



Enel Alberta Wind Inc.

Grizzly Bear Creek Wind Power Project

May 5, 2022

Alberta Utilities Commission

Decision 26677-D01-2022

Enel Alberta Wind Inc.

Grizzly Bear Creek Wind Power Project

Proceeding 26677

Applications 26677-A001 and 26677-A002

May 5, 2022

Published by the:

Alberta Utilities Commission

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1 Decision summary

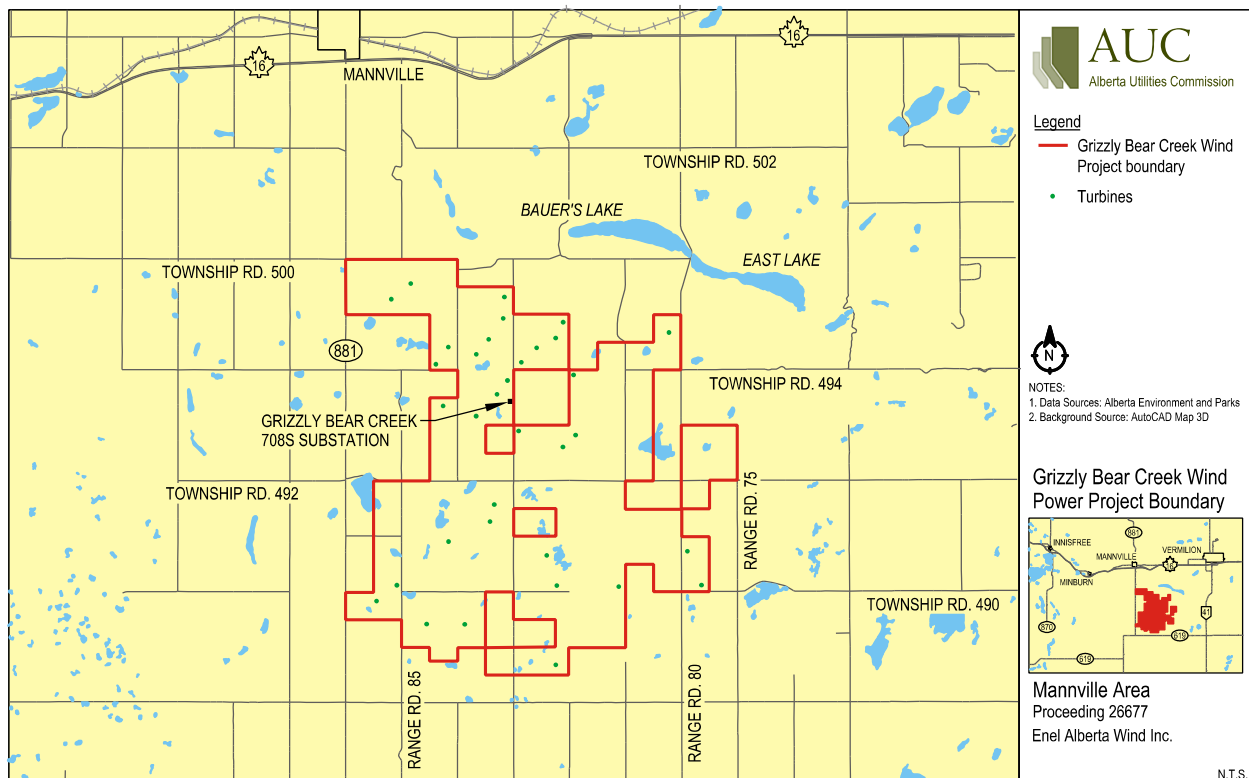
1. In this decision, the Alberta Utilities Commission approves applications from Enel Alberta Wind Inc. to construct and operate a 152.1-megawatt power plant designated as the Grizzly Bear Creek Wind Power Plant and the Grizzly Bear Creek Wind Power Project 708S Substation.

2 Introduction

2.1 Application details

2. Enel Alberta Wind Inc. applied to amend the previously approved Grizzly Bear Creek Wind Power Plant and Grizzly Bear Creek Wind Power Project 708S Substation (the project). The project is located in the counties of Minburn No. 27 and Vermilion River, approximately 6.4 kilometres south of the village of Mannville, Alberta. The project area is approximately 7,509.5 hectares (18,556 acres), as shown in the following figure:

Figure 1. Proposed Grizzly Bear Creek Wind Power Project



3. The Grizzly Bear Creek Wind Power Project 708S Substation is located in the southeast quarter of Section 21, Township 49, Range 8, west of the Fourth Meridian and will include: a 144/34.5-kilovolt, 170-megavolt ampere transformer, a 144-kilovolt circuit breaker and other associated substation equipment.

4. The project was previously owned by E.ON Climate & Renewables Canada Inc. and approved by the Commission in 2016.¹ At the time, the project consisted of 50 wind turbine generators with an individual generation capacity of 2.4 megawatts (MW). Enel acquired the project from E.ON in May 2019,² and is currently authorized to construct and operate the project pursuant to Power Plant Approval 26612-D02-2021³ and Substation Permit and Licence 26612-D03-2021.⁴

5. Enel initially filed its amendment applications in July 2021 and subsequently filed a project update in November 2021. The project update refined the proposed layout and specifications for the project. Specifically, the amended project will consist of 34 wind turbines, including 31 4.5-MW Vestas V150 turbines with a hub height of 120 metres, a rotor diameter of 150 metres and an overall blade tip height of 193.7 metres, and three 4.2-MW Vestas V136 turbines with a hub height of 82 metres, a rotor diameter of 136 metres and an overall blade tip height of 148.7 metres. The project has a total nameplate generation capability of 152.1 MW. Enel has selected final turbine locations and confirmed that there are no spare locations proposed in the project update. Enel has also finalized the collection system layout and access roads.

6. Despite the fact that the original project approvals were still valid, the Commission determined that the applications would be treated as if Enel were proposing a new project. The Commission explained its rationale as follows:⁵

... Enel has indicated that it is unable to construct its previously-approved project, as the necessary turbine model is no longer commercially available. In addition to substituting the turbines for a different model, Enel has also applied to substantially re-design the project, including by increasing the capacity from 120 MW to 154 MW and relocating a large portion of the project infrastructure, including the associated substation. The proposed amendments have the potential to result in a variety of impacts, including different environmental, visual, and construction impacts than were previously considered by the Commission. Moreover, as a result of evolving regulatory standards since 2016, many of the application materials filed in support of the amendment application cannot be directly compared to the materials relied on to assess the impacts of the original project.

¹ Decision 3329-D01-2016: E.ON Climate & Renewables Canada Ltd. – Grizzly Bear Creek Wind Power Project, Proceeding 3329, Applications 1610717-1 and 1610717-2, May 19, 2016.

² Decision 25087-D01-2019: Enel Alberta Wind Inc. – Grizzly Bear Creek Wind Power Project Ownership Change and Time Extension, Proceeding 25087, Applications 25087-A001 and 25087-A002, December 20, 2019.

³ Power Plant Approval 26612-D02-2021, Enel Alberta Wind Inc. – Grizzly Bear Creek Wind Power Project, Proceeding 26612, Application 26612-A001, June 29, 2021.

⁴ Substation Permit and Licence 26612-D03-2021, Enel Alberta Wind Inc. – Grizzly Bear Creek Wind Power Project 708S Substation, Proceeding 26612, Application 26612-A001, June 29, 2021.

⁵ Exhibit 26677-X0038, AUC ruling on proposed amendments, PDF page 2, paragraph 7.

7. The effect of treating Enel's applications as if it were proposing a new project, is that all impacts of the proposed project are within the scope of the Commission's consideration in this proceeding.

8. Enel's applications, project update, reply evidence and undertaking responses included the following:

- A main applications document that outlined Enel's responses to the AUC's application requirements.⁶
- A participant involvement program report prepared by Green Cat, which detailed consultation with stakeholders within 800 metres of the project and notification to stakeholders within 2,000 metres of the project⁷ and a participant involvement program update for the project update.⁸
- A noise impact assessment (NIA) for the initial project design⁹ and an updated NIA for the project update,¹⁰ prepared by Green Cat Renewables Canada Corporation (Green Cat).
- A shadow flicker assessment for the initial project design¹¹ and an updated shadow flicker assessment for the project update,¹² prepared by Green Cat.
- An environmental protection plan, which described the project-specific measures to be implemented during the construction and reclamation of the project.¹³
- An environmental evaluation, which predicted the project's effects on the environment, recommended measures to avoid or mitigate the project's predicted adverse environmental effects, and proposed monitoring to evaluate the efficacy of these measures.¹⁴
- A conservation and reclamation plan prepared by Tetra Tech Canada Inc. and in accordance with the *Conservation and Reclamation Directive for Renewable Energy Operations*.¹⁵
- A copy of correspondence with Alberta Environment and Parks (AEP) confirming that an environmental impact assessment under the *Environmental Protection and Enhancement Act* is not required, and a copy of correspondence with a representative of

⁶ Exhibit 26677-X0023, Grizzly Bear Creek Wind Project AUC Application.

⁷ Exhibit 26677-X0018, Attachment L1 - GBC - PIP Summary & Appendices A-D; Exhibit 26677-X0020, Attachment L3 - GBC_PIP Appendices E-G; Exhibit 26677-X0021, Attachment L4 - GBC PIP Appendices H-I.

⁸ Exhibit 26677-X0144, GBC PIP Update V1.0 (2021.12.13).

⁹ Exhibit 26677-X0007, Attachment H - Grizzly Bear Creek - NIA.

¹⁰ Exhibit 26677-X0095, Attachment D_Updated Noise Impact Assessment.

¹¹ Exhibit 26677-X0005, Attachment D - Grizzly Bear Creek - Shadow Flicker Assessment.

¹² Exhibit 26677-X0094, Attachment C_Updated Shadow Flicker Assessment.

¹³ Exhibit 26677-X0006, Attachment F - GBC Environmental Protection Plan

¹⁴ Exhibit 26677-X0017, Attachment E - GBC Environmental Evaluation.

¹⁵ Exhibit 26677-X0013, Attachment G1 - Conservation Reclamation Plan.

