



**Renewable Energy Services Ltd.**

**McLaughlin Wind Power Plant and Substation**

**February 23, 2018**

**Alberta Utilities Commission**

Decision 1976-D01-2018

Renewable Energy Services Ltd.

McLaughlin Wind Power Plant and Substation

Proceeding 1976

Applications 1608592 and 1976-A001

February 23, 2018

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## Contents

<b>1</b>	<b>Decision summary</b> .....	<b>1</b>
<b>2</b>	<b>Introduction</b> .....	<b>1</b>
<b>3</b>	<b>Application review process</b> .....	<b>3</b>
<b>4</b>	<b>Discussion</b> .....	<b>4</b>
<b>4.1</b>	<b>Potential impacts</b> .....	<b>6</b>
<b>4.1.1</b>	<b>Social</b> .....	<b>6</b>
<b>4.1.2</b>	<b>Environment</b> .....	<b>8</b>
<b>4.1.2.1</b>	<b>Noise</b> .....	<b>9</b>
<b>5</b>	<b>Findings</b> .....	<b>12</b>
<b>6</b>	<b>Decision</b> .....	<b>17</b>
	<b>Appendix A – Ruling of March 28, 2013</b> .....	<b>18</b>
	<b>Appendix B – Ruling of February 12, 2015</b> .....	<b>19</b>
	<b>Appendix C – Ruling of August 10, 2015</b> .....	<b>20</b>
	<b>Appendix D – Ruling of February 24, 2017</b> .....	<b>21</b>
	<b>Appendix E – Summary of Commission directions</b> .....	<b>23</b>



## **1 Decision summary**

1. In this decision, the Alberta Utilities Commission must decide whether to approve an application from Renewable Energy Services Ltd. (RESL) to construct and operate the McLaughlin Wind Power Project (proposed project). The proposed project would be located approximately eight kilometres east of the town of Pincher Creek, Alberta. After consideration of the record of the proceeding, and for the reasons outlined in this decision, the Commission finds that approval of the proposed project is in the public interest having regard to the social, economic, and other effects of the proposed project, including its effect on the environment.

## **2 Introduction**

2. On June 26, 2012, RESL filed two applications with the Commission, seeking approval to construct and operate the proposed project, pursuant to sections 11, 14 and 15 of the *Hydro and Electric Energy Act*. The power plant application was registered as Application 1608592 and the substation application was registered as Application 1976-A001. The applications were combined and assigned as Proceeding 1976.

3. As discussed in detail below, for much of the time since 2012 the Commission has held the applications in abeyance to allow RESL time to complete the Commission's application requirements set out in Rule 007: *Rules Respecting Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments* and to amend the proposed project. On September 18, 2017, RESL filed final application amendments.

4. The proposed project site is located approximately eight kilometres east of the town of Pincher Creek, Alberta, and approximately two kilometres southeast of the existing Kettles Hill wind power plant.<sup>1</sup>

5. The proposed project consists of the following components:

- a 46.2-megawatt (MW) power plant consisting of 11 wind turbine generators (wind turbines)
- a new 138/34.5-kilovolt (kV) substation, designated as McLaughlin 423S Substation
- a 34.5-kV collector system
- access roads to each wind turbine and the substation

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<sup>1</sup> Power Plant Approval U2007-192, Application 1516549, July 31, 2007.

6. The proposed power plant consists of 11 ENERCON E-126 EP4 wind turbine generators, each rated at 4.2 MW, for a total installed capacity of 46.2 MW. Each of the three-bladed wind turbines has a hub height of 99 metres and a rotor diameter of 127 metres.<sup>2</sup> The wind turbines would be constructed on privately-owned land located in Section 23, Township 6, Range 29, west of the Fourth Meridian and in the east half of Section 22, Township 6, Range 29, west of the Fourth Meridian. The proposed power plant also includes roads to access each wind turbine which can be reached by way of Range Road 292.<sup>3</sup>

7. The proposed 34.5-kV collector system consists of underground distribution lines to collect and transmit electric power from each wind turbine to the proposed substation. The collector system is considered part of the proposed power plant.

8. The purpose of the proposed substation is to raise the 34.5-kV collector system voltage to a 138-kV transmission system voltage to facilitate interconnection of the proposed power plant to the Alberta Interconnected Electric System (AIES). The major equipment at the substation includes:

- one 138/34.5-kV, 50/67/83-megavolt ampere (MVA) transformer
- one 138-kV circuit breaker
- three 34.5-kV feeder breakers

9. The proposed substation would be located in the southwest quarter of Section 22, Township 6, Range 29, west of the Fourth Meridian. Construction of an approximately 80-metre long access road running east from Range Road 293 to the proposed substation would also be required.

10. RESL stated that it chose the final site for the proposed substation to minimize the length of overhead transmission line necessary to connect the substation to the AIES and to minimize the impact on viewpoints from adjacent properties.

11. The proposed substation would connect to the AIES via a new transmission line that would tap into existing transmission line 164L owned by AltaLink Management Ltd. The Commission will consider the application for approval of the construction and connection of the new transmission line in Proceeding 21169 pending the decision in this proceeding.

12. RESL did not provide the estimated cost of the substation because, as a market participant choice facility, all costs will be incurred by RESL.

13. The expected completion date for the proposed project is December 31, 2020.<sup>4</sup>

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<sup>2</sup> Exhibit 1976-X0051, RESL's Responses to AUC letter dated April 21, 2017 (AMENDED APPLICATION), PP15 and PP16.

<sup>3</sup> Exhibit 1976-X0095, Appendix G: Revised Site Plan.

<sup>4</sup> Exhibit 1976-X0114, RESL's Responses to AUC Information Request Round 7, RESL-AUC-2018JAN10-0087.

