all approvals required by other applicable provincial or federal legislation.

249. Stirling received approval from Transport Canada on March 29, 2017, for the original project layout. It provided an update to Transport Canada for the final layout, but was informed that approval would not be given until 90 days prior to the start of construction.

250. Similarly, Stirling received approval from NAV CANADA on March 28, 2017, for the original project layout and provided an update to NAV CANADA on April 13, 2018; however, a response from NAV CANADA for the final layout is pending.²⁵¹

251. Environment and Climate Change Canada provided preliminary approval to Stirling and confirmed it does not have strong objections to the final turbine layout.²⁵²

252. Alberta Culture and Tourism provided a *Historical Resources Act* approval on April 26, 2017, which indicated a historical resource impact assessment was not required for the project. Stirling submitted an application for additional land to Alberta Culture and Tourism as a result of the amendment. While Stirling is awaiting approval from Alberta Culture and Tourism, it noted that the final turbine locations are a subset of the locations of the original turbine layout. A *Historical Resources Act* approval was provided to AltaLink for the transmission line on June 6, 2017.²⁵³

8 Decision

253. For the reasons described in the preceding sections, the Commission confirms the AESO's assessment of the need to be correct and finds, in accordance with Section 17 of the *Alberta Utilities Commission Act*, that approval of the facility applications is in the public interest having regard to the social, economic and other effects of the project and transmission facilities including their effects on the environment. The Commission's approval of the project and transmission facilities are subject to the following conditions:

- The siting, construction and operation of the project's infrastructure shall meet all of AEP's setbacks for wetlands and wildlife species-at-risk habitat features for the project, unless AEP has agreed to implementation of a reduced setback and alternative mitigations.
- Stirling shall abide by all of AEP's directions outlined in AEP correspondence on the record of this proceeding. This includes keeping the project's wildlife data current until the project is commissioned by conducting amphibian surveys and repeating raptor nest surveys in 2019, and by updating other pre-construction wildlife field surveys as required by AEP. Stirling shall continue to consult with AEP throughout construction and

²⁵¹ Exhibit 22546-X0001.01, Stirling Wind Project AUC Application 07APR2017, PDF page 17.

²⁵² Exhibit 22546-X0001.01, Stirling Wind Project AUC Application 07APR2017, PDF page 17 to 18.

²⁵³ Exhibit 22546-X0084, AML Stirling Wind Project Connection - Appendix M Historical Resources Act.

operation of the project as necessary, and implement any additional mitigation measures recommended by AEP.

- Stirling shall abide by all of the commitments and recommendations included in its final version of the environmental protection plan developed for the project. Stirling shall implement all mitigation measures identified in the environmental protection plan.
- AltaLink shall abide by all of the commitments and recommendations included in its final version of its project-specific environmental specifications and requirements document. AltaLink shall implement all mitigation measures identified in this document.
- Stirling shall abide by any requirements and commitments outlined in its final version of the post-construction wildlife monitoring plan developed for the project unless otherwise directed by AEP. Stirling shall submit to the Commission annually a copy of the project's post-construction wildlife monitoring report along with correspondence from AEP WM summarizing its views on the report.
- As part of its post-construction wildlife monitoring program, Stirling shall communicate to AEP the corrected mortality rates for birds and bats (using an AEP approved "fatality estimator") and upon the discovery of any carcasses of species-at-risk, must report the discovery to AEP. Stirling must abide by any AEP requirements to implement new mitigation measures to prevent or reduce further mortalities.
- Following completion of the post-construction wildlife monitoring program, Stirling shall notify AEP of the discovery of any carcasses of species-at-risk or high levels of mortality which might be observed near project infrastructure during operation or maintenance and, if required, implement any new mitigation measures that AEP may recommend to prevent or reduce further mortalities.
- AltaLink shall notify AEP of the discovery of any carcasses of species-at-risk or high levels of mortality which might be observed near the transmission facilities during operation or maintenance and, if required, implement any new mitigation measures that AEP may recommend to prevent or reduce further mortalities.
- Stirling shall comply with current applicable reclamation standards at the time of decommissioning. If no legislative requirements pertaining to reclamation are in place at the time of decommissioning, Stirling shall submit a reclamation plan to the Commission for approval.

254. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Stirling Wind Project Ltd. the approval set out in Appendix 1 – Stirling Wind Project – Approval 22546-D02-2019 – April 26, 2019.

255. Pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Stirling Wind Project Ltd. the approval set out in Appendix 2 – New Red Coat 967S Substation – Permit and Licence 22546-D03-2019 – April 26, 2019.

256. Pursuant to Section 18 of the *Hydro and Electric Energy Act*, the Commission approves the connection order and grants Stirling Wind Project Ltd. and AltaLink Management Ltd. the

approval set out in Appendix 3 – Stirling Wind Project Connection – Order 22546-D04-2019 – April 26, 2019.

257. Pursuant to Section 34 of the *Electric Utilities Act*, the Commission approves the Needs Identification Document for the project and grants the Alberta Electric System Operator the approval set out in Appendix 4 – Stirling Wind Project Connection Needs Identification Document – Approval 22546-D05-2019 – April 26, 2019.

258. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants AltaLink Management Ltd. the approval set out in Appendix 5 – Transmission Line 820BL Permit and Licence 22546-D06-2019 – April 26, 2019.

259. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants AltaLink Management Ltd. the approval set out in Appendix 6 – Transmission Line 820L Permit and Licence 22546-D07-2019 – April 26, 2019.

260. The Appendices will be distributed separately .

Dated on April 26, 2019.

Alberta Utilities Commission

(original signed by)

Neil Jamieson
Panel Chair

(original signed by)

Carolyn Hutniak
Commission Member

(original signed by)

Joanne Phillips
Commission Member

Appendix A – Proceeding participants

Name of organization Company name of counsel or representative
Stirling Wind Project Ltd. Terri-Lee Oleniuk
Alberta Electric System Operator Laura Estep
AltaLink Management Ltd. Bryan Hunter
Stirling Landowner Group Daryl Bennett Rod and Robin Conrad Calvin and Peggy Metzger George and Margaret Stanko Joe and Whitney Buntyn
Lethbridge County Lorne Hickey
Brad Cox and Lorraine Thomson-Cox
Solar Krafte Utilities Inc. Jeff Thachuk

Alberta Utilities Commission
Commission panel Neil Jamieson, Panel Chair Carolyn Hutniak, Commission Member Joanne Phillips, Commission Member
Commission staff Giuseppa Bentivegna (Commission counsel) Kim Macnab (Commission counsel) Victor Choy

Appendix B – Oral hearing – registered appearances

Name of organization Name of counsel or representative	Witnesses
Stirling Wind Project Ltd. Terri-Lee Oleniuk Josh Smith	Ben Greenhouse Hemanth Shankar Daniel Tocher Teresa Drew Robert McCallum
Alberta Electric System Operator Laura Estep	Robert Davidson Maz Mazadi Colleen Simpson Laird
AltaLink Management Ltd. Bryan Hunter Hannah Roskey	Kevin Deane Ian Johnstone Mark Van Wyk
Stirling Landowner Group Daryl Bennett	Robin Conrad Rod Conrad Alana Stanko

Appendix C – Summary of Commission directions with required deliverables

This section is intended to provide a summary of those conditions which require follow-up with the Commission; it is not intended to summarize all of the conditions imposed on the applicant. This section is provided for the convenience of readers. In the event of any difference between the directions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

1. Stirling shall submit to the Commission annually a copy of the project’s post-construction wildlife monitoring report along with correspondence from AEP WM summarizing its views on the report Paragraph 194

Appendix D – Abbreviations

Abbreviation	Name in full
AEP	Alberta Environment and Parks
AESO	Alberta Electric System Operator
AIES	Alberta Interconnected Electric System
AltaLink	AltaLink Management Ltd.
CH2M Ltd.	CH2M Hill Energy Canada Ltd.
dBA	A-weighted decibels
DTS	Demand Transmission Service
EE Report	environmental evaluation report
EPP	Environmental Protection Plan
ESA	Environmentally significant areas
kV	kilovolt
McCallum Ltd.	McCallum Environmental Ltd.
MW	megawatt
New York Colony	Hutterian Brethren Church of New York
NIA	noise impact assessment
NID	needs identification document
SL Group	Stirling Landowner Group
Stirling	Stirling Wind Project Ltd.
STS	Supply Transmission Service