Alberta First Responders Radio Communications System (AFRRCS), confirming that the project does not have potential interference to AFRRCS' telecommunications facilities.¹⁶

- A renewable energy referral report for the project from AEP dated July 13, 2021,¹⁷ an AEP referral submission report prepared for the project by Tetra Tech,¹⁸ and Enel's responses to AEP's initial review questions.¹⁹
- A copy of the *Historical Resources Act* approval for the project, granted on April 19, 2021.²⁰
- A copy of correspondence from the Meteorological Service of Canada, a branch of Environment and Climate Change Canada, confirming that the Meteorological Service of Canada has no concerns about the project's potential to interfere with weather radar.²¹
- A site-specific emergency response plan, which is intended to align with ISO 14001 and ISO 45001 (environmental, health & safety management system standards).²²
- A clubroot management plan prepared by Wild Run LP,²³ a pollution prevention plan prepared by WSP Canada Inc.,²⁴ and a wetland mitigation plan prepared by Enel.²⁵
- A report prepared by Ollson Environmental Health Management regarding potential project impacts on human health.²⁶
- Visual simulations of the project from multiple viewpoints prepared by Green Cat.²⁷
- A report by Telford Land & Valuations Inc. regarding potential property value impacts of the project.²⁸
- A list of commitments that Enel has made to stakeholders.²⁹

¹⁶ Exhibit 26677-X0008, Attachment I - EPEA Consultation and AFRRCS.

¹⁷ Exhibit 26677-X0016, Attachment J - GBC Renewable Energy Referral Report.

¹⁸ Exhibit 26677-X0047, Referral Submission Report.

¹⁹ Exhibit 26677-X0048, AEP-FWS Initial Review Questions_GBC Wind Project_Response 21June21.

²⁰ Exhibit 26677-X0009, Attachment K - Historical Resources Act Approval.

²¹ Exhibit 26677-X0011, Attachment M - Grizzly Bear Creek Correspondence from ECCC.

²² Exhibit 26677-X0004, Attachment C - Grizzly Bear Creek ERP.

²³ Exhibit 26677-X0046, Clubroot Management Plan.

²⁴ Exhibit 26677-X0088, Attachment IR028_Pollution Prevention Plan.

²⁵ Exhibit 26677-X0109.01, IR3002_Grizzly Bear Creek Wind Project Wetland Mitigation Plan (1).

²⁶ Exhibit 26677-X0151, Appendix D - Expert Report and Curriculum Vitae of Dr. Chris Ollson of Ollson Environment Health Management.

²⁷ Exhibit 26677-X0096, Attachment E_Updated Visual Simulations; Exhibit 26677-X0140, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part1); Exhibit 26677-X0141, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part2); Exhibit 26677-X0142, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part3); Exhibit 26677-X0143, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part4).

²⁸ Exhibit 26677-X0146, Appendix G - Expert Report and Curriculum Vitae of Rob Telford of Telford.

²⁹ Exhibit 26677-X0193, Letter to AUC - Enel Undertaking Responses.

9. Enel anticipated that construction of the project would be completed on November 15, 2022, with an in-service date of November 25, 2022.³⁰

2.2 Interveners

10. The Commission issued a notice of applications, in accordance with Section 7 of Rule 001: *Rules of Practice*.³¹ In response, the Commission received statements of intent to participate in opposition to the project from numerous members of the Grizzly Landowner Group (GLG). As a result of the statements of intent to participate filed, the Commission held a virtual hearing to consider the applications.

11. The GLG consisted of 16 people and two companies. All of its members were granted standing. The GLG requested that the Commission deny the applications. In the alternative, if the Commission should decide to approve the project, the GLG recommended several conditions of approval to the project. The GLG submitted evidence and argument on topics including noise impacts; shadow flicker; health and safety issues; agricultural impacts; consultation; residential, social and visual impacts including impacts to the rural character of the surroundings; environmental and wildlife impacts; property value impacts; and construction and reclamation.

12. On January 8 and 10, 2022, the Commission received two motions from landowners (Albert Tschetter, on behalf of the Hutterian Brethren Church of Mannville, and Trent and Judy Clark) who objected to the project and requested to participate at the oral hearing. On February 2, 2022, these landowners withdrew their objections to the project, explaining that their concerns had been addressed and they did not intend to participate further in the proceeding.³²

3 Legislative and evidentiary framework

13. In this section of the decision, the Commission describes the legal landscape in which its decisions are made. First, the Commission explains its mandate and powers when considering a power plant application. Second, the Commission explains how it assesses the public interest, including a discussion of its authority to consider whether the electric energy produced from the proposed power plant is renewable or not.

3.1 The role of the Commission

14. The Commission is an independent, quasi-judicial agency of the province of Alberta. As a quasi-judicial agency, the Commission is similar in many ways to a court when it holds hearings and makes decisions. Like a court, the Commission bases its decisions on the evidence before it and allows interested parties to cross-examine each other's witnesses to test the evidence. However, unlike a court, the Commission has no inherent powers. Its powers are conferred on it by the provincial legislature and set out in legislation. Unlike a court proceeding, the Commission's proceedings are not matters between two or more competing parties to determine who wins and loses. Instead, the Commission deals with specialized subject matters requiring it to assess and balance a variety of public interest considerations.

³⁰ Exhibit 26677-X0042, IR Response, PDF page 19.

³¹ Rule 001: *Rules of Practice*, effective May 17, 2021.

³² Exhibit 26677-X0175, Clark LT AUC withdrawal of intervention; Exhibit 26677-X0176, Mannville Colony Letter of Non-Objection.

15. When the Commission approves a project, it does so having considered the entirety of the proceeding record including the representations and commitments made by an applicant. The Commission's determination that a project is in the public interest is informed by, and in many cases contingent on, the commitments made by an applicant. In some cases, where the Commission finds it necessary to supplement or clarify the terms of a commitment, the Commission may include a commitment as a condition of approval. However, the Commission considers commitments to be binding on an applicant regardless of whether or not the commitment is turned into a condition.

16. The Commission has previously affirmed that the public interest will be largely met if an application complies with existing regulatory standards, and the project's public benefits outweigh its negative impacts.³³ As a starting point, a power plant application filed with the Commission must contain all the information required in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*³⁴ and Rule 012: *Noise Control*.³⁵

17. Once the Commission receives an application and determines that it meets the application requirements, the Commission issues notice of the application to the general public, often through newspapers and online announcements, and provides a copy of the notice directly to those persons who own land or reside in the vicinity of the project. The purpose of providing notice is to ensure that persons who may be directly and adversely affected by the project are aware of the application and have the opportunity to understand the potential impacts on their rights and voice their concerns.

18. The Commission recognizes that responding to an application requires time and resources. In order to alleviate this burden, the Commission makes funding available to local interveners to enable them to hire legal representation, consultants and experts to assist with their participation.

19. The applicant has the onus to demonstrate that approval of its application is in the public interest. Parties who may be directly and adversely affected by the Commission's approval of the application may show how the applicant has not met its onus. These parties may do so by bringing evidence of the effects of the project on their own private interests and explaining how the public interest may be better served by accommodating their private interests, and they may use the evidence filed by all parties to the proceeding to argue what a better balancing of the public interest might be. It is the Commission's role to test the application to determine whether approval is in the public interest.

3.2 Public interest assessment

20. The Commission's proceedings are conducted to determine an outcome that meets the public interest mandate set out in its enabling legislation. When the Commission receives an application to construct and operate a power plant, Section 17(1) of the *Alberta Utilities Commission Act* is engaged. This legislative provision states that, in addition to any other matters

³³ EUB Decision 2001-111: EPCOR Generation Inc. and EPCOR Power Development Corporation - 490-MW Coal-Fired Power Plant, Application 2001173, December 21, 2001, PDF page 12.

³⁴ Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*, effective August 1, 2019. Because the applications were submitted on July 14, 2021, the version of Rule 007 effective August 1, 2019, applies to this project.

³⁵ Rule 012: *Noise Control*, effective March 5, 2021.

it may or must consider, the Commission must give consideration to whether the proposed project is in the public interest, having regard to the social and economic effects of the project and its effects on the environment.

21. The Commission must also take into consideration the purposes of the *Hydro and Electric Energy Act* and the *Electric Utilities Act*. These statutes provide the framework for a competitive generation market, where decisions about whether and where to generate electricity are left to the private sector. Under this framework, any proponent can provide electricity to the Alberta power pool if it can demonstrate that the construction and operation of its power plant meets the public interest. The proponent is responsible for assessing the economic viability of a power plant, including whether there is a market demand for the electricity it will provide, and assumes the associated economic risks. The Commission is prohibited by Section 3(1)(c) of the *Hydro and Electric Energy Act* from considering whether a generating unit is an economic source of electric energy, or 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 Alberta. This prohibition reflects the fact that in an openly competitive market, it is the proponent's role to consider whether there is a market demand for the electricity a power plant will provide, or in other words, whether the electricity is needed to meet consumer requirements.

22. Conducting a public interest assessment requires the Commission to assess and balance the competing elements of the public interest in the context of each specific application before it. Part of this exercise is an analysis of the nature of the impacts associated with a particular project, and the degree to which a project proponent has addressed these impacts. Balanced against this is an assessment of the project's potential public benefits.

23. For example, the negative environmental impacts associated with a power plant are determined by that power plant's unique characteristics. Wind power plants rely on turbine blades that have the potential to cause bird and bat mortalities. When considering an application for a wind power plant, the Commission must scrutinize factors such as the number and size of proposed turbines, the layout, and location. These factors, among others, inform the potential impacts on bird and bat populations, which must be addressed in the project's public interest assessment. Another fundamental characteristic of wind power plants is that they generate electricity from a source that is renewable, and that does not result in the production of greenhouse gases during operation. The Commission considers that this too is relevant to the public interest assessment, as it represents a public benefit in the form of emissions-free electricity.

24. In the Commission's view, consideration of the renewable nature of a power plant, as part of the public interest assessment, does not contravene Section 3(1)(c) of the *Hydro and Electric Energy Act* or otherwise jeopardize the goals of competition or deregulation. Proponents remain entitled to make an independent determination of whether a project is economically viable, and to pursue the development of that project, including the selection of the energy source. When the Commission conducts a public interest assessment of a power plant application, it neither challenges the economics of the project nor scrutinizes the need for the electricity it will provide. However, the Commission must still have regard for, among other things, the effects of the project on the environment, which includes the degree to which it does or does not create emissions during operation.

4 Discussion and findings

4.1 Noise impacts

25. In this section of the decision, the Commission addresses the GLG's concerns about potential noise impacts from the project and the adequacy of Enel's NIA. The GLG retained James Farquharson of FDI Acoustics Inc. to provide evidence and testify about the NIA and noise impacts. Enel retained Cameron Sutherland of Green Cat to supply reply evidence on noise issues.

26. J. Farquharson questioned if the NIA meets the requirements of Rule 012 and suggested Enel update the NIA to reflect the most up-to-date project design and provide sound source ranking tables for the most affected receptors. J. Farquharson also recommended that the Commission direct Enel to complete a post-construction comprehensive sound level (CSL) survey and measure infrasound during the survey. In addition, the GLG raised concerns about noise from project construction activities.