### 3 Application review process

14. A brief review of the history and evolution of the applications provides context for the discussion that follows.
15. Soon after the initial filing of the applications in 2012, the Commission issued three rounds of information requests to RESL to clarify details of the applications.
16. On February 2, 2013, the Commission issued a notice of applications to all landowners, occupants, and residents within 2,000 metres of the originally proposed project area. No submissions were received by the March 7, 2013, deadline.
17. On March 28, 2013, the Commission ruled that to process the applications further, RESL would need to submit a revised noise impact assessment (NIA). A copy of the ruling is attached as Appendix A.
18. On September 29, 2014, RESL filed an amendment to the proposed project. The amendment included changing the model of wind turbine generator, the location of the proposed substation, and the proposed project's in-service date. RESL also submitted a revised NIA in support of its application amendment as required by Rule 007.
19. On October 28, 2014, and January 6, 2015, the Commission issued information requests to RESL to clarify details of the amended applications and the revised NIA. In accordance with the timelines established by the AUC, RESL submitted information responses on November 18, 2014, and January 22, 2015.
20. On February 12, 2015, the Commission ruled that the requirement in Rule 007 for an applicant to file a Renewable Energy Referral Report (referral report) from Alberta Environment and Parks Wildlife Management (AEP WM) (formerly Alberta Environment and Sustainable Resource Development or ESRD), had not been met. Specifically, given the amendment of the applications on September 29, 2014, there was no longer a current AEP WM referral report for the proposed project. As a result, the Commission placed the applications in abeyance until RESL submitted an updated AEP WM referral report.<sup>5</sup> A copy of the ruling is attached as Appendix B.
21. On two occasions, RESL asked the Commission to continue processing its applications notwithstanding the absence of an updated AEP WM referral report. The Commission considered RESL's requests and issued two rulings dated August 10, 2015, and February 24, 2017. For the reasons set out in those rulings (attached as Appendix C and Appendix D, respectively), the Commission denied RESL's requests and held that the applications would not be processed until an up-to-date AEP WM referral report was filed.
22. The applications remained in abeyance from February 12, 2015, to April 7, 2017, when RESL submitted an updated AEP WM referral report.
23. As part of its April 7, 2017 submission, RESL informed the Commission of further amendments to the proposed project. Those amendments included changing the wind turbine model, reducing the number of wind turbines, and altering the wind turbine layout. RESL further

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<sup>5</sup> Exhibit 1976-X0013.

advised that it was finalizing a noise study report for the new wind turbine layout, arranging an open house, waiting for an evaluation from NAV CANADA and waiting for approval from Transport Canada.

24. On April 21, 2017, the Commission issued a process letter advising RESL that it would resume processing the applications once Rule 007 requirements were satisfied, given that a number of supporting documents had to be updated to reflect the project amendments.

25. On September 18 and 19, 2017, RESL submitted its amended applications including updated project details, updated project maps, an updated NIA, and a summary of its updated participant involvement program.

26. On October 20, 2017, the Commission issued a notice of application amendments to all landowners, occupants, and residents within 2000 metres of the amended project area. No submissions were received in response to the notice.

27. On October 20, 2017, the Commission also issued an information request to RESL for clarification of details in the amended applications. On November 6, 2017, RESL submitted its information response.

28. On November 14, 2017, the Commission sent a copy of the notice of application amendments to a landowner who was not included in the original mail out. No response submission was received.

29. The Commission issued further information requests to RESL on December 5, 2017, and January 10, 2018. On December 15, 2017, and January 24, 2018, RESL submitted its information responses to the AUC.

30. As no submissions were received in response to the notice of application amendments, the Commission determined that its decision or order would not directly and adversely affect the rights of a person pursuant to Section 9 of the *Alberta Utilities Commission Act* and on that basis, an oral hearing was not required.

31. The Commission considers the record for the proceeding closed on January 24, 2018, upon the filing of RESL's last information response.

#### **4 Discussion**

32. In support of its applications, RESL submitted that the proposed project is in-line with the climate change, clean air and energy policies of the provincial and the federal governments because the proposed project would reduce the need for fossil-fuel based generation. RESL also stated that the proposed project would benefit the local economy as RESL anticipated that it would inject approximately \$25 million into the local communities through the purchase of construction materials, the potential upgrade of roads, and employment opportunities. RESL estimated that 30 to 40 workers, on average, would participate in the construction of the proposed project, should it be approved.



33. RESL also provided the details of approvals for the proposed project granted by other agencies. Specifically, RESL noted a development permit from the Municipal District of Pincher Creek for the proposed project. The proposed project lands were re-designated from “Agriculture – A” to “Wind Farm Industrial – WFI” by the municipal district.<sup>6</sup> RESL confirmed that it had consulted with the municipal district regarding the proposed project amendments<sup>7</sup> and that the development permit has been extended to March 7, 2020.<sup>8</sup>

34. RESL submitted an approval obtained from Transport Canada for the proposed project<sup>9</sup> and provided a letter from NAV CANADA<sup>10</sup>, emails from Environment Canada<sup>11</sup> and emails from Alberta Transportation.<sup>12</sup> The letter and emails indicated that RESL had received no objections to the proposed project.

35. RESL identified that it had contracted Lifeways of Canada Limited (Lifeways) to do a historical resource impact assessment on the four quarters of land where the original wind turbine layout was proposed.<sup>13</sup> The assessment found one site of regional significance located in the northeast quarter of Section 23, Township 6, Range 29, west of the Fourth Meridian. Lifeways did not recommend any mitigation measures as it did not anticipate any direct impacts to the site.

36. RESL received *Historical Resources Act* clearance for the originally proposed project in 2012. RESL confirmed that it had applied to Alberta Culture and Tourism for *Historical Resources Act* clearance for the amended project and did not expect any issues since the expanded project lands were on cultivated land.<sup>14</sup>

37. RESL explained that it conducted a participant involvement program to inform stakeholders of the proposed project and provide an opportunity for stakeholders to raise concerns. The program consisted of information packages, personal consultations and public information sessions. The original participant involvement program in 2012 consisted of project information packages hand delivered to residents and landowners within two kilometres of the proposed project boundary, and public information sessions.

38. The main concerns raised through the participant involvement program in 2012 were about the noise levels of the wind turbines, visual impacts on nearby houses and property value impacts. RESL stated that most of the concerns were raised by joint landowners Margo and Alex Russell (the Russells) who reside approximately 1.5 kilometres south of the proposed project. Additionally, one resident of the Piikani First Nation expressed concern about archeological resources.

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<sup>6</sup> Exhibit 0030.00.RESL-1976, Attachment 3 - MDPC Confirmation of Rede[s]ignation of lands from Agriculture and Exhibits 1976-X0087 and 1976-X0088.

<sup>7</sup> Exhibit 1976-X0086, RESL's Responses to AUC Information Request Round 6, RESL-AUC-2017OCT20-0064.

<sup>8</sup> Exhibit 1976-X0048, 2017-03-08 Letter to RESL McLaughlin Wind Farm Timeline Suspension.

<sup>9</sup> Exhibit 1976-X0079, Transport Canada Approval TC #2017-641.

<sup>10</sup> Exhibit 1976-X0054, Attachment 1: NavCan – Transport Canada Approval.

<sup>11</sup> Exhibit 1976-X0089, Appendix C: E-mail messages to-from Environment Canada.

<sup>12</sup> Exhibit 0007.00.RESL-1976, Attachment 6 – Alberta Transportation e-mail correspondence.

<sup>13</sup> Exhibit 0064.00.RESL-1976, Attachment 22 – HRIA Final Report.

<sup>14</sup> Exhibit 1976-X0086, RESL's Responses to AUC Information Request Round 6, RESL-AUC-2017OCT20-0067.

39. RESL consulted with the Russells and committed to plant a shelterbelt of trees on their property to help minimize noise and visual impact concerns. With this commitment, RESL concluded that it had addressed all of the Russells' concerns.

40. RESL indicated that the archeological impact concerns of the Piikani First Nation member had been previously addressed with an elder from the Piikani First Nation through a field visit of the originally proposed project lands on December 9, 2011.

41. On April 24, 2017, RESL mailed an updated project information package to notify residents and landowners within two kilometres of the final proposed project site. The package provided details on the final model of wind turbine, locations of the 11 wind turbines, the expected project schedule, and contact information for RESL. RESL held a public open house on May 11, 2017, and stated that no concerns were voiced during the open house.

42. RESL stated that no concerns were raised about the proposed project amendments and it was not aware of any outstanding stakeholder concerns.<sup>15</sup>

#### **4.1 Potential impacts**

43. The applications and supporting documents detailed the potential social and environmental (including noise) impacts of the proposed project, as well as the mitigation measures that RESL proposed to implement to minimize those impacts.

##### **4.1.1 Social**

44. RESL stated that the potential social impacts of the proposed project include residential, visual, health, agricultural and commercial impacts.

45. RESL stated that the area surrounding the proposed project is relatively uninhabited, with only a few dwellings. There are no dwellings within the proposed project site. Access to the proposed project area would be via small paved and unpaved municipal roads that stem from larger municipal roads leading to and from the town of Pincher Creek.

46. RESL stated that while visual impacts of wind energy projects are often raised as an issue, public opinion on aesthetics of wind turbines is divided; some see them as beautiful structures while others feel that they disrupt natural landscapes. RESL asserted that the location of the turbines, the size of the proposed project and the surrounding visual setting are key elements in determining the significance of a visual effect.

47. RESL asserted that the visual effects of the proposed project will not be significant because there will be a low degree of visibility of the wind turbines due to separation distances from dwellings being greater than 1.2 kilometres. As well, rolling topography and man-made structures are expected to block views of the wind turbines in some locations. RESL acknowledged that the wind turbines will be visible from open areas such as from roads running parallel to agricultural fields and from some dwellings. RESL provided visual simulations of the proposed project from five different viewpoints.<sup>16</sup>

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<sup>15</sup> Exhibit 1976-X0051, RESL's Responses to AUC letter dated April 21, 2017 (AMENDED APPLICATION), PP20.

<sup>16</sup> Exhibits 1976-X0062 to 1976-X0066.

48. RESL also provided information on the potential for the proposed wind turbines to cause shadow flicker. Shadow flicker is the alternating light intensity produced by a wind turbine as the rotating blade casts shadows on the ground and stationary objects, such as the window of a residence. No flicker occurs when the wind turbine is not rotating or when clouds or fog obscure the sun. To assess if shadow flicker would impact dwellings within two kilometres of any proposed wind turbine, RESL contracted AL-PRO GmbH & Co. KG (AL-PRO) to complete a shadow flicker assessment for the proposed project.<sup>17</sup>

49. AL-PRO's assessment, using modelling software, found that six of the nine dwellings are not expected to experience any shadow flicker. The model predicted that the other three dwellings could experience up to 15 minutes per day and between 5.3 and 8.3 hours per year of shadow flicker. However, AL-PRO asserted that the results represent a worst-case scenario and that actual impacts, which would vary from year to year, are expected to be much lower than estimated.

50. Frequencies below 20 hertz are commonly referred to as infrasound. Concerning the potential for health impacts, RESL asserted that there is no scientific evidence that infrasound from wind turbines has an impact on human health. To support its assertion, RESL cited a number of studies by organizations and independent researchers on page 96 of the Environmental Impact Statement.<sup>18</sup>

51. RESL stated that farming is the main land use in the proposed project area and the privately owned land where the proposed wind turbines and substation would be located is dominated by agricultural uses, including a combination of cropland (mainly hay), and pasture. RESL expects agricultural activities to continue on these lands in conjunction with the proposed project.

52. Construction activities associated with the proposed project are not expected to increase traffic volume significantly. RESL stated it would inform local and regional authorities of its transportation plan to avoid any unexpected congestion problems. RESL also explained that unpaved municipal roads used to access the proposed project area would be upgraded, if necessary, to comply with standards for wind energy project construction. After construction, all municipal roads used for the proposed project would be inspected and repaired if damaged.

53. RESL identified that the potential impacts of the proposed project on commercial operations include impacts on communication and navigation systems. A buried fibre optic cable is located in the southwestern portion of the proposed project area. RESL confirmed that Telus Communications has been informed of the proposed project, including the amendments, and has no concerns.