27. For the reasons that follow, the Commission finds that the NIA and its noise model meet the requirements of Rule 012 and that the noise from the project is expected to be compliant with Rule 012. The Commission discusses the potential health impacts of noise in Section 4.3 of this decision.

4.1.1 Does the noise impact assessment meet the requirements of Rule 012?

28. At the outset, the Commission will address J. Farquharson's suggestion that the NIA be updated to reflect Enel's most recent project design.³⁶ Enel has confirmed, and the Commission accepts, that the NIA submitted by Enel as part of its project update reflects the most up-to-date project design (e.g., updated turbine model and locations),³⁷ and finds that further updates to the NIA are therefore unnecessary.

29. To determine if the NIA meets the requirements of Rule 012, the Commission must consider J. Farquharson's concerns about the accuracy or conservatism of the noise modelling, potential additional receptors, and adequacy of baseline case modelling.

30. With respect to conservatism of the noise modelling for the project, the Commission finds that the NIA has incorporated several conservative assumptions typical of wind power NIAs submitted to the Commission, including assumptions that all turbines operate at full power all day and night and that all receptors are always downwind of all turbines.³⁸ The use of conservative assumptions in the NIA is intended to compensate for the level of uncertainty inherent in the noise model developed for the project. Given this, the Commission does not require Enel to incorporate an additional uncertainty factor into the project NIA as suggested by J. Farquharson. However, if actual operational sound levels from the project are determined to be non-compliant with Rule 012 at one or more receptors, then Enel will be required to address the exceedance through post-construction mitigation.

³⁶ Exhibit 26677-X0106, Appendix C - Evidence of Jim Farquharson, PDF page 5.

³⁷ Exhibit 26677-X0095, Attachment D_Updated Noise Impact Assessment, PDF page 6; Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 8, paragraph 32.

³⁸ Exhibit 26677-X0095, Attachment D_Updated Noise Impact Assessment, PDF page 28; Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 7, paragraph 29.

31. J. Farquharson identified three properties within 1.5 kilometres of project turbines that were not included in the NIA.³⁹ Rule 012 specifies that noise from energy-related facilities must be compliant at dwellings and defines “dwelling” as a permanently or seasonally occupied structure used for habitation for the purpose of human rest.⁴⁰ Given Enel’s confirmation with the owners of the three properties identified by J. Farquharson that these properties are not permanently or seasonally occupied,⁴¹ the Commission finds that they do not qualify as dwellings in the context of Rule 012, and it is not necessary for Enel to assess noise compliance at these locations.

32. J. Farquharson also identified a baseline facility (the Minco Gas Co-op Facility at Legal Subdivision 4, Section 5, Township 49, Range 8, west of the Fourth Meridian), and observed that there are two pieces of sound-emitting equipment (i.e., line heater and gas regulator) located at this facility.⁴² The Commission agrees with J. Farquharson’s recommendation that noise from the Minco Gas Co-op Facility should be included when predicting cumulative sound levels at receptors because a line heater and a gas regulator are considered typical energy-related sound sources for cumulative sound effect assessment. The Commission is satisfied that Enel has adequately updated the noise model to include the Minco Gas Co-op Facility and accepts Enel’s explanation why the inclusion of this facility does not change the project’s compliance with Rule 012.⁴³

33. Lastly, the GLG expressed concerns about Enel’s final project design and, in particular, final turbine locations, and subsequent compliance with Rule 007 and Rule 012. The GLG noted that Enel could change its project design after the Commission approval,⁴⁴ which might result in incremental noise impacts. The GLG requested that the Commission direct Enel to submit a final project update confirming the final turbine locations, and update the NIA to reflect as-built turbine locations.⁴⁵ Enel submitted that it should not be required to update its NIA, so long as turbines were not moved beyond the 100-metre allowance set out in Rule 007. Enel argued that small adjustments to turbine locations within the 100-metre allowance would not result in material changes to the predicted noise levels.⁴⁶ In addition, Enel clarified that it does not plan to move the project turbines, and would only do so in response to an unforeseen circumstance.⁴⁷

34. The Commission confirms that, under updated Rule 007, if an applicant has applied for a project where changes in equipment or layout are anticipated after the application has been approved, a final project update must be submitted to the Commission at least 90 days prior to the start of construction.⁴⁸ A list of allowances for changes in equipment or layout of wind power plants, and the requirements for a project update, is set out in Table 4.2 of Rule 007. The Commission confirms that under Rule 007, Enel is not required to update the NIA if it relocates turbines within the 100-metre allowance; however, if Enel redesigns its project beyond permitted

³⁹ Exhibit 26677-X0106, Appendix C - Evidence of Jim Farquharson, PDF page 3.

⁴⁰ Rule 012: *Noise Control*, PDF page 42.

⁴¹ Exhibit 26677-X0193, Letter to AUC - Enel Undertaking Response, PDF page 2.

⁴² Exhibit 26677-X0106, Appendix C - Evidence of Jim Farquharson, PDF page 3; Transcript, Volume 4, page 503, lines 9-11.

⁴³ Exhibit 26677-X0193, Letter to AUC - Enel Undertaking Response, PDF page 2.

⁴⁴ Exhibit 26677-X0012, Attachment O - Draft Approval_Permit and License, PDF page 2.

⁴⁵ Transcript, Volume 5, page 737, lines 6-16.

⁴⁶ Transcript, Volume 5, page 800, lines 1-16.

⁴⁷ Transcript, Volume 2, page 246, lines 5-22.

⁴⁸ Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, effective April 25, 2022.

allowances in its final project update, it is required to file a letter of enquiry or an amendment application with the Commission.

35. In summary, the Commission finds that the NIA meets the requirements of Rule 012 and accepts its conclusion that the project would operate in compliance with that rule.

4.1.2 Should Enel provide sound source ranking tables in the project noise impact assessment?

36. J. Farquharson suggested that Enel prepare for potential future noise mitigation measures by proactively providing sound source ranking tables for the most affected receptors.⁴⁹ The sound source ranking tables suggested by J. Farquharson would provide the predicted noise contribution from individual wind turbines at each receptor, sorted from largest contribution to smallest contribution. These tables could be used to identify the degree to which specific turbines contribute to noise at a given receptor such that potential future mitigation efforts could focus on the most impactful turbines. C. Sutherland's view was that, given that the project is predicted to be compliant with Rule 012 with no mitigation required at any turbine, sound source ranking tables would be of limited value and are not required.⁵⁰

37. The Commission finds that it is unnecessary for Enel to provide sound source ranking tables at this time, because the NIA predicts that the most up-to-date project design will comply with Rule 012. If, however, a receptor is determined to be non-compliant with Rule 012 at the post-construction stage, then Enel is required to identify the turbines contributing the most noise at the non-compliant receptor to support the implementation of appropriate mitigation. In this case, Enel would be required to provide a sound source ranking table to the Commission for the receptor in question.

4.1.3 Is post-construction noise monitoring necessary?

38. Both parties agreed that a post-construction CSL survey is a reasonable approach to verify project compliance with Rule 012. Given the fact that predicted sound levels are close to the nighttime permissible sound level at the most affected receptor,⁵¹ the Commission requires Enel to complete a CSL survey to verify compliance with Rule 012 once the project commences operation.

39. The Commission notes that Enel and the GLG had different opinions about appropriate monitoring receptors for the CSL survey. In addition to the two receptors (R1 and R55) recommended by Enel, the GLG suggested adding Receptor R8 to the CSL survey.⁵² The Commission finds that R1 is a suitable monitoring location, because R1 is predicted to have a compliance margin of 0.4 dBA (A-weighted decibels) during the nighttime and the project will be a dominant sound source at this receptor. The Commission notes that R8 and R55 have predicted compliance margins of 3.0 dBA and 1.2 dBA, respectively. Although these compliance margins suggest that the cumulative sound levels will likely be below permissible sound levels at these receptors, given the specific noise concerns of the owners of these two residences

⁴⁹ Exhibit 26677-X0106, Appendix C - Evidence of Jim Farquharson, PDF page 5.

⁵⁰ Exhibit 26677-X0150, Appendix C - Expert Report and Curriculum Vitae of Cameron Sutherland of Green Cat Renewables, PDF page 7.

⁵¹ Exhibit 26677-X0095, Attachment D_Updated Noise Impact Assessment, PDF page 26.

⁵² Transcript, Volume 5, page 744, lines 8-11; The distance between R1, R8 and R55 and the nearest project wind turbine is 1,120 metres, 1,230 metres and 760 metres, respectively.

(Candice Obrigewitch at R8 and Laura Tapley at R55), and in the interest of measuring sound levels at more than one location, the Commission finds it reasonable for Enel to include these two receptors in the CSL survey as well.

40. Based on the foregoing, the Commission imposes the following condition of approval for the project:

- a. Enel Alberta Wind Inc. shall conduct a post-construction comprehensive sound level survey, including an evaluation of low frequency noise, at receptors R1, R8 and R55. The post-construction comprehensive sound level survey must be conducted under representative conditions and in accordance with Rule 012: *Noise Control*. Within one year after the project commences operations, Enel shall file a report with the Commission presenting measurements and summarizing results of the post-construction comprehensive sound level survey.

4.1.4 Should infrasound be included in the post-construction noise monitoring?

41. In this proceeding, witnesses for Enel and the GLG (i.e., C. Sutherland and J. Farquharson) agreed that infrasound refers to low frequency sound that is only audible to humans at high decibel levels and that a typical frequency cut-off for infrasound would be 20 hertz or below. The Commission notes that Rule 012 does not refer specifically to the term “infrasound” nor require the analysis of sound below 20 hertz. However, the Commission recognizes that wind turbines may produce infrasound and has considered whether the CSL survey should include infrasound measurements, as recommended by J. Farquharson.

42. Christopher Ollson of Ollson Environmental Health Management, a witness for Enel who has a PhD in Environmental Science, argued against infrasound monitoring. Based on a literature study, C. Ollson found that although infrasound is emitted from wind turbines and its contribution above background sources can be measured close to wind turbines, infrasound levels attributable to wind projects are typically within background levels at nearby dwellings. Further, contrary to FDI’s assertion that advancements in monitoring instrumentation permit the measurement of the infrasound coupled with the audible sound,⁵³ C. Ollson stated that accurately measuring infrasound from turbines is still a challenge and requires highly specialized acoustical expertise.⁵⁴

43. The Commission notes that there was no evidence from a witness with specialized expertise suggesting that infrasound produced by the proposed project wind turbines will be detected by the residents of nearby dwellings or otherwise impact nearby residents. Further, the Commission is aware that although sound below 20 hertz can be measured using commercially available instrumentation, it is not common practice to collect infrasound measurements, except for the purpose of scientific research. Given this, the Commission finds that measuring infrasound from turbines in the current proceeding would be unlikely to provide helpful information for the purpose of assessing project compliance with Rule 012, and the Commission does not require Enel to measure infrasound as part of the CSL survey.