54. RESL contracted Nortek Resource Solutions Inc. to determine if the proposed project might impact existing radio, telecommunication and radar systems. The assessment<sup>19</sup> found that the proposed project was outside of the recommended consultation zone for all systems except over-the-air television reception. The assessment indicated that a number of small localities and the town of Pincher Creek are located within the recommended 15-kilometre consultation zone. The assessment stated "the project proponents are committed to mitigating confirmed negative

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<sup>17</sup> Exhibit 1976-X0102, Appendix N: Shadow Flicker Impact Assessment.

<sup>18</sup> Exhibit 0009.00.RESL-1976, Environment Impact Assessment Volume 1 (Federal 2010).

<sup>19</sup> Exhibit 1976-X0101, Appendix M: Electromagnetic Interference Report.

impacts if they occur as a result of developing the proposed wind project. RESL will develop a mitigation policy and procedure as part of their project planning process.”

#### 4.1.2 Environment

55. RESL retained Bear Tracks Environmental Services and McCallum Environmental Ltd. to conduct field surveys which included fall migration surveys, spring migration surveys, winter wildlife surveys and a wildlife assessment and rare plant survey.<sup>20</sup> RESL also retained Anatum Ecological Consulting Ltd. to complete a bat pre-construction assessment.<sup>21</sup> The resulting reports are on the record of the proceeding.

56. As stated above, a revised AEP WM referral report, dated March 27, 2017, was filed to support the amended application.<sup>22</sup> AEP WM identified the proposed project site as having a moderate risk to wildlife and wildlife habitat with concerns primarily related to the results of the pre-assessment bird and bat wildlife surveys. RESL committed to a post-construction monitoring program to determine the effect of the operation of the proposed project on birds and bats to mitigate the risks to wildlife. Specifically, RESL committed to conduct post-construction monitoring for three years, and include carcass searches with searcher efficiency trials, coupled with carcass persistence trials at all 11 wind turbines. Results of the post-construction monitoring program would be submitted to AEP WM on an annual basis.<sup>23</sup>

57. RESL submitted that all pre-development wildlife surveys had been conducted, and AEP WM’s referral report and subsequent correspondence confirm that the pre-construction wildlife monitoring meets AEP WM’s requirements. With respect to direct wildlife impacts, RESL indicated that the proposed project will maintain all setback requirements identified by AEP WM. RESL confirmed that in the event of delays to the proposed project, it will work with AEP WM and update any studies if necessary.<sup>24</sup>

58. RESL prepared a project-specific environmental protection plan that itemizes and describes the mitigation measures that it will take to eliminate or reduce the potential environmental effect of the proposed project.<sup>25</sup> AEP WM found that the mitigation measures identified met the current policy of minimizing disturbance on native grasslands.<sup>26</sup> RESL stated that the proposed project would comply with the *Principles for Minimizing Surface Disturbance in Native Prairie and Parkland Areas* by siting wind turbines and all associated infrastructure on cultivated lands.<sup>27</sup>

59. While the proposed project is located within the boundaries of the South Saskatchewan Regional Plan, it is located entirely on private land. RESL submitted that the South Saskatchewan Regional Plan does not prescribe how to use and manage private land and is therefore not applicable to the proposed project. However, given that the proposed project is a

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<sup>20</sup> Exhibit 1976-X0103 – Exhibit 1976-X106, Environment Study Reports.

<sup>21</sup> Exhibit 1976-X0033, McLaughlin 2015 Bat Pre-Construction Assessment Report.

<sup>22</sup> Exhibit 1976-X0047, McLaughlin\_AEP revised referral\_28March2017.

<sup>23</sup> Exhibit 1976-X0115, Appendix A: Updated Environmental Protection Plan, page 16.

<sup>24</sup> Exhibit 1976-X0047, McLaughlin\_AEP revised referral\_28March2017, page 5.

<sup>25</sup> Exhibit 1976-X0115, Appendix A: Updated Environmental Protection Plan.

<sup>26</sup> Exhibit 1976-X0047, McLaughlin\_AEP revised referral\_28March2017, page 5.

<sup>27</sup> Exhibit 1976-X0107, Appendix P: Environment Update, page 2.

renewable energy project, RESL stated that it will align with the objectives outlined in the South Saskatchewan Regional Plan.<sup>28</sup>

#### 4.1.2.1 Noise

60. Given that an NIA is required for every change in wind turbine technology or modification of the wind turbine layout, four NIAs are on the record of this proceeding. RESL filed the first NIA with its original project application on June 27, 2012, completed by GL Garrad Hassan Canada Inc. (GL GH). On September 29, 2014, RESL submitted a second NIA based on its amended project, also completed by GL GH. Because RESL filed further application amendments on September 18, 2017, RESL filed a third NIA, completed by AL-PRO Wind Energy Consulting Canada Inc. (AL-PRO). In response to information requests, RESL filed a fourth NIA for receptor NR12, completed by AL-PRO, on December 14, 2017.

61. Only the NIAs applicable to the proposed project are discussed in this decision. These are the NIA filed on September 18, 2017, (2017 NIA)<sup>29</sup> and the NIA submitted for receptor NR12 (NIA for NR12).<sup>30</sup>

62. The 2017 NIA identified the proposed project's 11 ENERCON E-126 EP4 wind turbines and, among other things, stated that the wind turbines would be equipped with trailing edge serrations on the rotor blades. The turbine manufacturer provided sound data for the proposed wind turbines. All proposed wind turbines were modelled as operating in Mode 0s (full operation mode) with a maximum sound power level of 104.6 dBA occurring at a wind speed of 10 metres per second (m/s) measured at a height of 10 metres above ground.

63. The 2017 NIA includes the proposed substation, as well as the existing Kettles Hill wind power plant (Kettles Hill Wind Farm), which is located approximately 500 metres north of the proposed project, and consists of 35 Vestas V80-1.8 MW wind turbines and two step-up transformers.

64. The 2017 NIA states that the applicable permissible sound levels are 50 dBA  $L_{eq}$  daytime and 40 dBA  $L_{eq}$  nighttime at all receptor locations in the study area. The 2017 NIA also identifies the predicted cumulative sound levels of the proposed project under three scenarios at nine receptor locations. Those receptor locations represent dwellings within 2.0 km of the proposed project.

65. The first of those scenarios, presented in Table 5-2 of the 2017 NIA, shows predicted cumulative sound levels with no uncertainty added to either the proposed project or the existing Kettles Hill Wind Farm. The second scenario, presented in Table 5-3 of the 2017 NIA, shows the predicted cumulative sound levels with an uncertainty value of 1.1 dBA added to the sound levels for the proposed project. This uncertainty value was taken from an acoustic noise measurement report on the ENERCON E-126 EP4 wind turbine. In each of the first and second scenarios, the cumulative sound levels are predicted to be below the daytime and nighttime permissible sound level at all receptor locations assessed.

66. The third scenario, presented in Table 5-4 of the 2017 NIA, shows the predicted cumulative sound levels with an uncertainty value of 1.1 dBA added to the sound level of the

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<sup>28</sup> Exhibit 1976-X0086, RESL's Responses to AUC Information Request Round 6 (November 6, 2017).

<sup>29</sup> Exhibit 1976-X0070, Noise Impact Assessment, June 2017.

<sup>30</sup> Exhibit 1976-X0116, Noise Impact Assessment on Receptor NR12.

proposed project and an uncertainty value added to the sound level value of the existing Kettles Hill Wind Farm. The uncertainty value for the Kettles Hill Wind Farm was taken from the noise curve diagram for the Vestas V80-1.8 MW wind turbines, which indicated the accuracy of the sound power level for these wind turbines is +/- 2 dBA on the calculated noise values.

67. In the third scenario, the cumulative sound level was predicted to meet the daytime and nighttime permissible sound levels at all of the receptor locations assessed except at receptor location NR12. The cumulative sound level at receptor location NR12 was predicted to exceed the nighttime permissible sound level by a margin of 1.0 dBA. For reference, Table 5-4 of the 2017 NIA is reproduced below:

Table 1. Predicted sounds levels including ambient, existing (with uncertainty) and proposed (with uncertainty) wind farms for each receptor<sup>31</sup>

Receptor	Ambient sound level (dBA)	Kettles Hill contribution, including 2.0 dBA uncertainty	McLaughlin contribution, including 1.1 dBA uncertainty	Cumulative nighttime sound level (dBA)	Nighttime PSL <sup>32</sup> (dBA)	Rule 012 Compliance
NR01	35.0	37.2	28.5	39.6	40	Yes
NR04	35.0	26.6	32.3	37.3	40	Yes
NR05	35.0	26.0	28.5	36.3	40	Yes
NR06	35.0	25.5	27.8	36.1	40	Yes
NR09	35.0	36.8	29.7	39.5	40	Yes
NR10	35.0	36.7	29.4	39.4	40	Yes
NR11	35.0	37.6	29.0	39.8	40	Yes
<b>NR12</b>	<b>35.0</b>	<b>39.4</b>	<b>28.1</b>	<b>41.0</b>	<b>40</b>	<b>NO</b>
NR13	35.0	29.8	26.1	36.6	40	Yes

68. Regarding the third scenario, RESL explained that in the 2017 NIA, AL-PRO incorporated uncertainty values for both the existing Kettles Hill Wind Farm and the proposed project to ensure a conservative or worst-case result was generated. The model also assumed that receptor NR12 is downwind of the existing wind turbines which resulted in a predicted sound level that is higher than what is expected since receptor NR12 is actually upwind.

69. In response to round six information requests from the Commission concerning the exceedance of the nighttime permissible sound level at receptor NR12 in scenario three, if the actual sound impacts are a concern to residents, RESL stated that it would implement a post-construction sound monitoring program to verify the measured sound pressure level at the complaint receptor. If the measured levels exceed the nighttime permissible sound level, sound reduction operating modes would be used in some of the wind turbines to comply with Rule 012: *Noise Control*.

70. The Commission clarified in round seven information requests to RESL that RESL must demonstrate compliance with the permissible sound level at all potentially affected dwellings

<sup>31</sup> Exhibit 1976-X0070, Noise Impact Assessment, June 2017.

<sup>32</sup> Permissible sound level.

“whether they are located inside or outside the 1.5 kilometre boundary around the facility property.”<sup>33</sup>

71. In response to the Commission’s round seven information requests, RESL commissioned AL-PRO to complete a detailed NIA to address the potential cumulative noise impacts on receptor NR12. AL-PRO stated the objectives of the NIA for NR12 were to clarify the noise impacts at receptor NR12 from the proposed project, to validate compliance with Rule 012 and to recommend mitigation measures to ensure compliance with the nighttime permissible sound level (40 dBA) specified in Rule 012.

72. The NIA for NR12 assumed the existing Kettles Hill Wind Farm did not exceed the permissible sound level of 40 dBA nighttime at receptor NR12. The maximum sound level generated by the Kettles Hill Wind Farm was thus assumed to be 38.3 dBA.<sup>34</sup> The NIA for NR12 stated that this differed from the 2017 NIA, where the noise impact of the Kettles Hill Wind Farm wind turbines and substation were modelled individually based on manufacturer data. RESL used this different approach in the NIA for NR12 after ENMAX Power Services Corporation (ENMAX Power), owner of the Kettles Hill Wind Farm, declined to share information on the modelled sound power levels and their impacts on respective receptors for each individual Kettles Hill Wind Farm wind turbine.

73. The NIA for NR12 explained that the proposed project wind turbines have two reduced operating modes (Mode Is and Mode IIs) designed to reduce the sound power level and in the NIA for NR12, operating Mode IIs was selected with a maximum sound power level of 103.2 dBA. The results of the NIA for NR12 indicated that the worst-case cumulative sound level at receptor NR12 was 40.1 dBA. The modelling approach used in the NIA for NR12 resulted in a lower sound level at receptor NR12 than the previous 2017 NIA which reported a cumulative sound level of 41.0 dBA at this receptor location.