⁵³ Exhibit 26677-X0106, Appendix C - Evidence of Jim Farquharson, PDF page 6.

⁵⁴ Exhibit 26677-X0151, Appendix D - Expert Report and Curriculum Vitae of Dr. Chris Ollson of Ollson Environment, PDF page 14.

4.1.5 Has Enel acquired project turbines equipped with serrated trailing edges?

44. During the hearing, the GLG pointed out that the NIA indicated that the project would use turbine models with a serrated trailing edge for noise reduction, however, “serrated trailing edge” was not mentioned anywhere else in Enel’s applications. The GLG also questioned if blades with the serrated trailing edge would be an “add-on” requested by purchasers or a standard design feature for the project turbine models. Enel confirmed that it has acquired project turbines with serrated trailing edges for the project and believed that serrated trailing edges are standard for the project turbine models.⁵⁵

45. The Commission notes the NIA explicitly stated that “Both of the selected designs [Vestas V150 turbine and Vestas V136 turbine] will have serrated trailing edge [*sic*] fitted for noise reduction.”⁵⁶ Further, for both the V150 and V136 turbines, the NIA modelled project sound levels using sound emission data corresponding to “blades with serrated trailing edge[s].”⁵⁷

46. Given that the predicted compliance at the most affected receptor is premised on the use of serrated trailing edges, the Commission finds that use of serrated trailing edges is critical to the project design. The Commission is satisfied that Enel has acquired project turbines equipped with serrated trailing edges given its evidence in this proceeding.

4.1.6 Will Enel’s management plan for construction noise comply with Rule 012?

47. The Commission acknowledges the GLG’s concerns about potential noise impacts from project construction activities.⁵⁸ Enel confirmed that it will construct the project during daytime hours wherever feasible, ensure machinery is well maintained and muffler systems are used to mitigate noise from construction equipment, and inform nearby residents in advance of significant noise-causing activities. Enel clarified that it may be necessary to deliver oversized loads at night to accommodate safety considerations on local highways.⁵⁹ Enel committed to respond promptly to construction-related noise complaints if any are received. Enel clarified that if a complaint about construction noise cannot be resolved by Enel, then Enel will inform stakeholders of the process for filing noise complaints with the Commission pursuant to Section 5 of Rule 012.⁶⁰

48. The Commission finds Enel will generally comply with Section 2.11 of Rule 012 to manage and mitigate project construction noise. The Commission expects Enel to uphold its commitment to limit the project construction within the daytime hours wherever feasible and take prompt action to address noise complaints from residents. If a complaint about project construction or operation noise is filed with the Commission, Enel is required to follow the requirements in Section 5 of Rule 012 to address the noise complaint and verify project compliance at the complainant’s residence.

⁵⁵ Transcript, Volume 2, page 239, lines 16-22.

⁵⁶ Exhibit 26677-X0095, Attachment D_Updated Noise Impact Assessment, PDF page 21.

⁵⁷ Exhibit 26677-X0095, Attachment D_Updated Noise Impact Assessment, PDF pages 34-35.

⁵⁸ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 15, paragraph 41.

⁵⁹ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 14, paragraph 62; Transcript, Volume 5, page 707, lines 23-25 and page 708, lines 1-11.

⁶⁰ Exhibit 26677-X0193, Letter to AUC - Enel Undertaking Responses, PDF page 5.

4.1.7 Summary

49. The Commission finds that the project NIA and associated noise model meet the requirements of Rule 012, the project is expected to be compliant with Rule 012 at all receptors, and Enel will generally adhere to mitigation measures for construction noise set out in Rule 012. The Commission requires Enel to conduct a post-construction CSL survey at receptors R1, R8 and R55 under representative operating conditions and in accordance with Rule 012.

4.2 Visual impacts including shadow flicker

50. Members of the GLG raised concerns about the visual impacts of the project. This included concerns about how the presence of turbines will affect the rural character of the project area, and concerns about the impacts of shadow flicker on nearby residences. In this section of the decision, the Commission addresses the visual impacts of the project. First, the Commission discusses how the presence of turbines will alter the visual landscape. Second, the Commission discusses whether the shadow flicker assessment meets the requirements of Rule 007 and assesses the adequacy of Enel's shadow flicker mitigation measures. The Commission discusses the potential health impacts resulting from shadow flicker in Section 4.3 of this decision.

4.2.1 How will the project visually impact the surroundings?

51. Some GLG members have long family histories in the area, with earlier generations settling in the area in the early 20th century. Others came to the community to escape the hurried pace of urban life. GLG members do not want the rural character and heritage of the area disturbed by large industrial turbines which obstruct their views in the daytime and in the nighttime visibly flash with warning lights.⁶¹

52. Enel acknowledged there would be changes to the visual landscape once the project is constructed, but submitted that any new structure built in the area would change the landscape and this change is not a unique impact related to the project. In response to the GLG's concerns about warning lights, Enel clarified it is obligated to install a minimum number of lights on the turbines pursuant to regulatory requirements prescribed by Transport Canada.⁶²

53. With regard to visual impacts from the lights installed on project turbines, the Commission acknowledges that turbine lighting is under the jurisdiction of Transport Canada and expects that Enel will meet Transport Canada requirements while using the minimum number of lights.

54. The Commission acknowledges that large wind projects alter the landscape and for the GLG result in visually unattractive impacts. This is a factor that needs to be balanced against the project's public benefits. The Commission discusses this balancing exercise in more detail in Section 5.

4.2.2 Does the shadow flicker assessment meet the requirements of Rule 007?

55. Rotating wind turbine blades can periodically cast moving shadows over nearby land and buildings as they turn. When these shadows pass over a constrained opening such as a window, the light levels within the room may increase and decrease as the blades rotate, resulting in a

⁶¹ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 8, paragraphs 17-19;

Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 14, paragraph 36.

⁶² Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 12, paragraph 52.

flickering effect. In the context of this decision, this flickering effect is referred to as shadow flicker. The GLG raised concerns about potential shadow flicker caused by the project turbines, “both from an adverse visual aesthetic impact as well as an adverse health impact.”⁶³

56. The shadow flicker assessment submitted by Enel identified 34 dwellings within 1.5 kilometres of the project turbines as receptors and modelled the impact of shadow flicker at receptors under different sets of assumptions: a “worst-case” scenario contemplating that each turbine is operating and facing the sun at all times of the day; and a “real-case” (or adjusted case) scenario that incorporates statistical weather data to reflect more realistic conditions. Enel submitted that the project is designed to ensure that the adjusted case shadow flicker does not exceed commonly accepted thresholds.⁶⁴

57. The Commission finds that Enel’s shadow flicker assessment generally meets the requirements of Rule 007 and accepts its prediction that in the adjusted-case scenario, the most affected receptors would experience no more than 13 hours per year of shadow flicker from the project.⁶⁵

58. The Commission notes that the project’s shadow flicker assessment applied 30 hours per year and 30 minutes per day assessment criteria, based on a German benchmark that is commonly relied on by project proponents in Alberta.⁶⁶ The Commission clarifies that there are no existing provincial or federal regulations imposing a criterion for shadow flicker impacts in Alberta. Neither has the Commission adopted any formal criteria as a benchmark against which acceptable versus unacceptable impacts will be determined. Rather, the Commission requires project applicants to consult nearby landowners about potential shadow flicker impacts at the pre-application stage, and to promptly address complaints or concerns from residents regarding shadow flicker from the project at the post-construction stage. Accordingly, the Commission has not relied solely on the German benchmark when considering the extent and severity of the shadow flicker impacts caused by the project, but nevertheless accepts that this benchmark can provide a helpful framework for quantifying and assessing shadow flicker.

59. The Commission acknowledges Enel’s statement during the hearing that it is open to working with stakeholders on a case-by-case basis to review shadow flicker complaints or concerns and will seek to mitigate impacts if required. In particular, Enel stated that while there are a minimal number of mitigations that could be implemented regarding shadow flicker in the circumstances, such measures could include supporting the purchase of blinds for windows.⁶⁷ The Commission imposes the following condition of approval:

- b. Enel shall file a report with the Commission detailing any complaints or concerns it receives from local landowners regarding shadow flicker from the project during its first year of operation, as well as Enel’s response to the complaints or concerns. If Enel implements mitigation to reduce shadow flicker impacts, the report shall detail the mitigation measures and associated stakeholders’ feedback regarding the mitigation. Enel shall file this report no later than 13 months after the project becomes operational.

⁶³ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 14, paragraph 37.

⁶⁴ Transcript, Volume 5, page 670, lines 6-10.

⁶⁵ Exhibit 26677-X0094, Attachment C_Updated Shadow Flicker Assessment, PDF pages 17-18, Table 4-1.

⁶⁶ Exhibit 26677-X0094, Attachment C_Updated Shadow Flicker Assessment, PDF page 4; Transcript, Volume 2, page 295, lines 19-25.

⁶⁷ Transcript, Volume 2, page 319, lines 23-25 and page 320, lines 1-5.

60. The GLG noted that Enel could change its project design after the Commission approval, which might result in incremental shadow flicker impacts. The GLG requested Enel update the shadow flicker assessment to reflect as-built turbine locations when Enel finalizes the project design.⁶⁸ Enel argued that small adjustments to turbine locations within the 100-metre allowance would not result in material changes to the predicted shadow flicker, and Enel does not plan to move the project turbines unless in response to an unforeseen circumstance. Given this, the Commission finds that Enel is not required to update the shadow flicker assessment if it relocates turbines within the 100-metre allowance.

4.2.3 Summary

61. The Commission finds that the shadow flicker assessment meets the requirements of Rule 007, that potential shadow flicker impacts (which are predicted not to exceed 13 hours per year at any receptor) are minimal in the sense that they represent a small proportion of daylight hours within the year and fall below the 30-hour per year criteria commonly applied to wind projects, and that Enel has proposed reasonable mitigation measures to address negative impacts. The Commission imposes a condition of approval to ensure that Enel reports to the Commission any shadow flicker complaints or concerns from stakeholders and any actions taken in response to such complaints or concerns. Although the Commission is satisfied that the shadow flicker impacts of the project will be minimal, the Commission recognizes that the presence of a large wind project will inevitably alter the landscape and that GLG members will experience negative visual impacts as a result.

4.3 Health and safety issues

4.3.1 Will the project cause or exacerbate adverse health effects?

62. The Commission notes that GLG members expressed concerns that noise, shadow flicker or other impacts from the project will result in adverse health effects,⁶⁹ but did not provide technical or expert evidence on this matter. For the reasons that follow, the Commission finds no persuasive evidence that the project, operating as proposed in the applications, is likely to result in adverse health effects for nearby residents.