74. The Commission asked a further round of information requests, round eight, to RESL requesting clarification of details of the NIA for NR12 and further information with respect to the noise mitigation plan that RESL was committing to implement.<sup>35</sup>

75. RESL responded by stating that it had reviewed Example 3 of Rule 012 and had applied the methodology demonstrated in that example to consider the cumulative noise effects at receptor NR12. As such, RESL determined that “there is no net increase in noise level at NR12.”<sup>36</sup> RESL stated that “by applying the no net increase of 0.4 dBA which results in a maximum threshold of value of 40.4 dBA, all scenarios [in the NIA for NR12] are compliant with AUC Rule 012.”<sup>37</sup>

76. In its information request response, RESL provided an additional cumulative sound level assessment (Table 5.2b) that was conducted with the wind turbines operating in full operation mode (Mode 0s). Table 5.2b indicated that the worst-case cumulative sound level at receptor NR12 was 40.2 dBA. RESL stated that this demonstrated that, with the application of no net

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<sup>33</sup> Exhibit 1976-X0114, RESL’s Response to AUC Information Request Round 7, PDF page 4.

<sup>34</sup> 40 dBA (nighttime permissible sound level) – 35 dBA (ambient sound level) = 38.3 dBA (maximum Kettles Hill Wind Farm sound level contribution).

<sup>35</sup> Exhibit 1976-X0120, AUC Information Request – Round 8.

<sup>36</sup> Exhibit 1976-X0122, RESL’s Responses to AUC Information Request Round 8, PDF page 4.

<sup>37</sup> Exhibit 1976-X0122, RESL’s Responses to AUC Information Request Round 8, PDF page 4.

increase, the proposed project would still be in compliance with Rule 012 when operating in full operation mode. For comparison, RESL reproduced the results of the NIA for NR12 (Table 5.2a), which assessed the proposed project turbines operating in a reduced operation mode (Mode IIs). For reference, a portion of Table 5.2a and Table 5.2b are compared below.

Table 2. Comparison of cumulative noise impacts on receptor NR12 in different operating modes (Scenario 10 – Maximum sound level contribution from Kettles Hill Wind Farm)

Cumulative sound level assessment	Ambient sound level (dBA)	Kettles Hill contribution, assuming compliance with PSL (dBA)	McLaughlin contribution, including 1.1 dBA uncertainty (dBA)	Cumulative sound level (dBA)
Table 5.2b, McLaughlin Wind Project Operating in Mode 0s (full operation mode)	35.0	38.3	27.4	40.2
Table 5.2a, McLaughlin Wind Project Operating in Mode IIs (reduced operation mode)	35.0	38.3	26.2	40.1

77. RESL concluded that the results of Tables 5.2a and 5.2b demonstrate that both operating modes of the proposed wind turbines (Mode 0s and IIs) are compliant with Rule 012 because they result in no net increase to the existing sound level at receptor NR12.

78. With respect to the noise mitigation plan outlined in the NIA for NR12, RESL stated that as no net increase in noise level had been calculated at receptor NR12, it was unnecessary to operate the wind turbines in a reduced operating mode. RESL also stated that, in light of the assessment demonstrating there would be no net increase in the sound level at receptor NR12 from the proposed project, and due to the conservative nature of the noise modelling, a post-construction comprehensive sound level survey at receptor NR12 should not be required unless there is a noise complaint.

## 5 Findings

79. In considering the applications, the Commission reviewed the *Hydro and Electric Energy Act*, the pertinent provisions of which are found in subsections. 2(a), 2(b), 2(c), 11 and 19(1).

80. The Commission has also considered:

- (a) Whether the applications meet all the requirements of Rule 007 and Rule 012.
- (b) Whether the approval of the proposed project is in the public interest having regard to the social and economic effects of the development and the effects of the development on the environment, in accordance with Section 17 of the *Alberta Utilities Commission Act*.

81. Section 17 of the *Alberta Utilities Commission Act* states:

**17(1)** Where the Commission conducts a hearing or other proceeding on an application to construct or operate a ... power plant ... under the *Hydro and Electric Energy 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 ... power plant... is in the public interest, having regard to the social and economic effects of the ... plant... and the effects of the ... plant... on the environment.



82. In Decision 2001-111,<sup>38</sup> the Commission's predecessor, the Alberta Energy and Utilities Board, described how it considers the public interest in relation to an application for a power plant:

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.<sup>39</sup>

83. The Commission considers that this approach to assessing whether a proposed project is in the public interest is consistent with the purpose and intent of the statutory scheme and it continues to provide an effective framework for the assessment of wind energy projects.

84. As indicated above, applications to the Commission for the construction and operation of power plants and substations, must comply with the Commission's Rule 007. The Commission must be further satisfied that the proposed project is in the public interest having regard to the social and economic effects of the development and the effects of the development on the environment. This includes consideration of whether an applicant has the approvals required under any applicable provincial or federal legislation and/or has proposed reasonable mitigation measures to address any potential impacts of the proposed project. The applicant must also meet the requirements set out in Rule 012. The Commission's findings in relation to each of these requirements are detailed below.

85. Under Rule 007, an applicant must provide information that includes technical and functional specifications, information on public consultation, and environmental and land-use information including an NIA. The Commission finds that RESL has complied with the application requirements set out in Rule 007.

86. The Commission accepts the participant involvement program conducted by RESL and expects RESL to fulfill the commitment made to the Russells.<sup>40</sup> The Commission finds that there are no outstanding public or industry objections or concerns, as there were no objections filed in response to the Commission's notice of application amendments.

87. The Commission notes that there are no dwellings within the proposed project area and the nearest dwelling to any of the wind turbines is located 1200 metres away. The Commission

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<sup>38</sup> Decision 2001-111: EPCOR Generation Inc. and EPCOR Power Development Corporation – 490-MW Genesee Power Plant Expansion, Application No. 2001173, December 21, 2001.

<sup>39</sup> Decision 2001-111, page 4.

<sup>40</sup> Exhibit 1976-X0086, RESL's Responses to AUC Information Request Round 6, PDF page 10.

considers that visual impacts have been minimized as much as possible because the collector lines will be located underground. The Commission finds that there is no evidence on the record that the proposed project will have an impact on human health. To the extent that potential social impacts have been identified, the Commission is satisfied that any such impacts can be reasonably mitigated through the commitments made by RESL on the record of this proceeding and the Commission has relied on those commitments and representations in its assessment of whether the proposed project is in the public interest.

88. Regarding approvals required by provincial and federal legislation, the Commission regards compliance with the regulatory requirements administered by other public or government departments or agencies to be an important consideration when deciding if potential adverse impacts are acceptable and approval of a project is in the public interest. The Commission notes evidence of the permit and approval for the proposed project granted by the Municipal District of Pincher Creek and Transport Canada, respectively, were filed on the record of this proceeding. RESL also filed a letter from NAV CANADA and emails from Environment Canada and Alberta Transportation indicating that there were no objections to the proposed project.

89. The Commission has also considered that Alberta Culture and Tourism had previously approved the prior version of the proposed project in four of the seven quarter sections where the proposed project will be located and that RESL has submitted an application for the three sections that were added as a result of the proposed project amendment. In its application, RESL confirmed that the proposed project requires an approval from Alberta Culture and Tourism under the *Historical Resources Act* in order to operate. The Commission notes that RESL must comply with any avoidance or mitigation requirement identified by Alberta Culture and Tourism to receive approval under the *Historical Resources Act*.

90. As well, the Commission accepts Lifeways recommendation that no measures are required for historical resource impact mitigation. No direct impacts to the identified site of regional significance are expected to occur since the proposed wind turbines, collector lines, and access roads will all be located south of the identified site.

91. As to the proposed project's environmental impacts, the Commission notes that the siting of the proposed project on cultivated lands reduces the potential for adverse environmental impact because the lands have been previously disturbed. Nevertheless, the potential for adverse environmental effects from construction and operation of the proposed project can be reasonably mitigated in part through the implementation of the mitigation measures outlined in the Environmental Protection Plan<sup>41</sup> and the commitments and representations made by RESL on the record of this proceeding on which the Commission has relied.

92. In addition, the Commission finds that the imposition of certain conditions is warranted to protect the environment should the Commission approve the proposed project. As such, the Commission would impose conditions requiring RESL to maintain current wildlife field surveys until the proposed project is commissioned; to implement mitigation measures recommended by AEP WM; to complete a minimum of three years of post-construction bird and bat mortality surveys and submit the survey results to AEP WM annually; and to submit annual summaries to the Commission summarizing its consultation efforts with AEP WM and identifying any AEP WM recommended mitigation measures.

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<sup>41</sup> Exhibit 1976-X0115, Appendix A: Updated Environmental Protection Plan.

93. If the location of any wind turbine supporting structure has to be relocated more than 50 metres from the coordinates stated in the amended application, RESL must re-apply to the Commission for approval to relocate the structure prior to construction. Additionally, for any relocation within 50 metres of a supporting structure that further impacts a feature to which AEP WM setbacks or Alberta Culture and Tourism avoidance or mitigation requirements apply, RESL must immediately consult with the appropriate agency and implement any additional mitigation measures specified.

94. The purpose of Rule 012 is to ensure that noise from a proposed facility, measured cumulatively with noise from other energy-related facilities, does not exceed the permissible sound levels calculated in accordance with the rule. As part of a power plant application, Rule 007 requires an applicant to provide an NIA, in accordance with the current Rule 012.

95. The purpose of an NIA is to predict the expected sound level emanating from a facility as measured 15 metres from the most impacted dwelling(s). It also identifies what the permissible sound level is and how it was calculated. The permissible sound level is the maximum daytime or nighttime sound level, as determined in Table 1 of Rule 012, at a point 15 metres from the dwelling(s), in the direction of the facility. As mentioned earlier in this decision, for the proposed project, the permissible sound level values are 50 dBA  $L_{eq}$  daytime and 40 dBA  $L_{eq}$  nighttime. For the reasons that follow, the Commission accepts the NIAs submitted in support of the proposed project.

96. The Commission accepts the cumulative sound level assessment in Table 5-4 of the 2017 NIA which indicates that, with the exception of receptor NR12, the daytime and nighttime permissible sound level requirements will be met at all of the receptor locations assessed with the wind turbines operating in full operation mode (Mode 0s).

97. With respect to receptor NR12, the Commission accepts the NIA for NR12 and the cumulative sound level assessment provided in Table 5.2b in response to the Commission's round eight information request<sup>42</sup>. That assessment demonstrates compliance at receptor NR12 on the basis that there is no net increase to the existing sound level resulting from the proposed project. This result was determined by adding the noise contribution of the proposed project, in full operation mode, to the existing Kettles Hill Wind Farm noise contribution, assuming that the existing Kettles Hill Wind Farm complies with the permissible sound level of 40 dBA  $L_{eq}$  nighttime. The resulting value was then compared to the nighttime permissible sound level.

98. The Commission considers this a reasonable methodology. Rule 012, states that where there is no noise data available for an existing energy-related facility, the existing energy-related facility may be assumed to be compliant with the permissible sound level so that it meets a noise level of 40 dBA  $L_{eq}$ . The Commission accepts RESL's evidence that ENMAX Power refused to provide RESL with updated noise information for the facility and there is no other noise information concerning the existing Kettles Hill Wind Farm on the record. The assumption that the Kettles Hill Wind Farm is in compliance with the permissible sound level is therefore reasonable in the circumstances of this proceeding.

99. As a result, Table 5.2b reasonably relies on that assumption and as previously noted, it demonstrates that with the proposed project operating in full operation mode, the cumulative sound level at NR12 is predicted to be 40.2 dBA  $L_{eq}$  nighttime. Pursuant to Rule 012, "no net

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<sup>42</sup> Exhibit 1976-X0122, RESL's Response to AUC Information Request Round 8, PDF page 6.

increase” in noise level exists where the total noise impact, including that from the proposed facility, will not result in an increase over the permissible sound level of more than 0.4 dB (i.e., will not exceed 40.4 dBA). As the predicted cumulative sound level at receptor NR12 is 40.2 dBA  $L_{eq}$  nighttime the Commission finds that the proposed project demonstrates no net increase in noise level at receptor NR12.