63. C. Ollson, from Ollson Environmental Health Management, provided evidence that the project as proposed will not adversely impact the health of residents and communities living in proximity to the project.⁷⁰ In particular, he testified that the 40 dBA nighttime permissible sound level applicable at receptors is adequate to protect human health. He emphasized that “Rule 012 and a nighttime cumulative permissible sound level of 40 dBA, are amongst the most conservative in the world and will ensure the protection of the community’s health and address concerns raised by GLG members.”⁷¹ C. Ollson further submitted that based on his research of scientific and medical literature, infrasound levels attributable to wind projects at nearby residences are typically well below levels that could induce adverse health impacts.⁷² With respect to shadow flicker impacts, C. Ollson noted that predicted shadow flicker duration at any

⁶⁸ Transcript, Volume 5, page 756, lines 1-25 and page 757, lines 1-15.

⁶⁹ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 11, paragraphs 28 and 29.

⁷⁰ Exhibit 26677-X0151, Appendix D - Expert Report and Curriculum Vitae of Dr. Chris Ollson of Ollson Environment, PDF page 15.

⁷¹ Exhibit 26677-X0151, Appendix D - Expert Report and Curriculum Vitae of Dr. Chris Ollson of Ollson Environment, PDF page 11.

⁷² Exhibit 26677-X0151, Appendix D - Expert Report and Curriculum Vitae of Dr. Chris Ollson of Ollson Environment, PDF page 14.

receptor is below the commonly applied guideline of no more than 30 hours of expected shadow flicker per year.⁷³

64. The Commission accepts the conclusion in C. Ollson's evidence, and affords it significant weight as it was the only direct evidence presented on the issue of human health effects by a witness with training in environmental health issues. Although the Commission does not find that the project will cause or exacerbate adverse health effects, the Commission emphasizes that Enel is required to verify project compliance with Rule 012 in a post-construction CSL survey and to uphold its commitment to address shadow flicker concerns as they arise.

4.3.2 Does Enel's emergency response plan reasonably address the GLG's concerns?

65. The Commission acknowledges the GLG's concerns about the ability of Enel and local authorities to respond to fires and other emergencies associated with the project. The GLG noted that the Mannville Fire Department is relatively small and staffed with volunteers. The GLG also submitted that the emergency response plan may not be adequate to deal with various emergencies and that local residents have not been consulted regarding emergency responses.⁷⁴ C. Obrigewitch, a GLG member, expressed concerns about potential fire hazards to her land, which is located 350 metres from the closest turbine.⁷⁵

66. The Commission agrees with Enel's view that the risk of fire at a wind power facility is low, given that in the past 10 years, there have been only three incidents of turbine fire across Enel's 2,600 turbines in North America, and given that individual project turbines and the project as a whole will include several fire monitoring detection systems.⁷⁶ The Commission notes Enel's confirmation that it has developed a comprehensive site-specific emergency response plan for the project and that the emergency response plan includes a requirement for annual emergency response exercises. Enel completed its first exercise with local emergency responders before commencing preliminary construction activities in October 2021.⁷⁷ The Commission considers that these annual exercises will help ensure that local emergency responders have project-specific knowledge and training to assist in responding to fires.

67. In addition, Enel committed to consult with local emergency responders and stakeholders to refine and update the emergency response plan prior to project construction. In particular, the Commission notes that Enel is willing to provide financial support to assist with capacity building, if requested by applicable local emergency responders.⁷⁸ Enel is also willing to engage with C. Obrigewitch and other GLG members on questions they may have regarding potential fire hazards and to incorporate their feedback into the emergency response plan.⁷⁹ The Commission finds this to be a reasonable approach to address the GLG's concerns about fire and other emergencies. The Commission expects Enel to follow through on its commitment to

⁷³ Exhibit 26677-X0151, Appendix D - Expert Report and Curriculum Vitae of Dr. Chris Ollson of Ollson Environment, PDF page 6.

⁷⁴ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 14, paragraphs 38 and 39.

⁷⁵ Exhibit 26677-X0100.01, Appendix B - Landowners Submissions, PDF pages 27-28.

⁷⁶ Transcript, Volume 5, page 706, lines 24-25 and page 707, lines 1-6.

⁷⁷ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 13, paragraph 57.

⁷⁸ Exhibit 26677-X0193, Letter to AUC - Enel Undertaking Responses, PDF page 5.

⁷⁹ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 13, paragraph 58; Transcript, Volume 5, page 707, lines 12-19.

consult local emergency responders and stakeholders (in particular, C. Obrugewitch) and incorporate their input into its final site-specific emergency response plan.

4.4 Agricultural impacts

68. In this section of the decision, the Commission addresses the GLG's concerns about the potential impacts that the project may have on agriculture. First, the Commission addresses concerns about the potential spread of crop diseases. Second, the Commission addresses concerns that the project infrastructure may impede or frustrate the ability of landowners to aerially spray their crops.

4.4.1 Clubroot and soil-borne diseases

69. Both the GLG and Enel identified the spread of clubroot and other soil-borne diseases by the movement of soil as potential impacts of the project. The Commission heard concerns from the GLG about the potential spread of crop diseases, including clubroot, Fusarium and Aphanomyces. The spores from these diseases grow within a plant's roots, blocking the absorption of water and nutrients, and resulting in the stunting or killing of the plant. The diseases can be spread from affected to unaffected fields by the transportation of infected soil and plant matter. GLG members were concerned with the accidental spread of the diseases via contaminated vehicles, equipment and personnel during the construction of the project.

70. Enel prepared a project-specific clubroot management plan which outlines its approach to detecting and preventing the spread of clubroot.⁸⁰ The GLG retained Ronald Howard of RJH Ag Research Solutions Ltd. to review the clubroot management plan and provide recommendations for improvement. Enel retained Mark Fawcett of Tetra Tech to supply reply evidence on clubroot.

4.4.1.1 Does Enel's clubroot management plan adequately address the GLG's concerns with soil-borne diseases?

71. The first issue the Commission addresses is the adequacy of Enel's clubroot management plan.

72. Enel prepared a project-specific clubroot management plan, based on the Alberta Clubroot Management Plan, which outlines the testing, risk classification, cleaning and documentation procedures to be employed during the construction and operation of the project. Enel submitted that it would conduct topsoil testing for clubroot prior to construction and would apply the appropriate level of cleaning based on the results of the test. All equipment would be subject to Level 1 cleaning and would be elevated to levels 2 or 3 based on the risk classification of the land and the clubroot testing results.⁸¹ Both Enel and the GLG agreed that cleaning

⁸⁰ Exhibit 26677-X0046, Clubroot Management Plan.

⁸¹ Exhibit 26677-X0046, Clubroot Management Plan, PDF page 7, Table 2. Enel defines three levels of cleaning:

- Level 1 (rough cleaning): Scrape or knock off dirt from equipment, vehicles or footwear using shovels, brooms, hand scrapers, wire brushes.
- Level 2 (high-pressure wash): This will include a Level 1 Cleaning PLUS the removal of remaining soil from equipment using a pressure washer, steam, or compressed air on all areas where soil accumulates. Air will only be used when the use of water is not feasible.
- Level 3 (high-pressure wash with disinfectant): This will include a Level 2 Cleaning PLUS the misting of clean surfaces with a disinfectant (2% active ingredient bleach solution). The surface should remain moist with the bleach solution for a minimum of 15 minutes prior rinsing off.

measures targeted at preventing clubroot spread would also be suitable for preventing the spread of *Fusarium* and *Aphanomyces*, provided that all the soil and plant material was removed during the cleaning process.

73. R. Howard provided recommendations to Enel to improve the clubroot management plan. He recommended the best management practices section be updated, based on the more recent 2021 *Clubroot Management: Risk-based Guidance Document* developed by the Canadian Energy Pipeline Association, as it would provide better guidance to Enel's contractors. R. Howard also recommended the inclusion of a definition section, reference to conducting work in frozen soil conditions, provisions regarding providing timely access to documentation of cleaning, and clarification of the location and procedures of designated wash stations.⁸² The GLG requested Enel update the clubroot management plan and file it with the Commission as a condition of approval.⁸³

74. M. Fawcett generally agreed with R. Howard's proposed revisions to the clubroot management plan. Enel submitted that it would update the clubroot management plan and incorporate many of R. Howard's recommendations, including a technical glossary of terms and an electronic record-keeping system, information regarding best management practices, as well as clarification of the risk classification system and equipment-cleaning protocols. Enel advised that the updated clubroot management plan will also expressly acknowledge the minimum requirement to complete Level 1 cleaning prior to exiting any field and maintained that this level of cleaning will be effective in mitigating against the accidental introduction of *Fusarium* and *Aphanomyces*. Enel committed to file the revised clubroot management plan with the Commission at least 30 days prior to construction and to share the document with interested parties as requested. R. Howard was of the view that Enel's clubroot management plan was well written and technically sound, and the updates will fill information gaps and create a good reference document.

75. The Commission finds that Enel's clubroot management plan, which includes Enel's commitment to revise the clubroot management plan to include several of R. Howard's recommendations, reasonably mitigates the risk of clubroot and other soil-borne diseases. This finding is consistent with the positions taken by both Enel, M. Fawcett and R. Howard. The Commission is satisfied that the Level 1 cleaning measures described for this project, which include the physical removal of soil and plant matter from equipment and personnel, is appropriate not just for clubroot but for other soil-borne diseases such as *Fusarium* and *Aphanomyces* provided that these measures are carried out thoroughly. Further, the Commission finds Enel's approach to conducting field tests prior to construction to confirm the presence of clubroot to be reasonable as it will help inform if Enel should undertake an elevated level of cleaning in order to limit the spread of clubroot.

76. While the Commission does not find it necessary to make Enel's commitment to revise the clubroot management plan a condition of approval, the Commission expects Enel to follow-through on its commitment.

⁸² Exhibit 26677-X0098, Appendix G - Evidence of Ron Howard – final, PDF pages 2-5; Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 17, paragraph 51.

⁸³ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 7, paragraph 14.1.

4.4.1.2 Does Enel's clubroot testing and cleaning approach appropriately mitigate the GLG's clubroot concerns?

77. The second issue the Commission addresses is Enel's approach to clubroot testing and cleaning.

78. The Commission finds that the majority of GLG members should not experience clubroot impacts as a result of this project. Clubroot is spread via the relocation of contaminated soils. With the exception of the Mytz family, GLG members are not hosting any project components, and the soil on their lands should not be disturbed by the project during construction activities. Enel conducted 63 tests for clubroot in the fall of 2021 and did not find the presence of clubroot. Enel will also conduct a further round of testing for clubroot prior to the start of construction. This evidence supports a finding that GLG members face a low risk of clubroot impacts because no clubroot-contamination of their lands has been detected, and any changes in these risks should be identified in the testing that occurs prior to project construction starting. The Commission finds that any increased risks that arise during project construction or operation should be sufficiently mitigated by the clubroot management plan.

79. The Mytz family will have a portion of the collector system located on their land. The Mytz family requested Level 3 cleaning prior to Enel accessing their land and Enel submitted that any party that requests Level 3 cleaning will be granted this level of cleaning, regardless of the results of the clubroot lab tests.⁸⁴ The Commission finds that Enel's commitment to the Mytzes to conduct Level 3 cleaning is a reasonable mitigation measure that addresses the specific concerns of the spread of clubroot raised by the family.

80. Enel also submitted that it would provide clubroot test results to landowners if requested, as well as provide the updated clubroot management plan to interested parties. Enel also confirmed that parties can witness equipment-cleaning procedures, subject to construction schedules, and that it would provide a record of equipment cleaning to parties if requested. The Commission finds these commitments provide additional assurance of Enel's commitment to mitigate clubroot risks and to work with affected stakeholders to address their specific concerns.

81. Overall, the Commission finds that Enel's testing, cleaning and reporting approaches appropriately mitigate clubroot concerns.

4.4.2 Aerial spraying

82. In this section of the decision, the Commission considers whether the project may have impacts on a landowner's ability to aerial spray crops. Both Enel and the GLG acknowledged that aerial spraying is not commonly used in the project area and has largely been replaced by ground spraying. However, the GLG submitted that the value of crop loss can be substantial if issues such as pest infestations arise and are not immediately treated, and aerial spraying is often the quickest or most effective solution and may in some cases be the only option.

83. The Commission first discusses the potential for the project to interfere with aerial spraying, and the availability of alternatives in situations where aerial spraying is no longer possible. The Commission then discusses the frequency with which GLG members currently aerially spray in the project area and the potential for economic losses if this ability is

⁸⁴ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 6, paragraph 18.

limited. Lastly, the Commission discusses the adequacy of Enel's proposed turbine shut-off protocol in situations where it is possible to facilitate ongoing aerial spraying in the project area.

4.4.2.1 Will the project prevent aerial spraying and are there viable alternatives if aerial spraying is no longer possible?

84. The Commission received conflicting information on whether aerial spraying would remain feasible should the project be approved. During Enel's consultation program, an Arty's Air representative stated that an experienced pilot could spray among the turbines, including on the lands hosting the turbines. The representative added that transmission lines pose a greater hazard since sprayers fly very low to the ground.⁸⁵ During the hearing, Karen Hess testified that her sprayer required a one-mile distance to safely turn around in adjacent fields and indicated that they would not fly near wind turbines.⁸⁶ Given the conflicting information, which is not based on either direct written or oral evidence, the Commission is unable to conclude whether aerial spraying in the project area remains feasible should the project be approved.

85. Assuming that the presence of turbines precludes aerial spraying in at least certain locations, the Commission will consider whether alternatives are available. The Commission heard testimony from Enel that high-clearance ground spraying has largely replaced the use of aerial spraying in the project area and that it understood that affected landowners typically owned their own ground sprayers. Several GLG members agreed that ground spraying is generally more widely used than aerial spraying in terms of acres covered, but noted that there are situations where aerial spraying can be a more economical option. K. Hess testified that she used aerial spraying to treat Bertha armyworms, which were eating mature canola pods and that a ground sprayer would have "shelled out" the crop,⁸⁷ reducing her yield.⁸⁸ Both Enel and the GLG agreed that aerial spraying is preferable over ground sprayers during heavy precipitation, for crops at an advanced stage of growth, and when immediate pest or disease control is required.

86. The Commission is satisfied that the GLG members have access to other product application options such as high-clearance ground sprayers. Although high-clearance ground sprayers can generally be relied on in the project area during normal conditions, the Commission understands that the presence of factors such as significant precipitation, urgent pest or disease pressure, or mature crops could necessitate immediate aerial spraying. High-clearance ground spraying therefore may not always provide a viable alternative, especially where a combination of such factors exists. Accordingly, the Commission finds that the loss of the ability to use aerial spraying when required is a negative impact for the GLG. In the next section, the Commission will discuss the extent of this impact with reference to the frequency with which aerial spraying is relied on, and the potential economic impacts if it is not available.

⁸⁵ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 18, paragraph 82.

⁸⁶ Transcript, Volume 4, page 608, lines 2-11.

⁸⁷ In this context, "shelling out" refers to a situation where contact between ground spraying equipment and canola pods causes the canola seeds to fall out.

⁸⁸ Transcript, Volume 4, page 608, lines 4-15.

4.4.2.2 How frequently do GLG members aerial spray in the area and what are the economic impacts if aerial spraying is no longer possible?

87. The Commission understands that aerial spraying has historically been used infrequently in the project area. Ken Wyard-Scott estimated that he has used aerial spraying three times in the last 10 years on specific areas of his land⁸⁹ and K. Hess estimated that she used aerial spraying once in the last five years.⁹⁰

88. The Commission recognizes that it is difficult for landowners to predict a specific occurrence rate for aerial spraying into the future, as conditions that affect aerial spraying can vary greatly depending on factors such as crop type, weather, and disease prevalence. Enel consulted with two aerial spraying companies, Arty's Air and Bravo #1 Aerial Applicator, and some of their customers as part of its participant involvement program. Enel stated that its conversations with aerial spray customers confirmed that aerial spraying was not used regularly and has been largely replaced by high-clearance ground sprayers. The customers would use aerial spraying in the event of a bug or fungicide infestation; however, Enel submitted that those situations are rare.

89. The Commission accepts that aerial spraying occurs in the project area but finds that reliance on aerial spraying is not widespread and the need for aerial spraying changes from year to year. Overall, the Commission finds that aerial spraying does not occur frequently in the project area.

90. The next issue the Commission considers is the potential for economic impacts due to the inability to aerial spray. K. Wyard-Scott testified that he observed crops lost to Bertha armyworm infestations in two days.⁹¹ He and Warren Westover both testified about the financial losses that a farmer would expect to experience if timely access to aerial spraying was not possible due to the project. W. Westover estimated the financial impact associated with the loss of a quarter section of cultivated land, with reference to typical canola yields and prices.⁹² K. Wyard-Scott described the significance of the financial impact associated with the loss of one quarter section.⁹³

91. The Commission recognizes that economic losses due to crop loss can be significant and can occur quickly. However, except in rare circumstances such as extreme precipitation, alternatives such as ground sprayers can be used to treat crops to prevent this economic loss. While the use of ground spraying may damage crops, the Commission finds the lower application cost associated with ground spraying over aerial spraying may offset the crop damage. As discussed above, the Commission has found that aerial spraying activities do not occur frequently which suggests that ground spraying has been generally effective in preventing

⁸⁹ Transcript, Volume 4, page 631, lines 8-11.

⁹⁰ Transcript, Volume 4, page 636, lines 18-19.

⁹¹ Transcript, Volume 4, page 630, lines 11-17.

⁹² Transcript, Volume 4, page 641 line 20 to page 642, line 5. W. Westover estimated that a farmer can produce between 40 and 50 bushels of canola per acre. Assuming 140 acres of cultivated land per quarter section, and a canola price of \$15 per bushel, he submitted that the total value per quarter section in his example of \$84,000 could be lost if timely access to aerial spraying was not possible due to the project. GLG stated that canola prices are currently higher than \$15 per bushel, which further increases the potential financial impact of crop loss.

⁹³ Transcript, Volume 4, page 586, lines 6-23.

crop loss in the past and can continue to do so. Overall, the Commission finds that the risk of economic loss as a result of project impacts on aerial spraying is low.

4.4.2.3 Does Enel’s proposed turbine shut-off protocol adequately mitigate potential adverse impacts in situations where aerial spraying is still possible?

92. While the evidence on the record is not consistent on whether aerial spraying can occur in the presence of the project’s wind turbines, Enel committed to work with landowners on a case-by-case basis to co-ordinate the shutdown or curtailment of turbines to facilitate aerial spraying.⁹⁴ K. Wyard-Scott and K. Hess both testified that the aerial sprayers they worked with in the past have been able to respond to requests in as little as one day. Enel agreed that 24 hours is a sufficient amount of time for it to shut off turbines in response to a notice from a landowner that intends to employ aerial spraying.⁹⁵

93. The Commission finds that while there is infrequent historical use of aerial spraying in the project area, its usage could occur in the future. The Commission also accepts the evidence of the GLG that there are also situations where aerial spraying is required and ground spraying can not be utilized or the use of ground spraying is less desirable. The Commission is therefore satisfied that Enel’s commitment to work with landowners on co-ordinating wind turbine operations with aerial spraying, in a timely manner, provides additional mitigation with respect to the concern. The Commission accepts that aerial spraying applications can be scheduled as quickly as one day in advance, and that 24 hours is a reasonable notice period to shut off or curtail turbines prior to aerial spraying, given the evidence from Enel, K. Wyard-Scott, and K. Hess on this issue.

94. Considering all of the Commission’s findings in Section 4.4.2 of this decision, the Commission finds it reasonable to require, as a condition of project approval, for Enel to develop a turbine shut-off protocol in respect of aerial spraying requests. The protocol must be followed on the request of a landowner in circumstances where the landowner reasonably determines that aerial spraying is required because ground spraying is not feasible. In the interest of ensuring that the shut-off protocol can be engaged in a timely manner, and given that aerial spraying occurs infrequently in the project area, the Commission includes the following condition of approval for the project:

- c. Enel shall implement a turbine shut-off protocol to be followed when it receives a request at least 24 hours in advance of impacted aerial spraying operations. The protocol will include the direct phone number for the site supervisor and the remote-operations control centre, a step-by-step process to identify which turbines should be curtailed, halted and/or yawed, a confirmation of dates and times for planned aerial spraying activities, a process to ensure the site is safe and secure for spraying to occur, and a process to ensure that Enel is notified when spraying is completed.

4.4.3 Summary

95. The Commission is satisfied that the clubroot management plan for the project reasonably mitigates the risk of clubroot and other soil-borne diseases. The Commission finds that the risk of economic loss resulting from project impacts on aerial spraying is low, given that aerial

⁹⁴ Transcript, Volume 2, page 391, lines 3-11.

⁹⁵ Transcript, Volume 5, page 692, lines 8-15.

spraying does not occur frequently in the project area and Enel is required to implement a turbine shut-off protocol in a timely manner in respect of landowners' aerial spraying requests.

4.5 Property value impacts

96. GLG members expressed concern that they would experience negative property value impacts from the project, largely due to the visibility of the project's turbines from their residences. The GLG retained Brian Gettel of Gettel Appraisals Ltd. to assess the impact of the project on surrounding properties. Enel retained Robert Telford of Telford Land & Valuation Inc. to review the potential market value impacts of the project.