100. As previously stated, the Commission accepts the cumulative sound level assessment provided in Table 5.2b. It indicates that with the proposed project operating in full operation mode there will be no net increase in noise level at receptor NR12 and as such, the proposed project is predicted to be in compliance with the permissible sound level requirements of Rule 012. In view of the foregoing, there is no reasonable basis to require RESL to operate its proposed wind turbines in a reduced operating mode. The Commission finds that the noise mitigation plan proposed in the NIA for NR12 is not required.

101. As noted above, the Commission finds that the proposed project, including receptor NR12, is in compliance with the permissible sound level requirements of Rule 012. However, the Commission notes RESL’s commitment to complete a post-construction comprehensive sound level survey to verify that the measured sound levels at receptor NR12 comply with the permissible sound levels of Rule 012<sup>43</sup> in the event that the actual sound levels are a concern to the residents of the dwelling associated with receptor NR12. In the case of a complaint, RESL must notify the Commission. At that time, a new proceeding will be created to consider the complaint and the results of the post-construction noise survey. The Commission’s decision in that proceeding may include directions to implement noise mitigation measures.

102. For the reasons discussed, the Commission finds that approval of the proposed project is in the public interest, in accordance with Section 17 of the *Alberta Utilities Commission Act*.

103. The Commission’s decision to approve the proposed project is subject to the following conditions:

- (a) Within 60 days prior to the commencement of construction, RESL shall file a letter with the AUC confirming that the applicable wildlife field surveys remain current and will remain current (i.e., no more than two years old) until the proposed project is commissioned.
- (b) RESL shall implement any additional mitigation measures recommended by AEP WM should any new wildlife features or issues be identified during completion of updated wildlife surveys. Prior to construction, RESL shall submit a letter to the Commission confirming that it has consulted with AEP WM regarding additional mitigation measures. The letter from RESL shall identify any additional mitigation measure(s) recommended by AEP WM and confirm whether RESL has implemented the mitigation measure(s). If RESL elects not to implement any mitigation measure recommended by AEP WM, the Commission will determine whether further process is required.
- (c) RESL shall complete a minimum of three years of post-construction bird and bat mortality surveys, and submit the results of the surveys annually to AEP WM.

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<sup>43</sup> Exhibit 1976-X0086, RESL’s Responses to AUC Information Request Round 6, PDF page 21.

- (d) RESL shall submit a letter to the Commission annually summarizing its notification and consultation efforts with AEP WM and identify any AEP WM recommended mitigation measures or directions resulting from post-construction bird and bat mortality surveys and monitoring. If RESL elects not to implement any mitigation measure recommended by AEP WM it must notify the Commission and the Commission will determine whether further process is required.

104. In approving the proposed project the Commission has considered and relied upon the commitments made by RESL in relation to the project, including those discussed in paragraphs 54, 91 and 101. The Commission expects RESL to follow through on all commitments made during this proceeding. Should the Commission receive a complaint that RESL has not adhered to its commitments, the Commission may initiate a review in accordance with Rule 016: *Review of a Commission Decision*.

## **6 Decision**

105. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the power plant application, as amended on September 18, 2017, and grants Renewable Energy Services Ltd. the power plant approval set out in Appendix 1 – Approval 1976-D02-2018 to construct and operate the McLaughlin Wind Power Plant.

106. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves the substation application, as amended on September 18, 2017, and grants Renewable Energy Services Ltd. the substation permit and licence set out in Appendix 2 – Permit and Licence 1976-D03-2018 to construct and operate the McLaughlin 423S Substation.

107. The appendices will be distributed separately.

Dated on February 23, 2018.

### **Alberta Utilities Commission**

*(original signed by)*

Joanne Phillips  
Panel Chair

*(original signed by)*

Tracee Collins  
Commission Member

*(original signed by)*

Carolyn Hutniak  
Commission Member



## Appendix B – Ruling of February 12, 2015



Appendix B - Ruling  
of February 12 2015.p

(consists of 2 pages)

## Appendix C – Ruling of August 10, 2015



Appendix C - Ruling  
of August 10 2015.pdf

(consists of 2 pages)



## Appendix D – Ruling of February 24, 2017



Appendix D - Ruling  
of February 24 2017.p

(consists of 2 pages)



## Appendix E – Summary of Commission directions

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. Within 60 days prior to the commencement of construction, RESL shall file a letter with the AUC confirming that the applicable wildlife field surveys remain current and will remain current (i.e., no more than two years old) until the proposed project is commissioned. ....Paragraph 103(a)  
This direction will be a condition of Power Plant Approval 1976-D02-2018.
2. RESL shall implement any additional mitigation measures recommended by AEP WM should any new wildlife features or issues be identified during completion of updated wildlife surveys. Prior to construction, RESL shall submit a letter to the Commission confirming that it has consulted with AEP WM regarding additional mitigation measures. The letter from RESL shall identify any additional mitigation measure(s) recommended by AEP WM and confirm whether RESL has implemented the mitigation measure(s). If RESL elects not to implement any mitigation measure recommended by AEP WM, the Commission will determine whether further process is required.. .... Paragraph 103(b)  
This direction will be a condition of Power Plant Approval 1976-D02-2018.
3. RESL shall complete a minimum of three years of post-construction bird and bat mortality surveys, and submit the results of the surveys annually to AEP WM.....Paragraph 103(c)  
This direction will be a condition of Power Plant Approval 1976-D02-2018.
4. RESL shall submit a letter to the Commission annually summarizing its notification and consultation efforts with AEP WM and identify any AEP WM recommended mitigation measures or directions resulting from post-construction bird and bat mortality surveys and monitoring. If RESL elects not to implement any mitigation measure recommended by AEP WM it must notify the Commission and the Commission will determine whether further process is required..... Paragraph 103(d)  
This direction will be a condition of Power Plant Approval 1976-D02-2018.