97. The Commission has previously affirmed that property valuation is a complex and technical matter that is influenced by a wide variety of contextual and circumstantial factors. For this reason, the Commission has historically required that findings about property value impacts be based on project-specific evidence that is provided by experts and tested or made available for testing in a hearing. More recently, the Commission has acknowledged that project-specific evidence may not always be readily available due to an absence of local sales data. In Decision 26214-D01-2022, for example, the Commission accepted that, in the absence of Alberta-specific data, it may be instructive to consider research conducted on the effects on property values in other jurisdictions. The Commission also considered testimony from landowners in that proceeding regarding negative public perception of a project's effects on viewscales.⁹⁶ In another proceeding, the Commission signaled interest in receiving expert, site-specific, technical evidence on property valuation based on different skills, knowledge, expertise and/or methodologies than has historically been filed and that will contribute to the assessment of a project's impact on property values, if any.⁹⁷

98. While the Commission has broadened its view of what types of evidence can potentially be used to demonstrate property value impacts, the Commission will continue to evaluate whether evidence adduced in a proceeding is reliable and relevant.

99. In the current proceeding, both B. Gettel and R. Telford conducted literature reviews of third-party case studies and reports from other jurisdictions addressing the impacts of wind farms on property values. In his analysis, B. Gettel considered variables that can exert an impact on property values: which include visual effects, noise, shadow flicker, lights, increased traffic, health concerns, land use, effects on wildlife and stigma associated with wind projects. Of these variables, he identified that visual effects (i.e., change to viewscales) would have the strongest influence on property values. B. Gettel reviewed nine studies from Ontario, the United States and Europe. These studies used both paired sales analysis and multiple regression analysis. The multiple regression analysis studies found no impact on property value while the paired sales analysis found between zero and 40 per cent impacts.⁹⁸ R. Telford reviewed nine studies from Ontario and the United States, as well as Gettel's report in this proceeding. In R. Telford's view, there are no conclusive findings from the literature review that would suggest that the proposed project would have any impact on the value of properties in the nearby vicinity.⁹⁹

⁹⁶ Decision 26214-D01-2022: Buffalo Plains Wind Farm Inc. – Buffalo Plains Wind Farm, Proceeding 26214, February 10, 2022, paragraph 32.

⁹⁷ Exhibit 26435-X0138, Property valuation evidence, December 17, 2021, paragraph 3.

⁹⁸ Exhibit 26677-X0099, Appendix I - Evidence and CV of Brian Gettel, page 29.

⁹⁹ Exhibit 26677-X0146, Appendix G - Expert Report and Curriculum Vitae of Rob Telford of Telford, pages 27-28.

100. Although the Commission considers that research conducted on the effects on property values in other jurisdictions may be instructive, prior to placing reliance on a study from another jurisdiction, the Commission must be confident that the study's conclusions are applicable to the circumstances of the application before the Commission. The Commission considers that this will likely require testimony by the author of the study, or someone sufficiently well-versed in its methodology and the characteristics of the region it addresses, who can substantiate its value as a comparator. Given that site-specific knowledge of the regions studied in other jurisdictions is not available in the current proceeding, it is not clear to the Commission that any of the studies cited by B. Gettel or R. Telford are representative of rural Alberta and the Mannville area. As a result, the Commission has given little weight to the conclusions of the studies in making the overall decision.

101. Both B. Gettel and R. Telford also considered empirical methodologies that could be used to measure the impact to property value, including multiple regression analysis or a paired sales analysis. However, both witnesses found insufficient market data to reliably conduct these types of analyses.

102. In R. Telford's view, "looking at value impacts, any impacts identified must always be based on market data, either by way of regression analysis or paired sales analysis. Any adjustment in appraisal must be supported by transactions in the market."¹⁰⁰ B. Gettel agreed that empirical evidence is needed to prove a value impact.¹⁰¹

103. During the hearing, many of the GLG members testified that views of the wind turbines will negatively impact their property value, despite the inconclusive findings of the expert reports. As an example, W. Westover argued that if it makes sense that an ocean view, a river valley view and a mountain view can increase property value, then similarly it makes sense that a view of a wind turbine could decrease the value of a property.¹⁰² As another example, L. Tapley testified that the potential for the project to be constructed had a negative impact on her ability to sell her home. She stated that multiple buyers cancelled their viewings once they became aware of the project.¹⁰³

104. In B. Gettel's report, he considered a combination of literature review, paired-sales, case studies, and professional experience to categorize value impacts caused by external nuisances. B. Gettel estimated the GLG members could experience a low impact, with a potential decrease in property value between zero and 10 per cent, if the project were built.¹⁰⁴ He explained that building sites with residences would be the type of properties which could be negatively impacted by the project, and that under typical circumstances farmland would not be impacted, unless such farmland were vacant and could be contemplated for building site development in the future.¹⁰⁵ In the absence of the ability to reliably determine property value impacts using empirical data, the Commission finds that B. Gettel's approach is reasonable for estimating property value impacts in the circumstances, given his application of professional judgment, his consideration of the external nuisances identified in the literature, and that his assessment of

¹⁰⁰ Exhibit 26677-X0146, Appendix G - Expert Report and Curriculum Vitae of Rob Telford of Telford, page 30.

¹⁰¹ Transcript Volume 3, page 497, lines 16-18.

¹⁰² Transcript, Volume 4, page 563, lines 3-19.

¹⁰³ Transcript, Volume 4, page 570, lines 7 to 13.

¹⁰⁴ Exhibit 26677-X0099, Appendix I - Evidence and CV of Brian Gettel, PDF page 31.

¹⁰⁵ Exhibit 26677-X0099, Appendix I - Evidence and CV of Brian Gettel, page 30.

negative value impacts is consistent with many of the concerns raised by GLG members regarding the same.

105. The project will alter the landscape of the area. The Commission accepts that change to viewscales is one factor that will influence an individual's perception of the area as a place to reside. Despite evidence from Enel and R. Telford that potential property value impacts are inconclusive, the evidence from the GLG members and B. Gettel suggests that the project may result in negative effects to property value resulting from the general presence of the wind farm. In the absence of reliable empirical data regarding property market impacts, the Commission attributes greater weight to the evidence in B. Gettel's report and the opinions provided by GLG members. Accordingly, the Commission finds sufficient evidence to establish that there is a negative public perception of the project's effects on viewscales, and this may translate into a negative effect on property value for some properties, in the range of zero to 10 per cent. The Commission recognizes that this is a consequence of the project that needs to be balanced against the project's public benefits.

4.6 Consultation issues

106. In this section of the decision, the Commission addresses consultation issues. The Commission first finds that Enel's visual simulations are reasonable but with some reservations. Second, the Commission finds the participant involvement program meets the requirements of Rule 007.

4.6.1 Are Enel's visual simulations reasonable?

107. Enel retained Green Cat to produce photomontages from multiple viewpoints to demonstrate what stakeholders would see, or the visual impact, following the installation of project turbines. During the participant involvement program, Green Cat prepared photomontages to represent views that local residents and commuters would experience from four cardinal directions surrounding the project.¹⁰⁶ In response to a GLG information request, Green Cat prepared additional photomontages for a number of residences owned by the GLG members.¹⁰⁷ C. Sutherland testified that a representative from Green Cat visited the sites, talked to the residents and identified viewpoints within the properties that would be typical of use at the properties in everyday life.¹⁰⁸

108. Some of the GLG members testified that the photomontages provided by Enel did not depict the most representative view. L. Tapley testified that the photo provided to her was from a viewpoint between her deck and garage, and that a view from the deck, where she spends most of her time, would be more representative. She submitted that Green Cat did not request her input regarding which location should be used.¹⁰⁹ C. Obrigewitch testified that the photos from her driveway were not a good location. She indicated that she asked Green Cat to retake the

¹⁰⁶ Exhibit 26677-X0020, Attachment L3 - GBC_PIP Appendices E-G, PDF pages 8-11.

¹⁰⁷ Exhibit 26677-X0140, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part1); Exhibit 26677-X0141, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part2); Exhibit 26677-X0142, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part3); Exhibit 26677-X0143, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part4).

¹⁰⁸ Transcript, Volume 2, page 305, lines 1-11.

¹⁰⁹ Transcript, Volume 4, page 575, lines 6-25.

photos but was told the driveway view was accurate enough.¹¹⁰ K. Wyard-Scott added that his photomontage was taken from the edge of his driveway and did not represent his typical view.¹¹¹

109. The Commission finds sufficient evidence to establish that Green Cat did not consider all landowner preferences when selecting photo sites to depict typical views. Given that Enel used these photomontages, as a tool for consultation, specifically to address visual concerns of the landowners, the Commission observes that using the landowners' recommendations for photo sites to determine viewpoints would be more effective for addressing their concerns. While the Commission recognizes that in some circumstances a landowner may not grant an applicant access to their property, therefore limiting the ability of an applicant to capture certain visual impacts, this does not appear to be the case here as both L. Tapley and C. Obrigewitch testified that they spoke to Green Cat and they both appeared amenable to providing access to their land. In the Commission's view, Green Cat should have relied more on landowner feedback in selecting photo sites in order to achieve a more collaborative consultation process.

110. However, the Commission agrees with Enel that the purpose of the visual simulations is not to capture every possible viewpoint and accepts Enel's explanation that it selected the specific visual simulation locations on the GLG properties in order to provide the best balance between the most impacted view and the most representative view.¹¹² Overall, the Commission finds that these visual simulations provided a reasonable representation of the visual impact of the turbines and project layout.

4.6.2 Does Enel's participant involvement program meet the requirements of Rule 007?

111. Enel acquired the project from E.ON, the previous approval holder, and notified stakeholders of the ownership change in December 2019. Enel commenced its participant involvement program in July 2020, in accordance with Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments and Gas Utility Pipelines* and Bulletin 2020-13: *Interim changes to AUC participation involvement program and related information requirements*. Enel provided information packages to all stakeholders within 2,000 metres of the project boundary, as well as to stakeholders that are no longer within 2,000 metres, but who were notified of the original project application.

112. Some GLG members submitted that they were not consulted while others expressed dissatisfaction with the level of information provided by Enel. GLG members clarified that while Enel contacted them via phone and email, they did not speak in person. GLG members considered the consultation to be of low quality and did not feel that their concerns were taken seriously. As an example, the GLG submitted that one of its members asked Enel about GPS interference but did not receive a response. Enel testified that its consultation records did not indicate the question was asked.¹¹³

113. Enel submitted that its usual consultation methods were amended to accommodate the health risks associated with the COVID-19 pandemic as well as to comply with the AUC's Bulletin 2020-13, which discouraged face-to-face consultation. In view of this, Enel submitted

¹¹⁰ Transcript, Volume 4, page 601, line 21 to page 602, line 2.

¹¹¹ Transcript, Volume 4, page 591, line 20 to page 592, line 9.

¹¹² Exhibit 26677-X0140, ENEL-GLG-2021OCT12-034 Response (Photomontages_Part1), PDF page 1.

¹¹³ Transcript, Volume 1, page 164, line 25 to page 165, line 3.

that it was not possible for it to engage in face-to-face consultation with stakeholders or hold open houses regarding the project for the duration of the participant involvement program. Enel confirmed that it contacted stakeholders within 800 metres of the project area directly by phone call and followed up via phone or email. Enel submitted that its consultation records show it consulted with each of the GLG members, with the exception of those members who declined consultation. Enel stated that it attempted to address stakeholder concerns as they arose. As examples, Enel provided customized photomontages of the project from the personal residences of the GLG members concerned about visual impacts and committed to Level 3 cleaning to address the clubroot concerns of the Mytz family.

114. The Commission is satisfied that Enel's participant involvement program for the project meets the applicable Rule 007 requirements, especially in light of the pandemic. In making this finding, the Commission notes that Enel mailed multiple project information packages to stakeholders, and conducted direct consultation meetings with stakeholders by phone and email correspondence. Enel also exceeded the notification radius recommended in Rule 007 to match the consultation radius of the original application. The Commission appreciates that residents may prefer face-to-face discussions, however, the Commission finds that Enel's approach to consultation complies with all applicable requirements having regard to the unique challenges posed by the COVID-19 pandemic.

115. While Enel was unable to resolve all outstanding concerns, the Commission is satisfied, based on the consultation records and the evidence in this proceeding, that Enel's participant involvement program generally achieved the purpose of consultation. That is, through Enel's participant involvement program, GLG members were given sufficient information to understand the nature of the project, identify areas of concern and engage in dialogue with Enel with the goal of eliminating or minimizing those concerns.

116. The GLG requested that project applicants be required to verify their consultation records with landowners before submitting applications with the Commission. While the Commission does not require this in Rule 007, the Commission finds benefits to this approach and encourages all applicants to consider doing so in order to increase transparency and efficiency.

4.7 Construction and reclamation

4.7.1 Will construction traffic and dust impacts be appropriately mitigated?

117. The GLG expressed concerns that the project construction activities would bring increased dust, noise, and traffic impacts, from the time of initial surveying through to the actual construction of project infrastructure.¹¹⁴

118. The Commission considered construction noise in Section 4.1.6 and found that Enel will generally comply with Section 2.11 of Rule 012 to manage the construction noise.

119. With respect to construction traffic and dust, Enel confirmed that it would develop a road use agreement with the counties to ensure traffic is managed appropriately and road conditions are maintained. Enel explained that it would use staging areas to ensure construction vehicles do not interfere with traffic and would implement standard dust control measures.¹¹⁵ Enel emphasized that it is required to ensure roads are maintained or repaired to a condition that is

¹¹⁴ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF page 15, paragraphs 41-42.

¹¹⁵ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 14, paragraph 61.

equal to or better than they were prior to construction. In addition, Enel confirmed that appropriate dust control and suppression measures will be implemented during project construction.¹¹⁶

120. The Commission finds that the road use agreement that Enel is obliged to enter into with the counties and Enel's commitment to implement dust control measures reasonably address the GLG's concerns about construction dust and traffic impacts.

4.7.2 Should Enel be required to set aside funds for reclamation and decommissioning, or provide some other form of reclamation security?

121. The GLG questioned whether Enel has adequate funds to properly decommission the project. It argued that funds should be set aside for decommissioning rather than relying on salvage value of the infrastructure.¹¹⁷

122. Enel explained that while it does not set aside funds in a special account, estimated reclamation costs are included in the operating and maintenance project budget, and therefore Enel has accounted for decommissioning and reclamation by considering these reclamation costs as part of the capital expense of the project.¹¹⁸

123. Enel explained that it prepared a conservation and reclamation plan for the project and confirmed that it would diligently pursue reclamation efforts in accordance with this plan and all applicable legislative and regulatory requirements.¹¹⁹ Enel emphasized that it has a contractual obligation through its lease agreements with landowners that host project infrastructure be removed and that it also has a duty to reclaim under Section 137 of the *Environmental Protection and Enhancement Act*.¹²⁰ In addition, Enel committed to decommission and reclaim the project in accordance with applicable AEP regulations at the end of the project's useful life. Enel clarified that until it has received a reclamation certificate from AEP, Enel cannot discharge the surface leases and must continue to make lease payments to the landowners.¹²¹

124. The Commission is satisfied that existing reclamation requirements, including Enel's lease agreements with project host landowners and the applicable legislative regulations, adequately address Enel's reclamation responsibilities at the project's end of life. Given that the legislature has afforded AEP with the authority to designate the construction and operation of renewable power generation facilities as activities requiring security to be posted,¹²² as well as the authority over the process and actual physical remediation and reclamation of the power generation facilities,¹²³ the Commission does not grant the GLG's request to require Enel to create a reclamation or decommissioning fund.

¹¹⁶ Transcript, Volume 5, page 708, lines 12-22.

¹¹⁷ Exhibit 26677-X0103, GLG Group Submission 2021 11 25, PDF pages 15-16, paragraphs 44-46.

¹¹⁸ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 15, paragraph 65.

¹¹⁹ Transcript, Volume 5, page 708, line 25 and page 709, lines 1-12.

¹²⁰ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 15, paragraph 68.

¹²¹ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 16, paragraph 71.

¹²² *Conservation and Reclamation Regulation*, Alta Reg 115/1993, s 18(1)(a-d).

¹²³ *Environmental Protection and Enhancement Act*, RSA 2000, c E-12 and associated regulations.

4.8 Environmental and wildlife impacts

125. In this section of the decision, the Commission first describes how the AEP renewable energy referral report process fits into the Commission's decision-making process. Next, the Commission discusses the adequacy of surveys completed for the project. Then, the Commission analyzes the project's impact on wetlands. Finally, the Commission discusses the project's impacts to birds and bats.

4.8.1 Background

126. Enel retained Tetra Tech Canada Inc. to complete an environmental evaluation for the project. The environmental evaluation report concluded that the project's predicted residual effects for each valued ecosystem component assessed are not significant and there are no residual effects anticipated post-implementation of the recommended environmental mitigation. Enel filed a project update once the final turbine models and locations were selected. The updated project reduced the disturbance area, decreased the amount of wetland impacted, and reduced the impact to known black tern nesting colonies. Enel submitted that the project update further reduced the potential environmental effects and that the predicted residual effects for each valued ecosystem component assessed remain not significant.¹²⁴

127. In a renewable energy referral report issued on July 13, 2021, AEP assessed the project as having an overall moderate risk to wildlife and wildlife habitat based on project siting, avoidance of high quality habitat, high wetland impacts, mortality risk to birds, and commitments made by Enel to mitigate and monitor wildlife impacts. The Commission notes that the referral report was prepared based on the original project layout, as applied for in July 2021, when the total number of turbines and other aspects of the project had not been finalized. The Commission also notes that the November 2021 project update did not trigger the requirement for a referral report amendment from AEP and therefore, the AEP referral report was not amended to reflect the updated project. However, as compared to the original project layout assessed by AEP, the updated project contains fewer turbines and as concluded by Tetra Tech, potential negative impacts to some aspects of the environment have been reduced.

128. The GLG raised environmental concerns with the project, including issues related to the adequacy of the surveys, as well as the potential impacts on wetlands and amphibians, birds and bats. The GLG retained Cliff Wallis of Cottonwood Consultants Ltd. to prepare an expert report that addressed these concerns.

4.8.2 How does the Commission consider and use renewable energy referral reports?

129. Rule 007 requires applicants for wind energy projects to file with the Commission the renewable energy referral report issued by AEP. This is one of several application requirements relating to the environmental effects of a project, including the requirement to provide an environmental evaluation that is conducted or overseen by someone with accredited experience and expertise.

130. The Commission considers that AEP referral reports provide a valuable perspective because they come from independent wildlife professionals with experience assessing the environmental impacts of wind energy projects in Alberta. However, for clarity, the Commission considers all relevant materials on the record, including evidence filed by applicants and

¹²⁴ Exhibit 26677-X0091, Grizzly Bear Creek Wind Project Project Update, PDF pages 10-17.

interveners and any evidence provided in the oral hearing, when assessing the adverse environmental effects of a proposed project, and determining whether those effects can be mitigated. The Commission does not rely solely on the referral report to the exclusion of other relevant evidence.

131. The Commission acknowledges that AEP has not reviewed the updated project and has not provided an updated referral report based on the new layout. Enel indicated that it would request AEP's feedback regarding the project update and would file any response received on the record of this proceeding, if required by the Commission. Nevertheless, the Commission finds that the information on the record of this proceeding is sufficient for the Commission to assess the project's impacts on the environment and to make its public interest determination. Notably, the changes to the project since the issuance of the referral report include a reduction to the total number of turbines, with a corresponding reduction to wetland impacts, and further evidence about the updated project layout was provided by Enel's expert witnesses in writing and through cross-examination at the hearing.

4.8.3 Are the environmental surveys conducted for the project adequate?

132. The GLG's expert, C. Wallis asserted that the wetland and wildlife surveys were flawed because they were not focused sufficiently on bird and amphibian species of concern and numerous wetlands within 1,000 metres of turbines were not included. He recommended that, if approved, Enel be required to conduct additional field surveys in the wetlands and ephemeral water bodies that are within setback buffers, with a focus on amphibian, breeding birds and migratory birds.¹²⁵ C. Wallis also recommended that consideration be given to conducting nocturnal migrant bird studies because these surveys were not done.¹²⁶

133. Enel stated that its surveys were comprehensive, designed in consultation with AEP and complied with AEP's *Wildlife Directive for Alberta Wind Energy Projects* (the Directive). It noted that the Directive does not require 100 per cent survey coverage and that survey locations were distributed throughout the project area, as required by the Directive.¹²⁷ Enel rejected nocturnal surveys as it did not understand how these surveys would improve its ability to design or implement operational mitigation measures that would reduce bird mortalities. Tetra Tech submitted that the post-construction monitoring program was a more effective approach to identify mortality rates, that allows for adaptive management in consultation with AEP.¹²⁸

134. The Commission finds that Enel's wetland and wildlife surveys were conducted in accordance with AEP standards and protocols, including the *Sensitive Species Inventory Guidelines* and the Directive. In particular, Tetra Tech confirmed that the surveys for amphibians and sharp-tailed grouse were completed according to the *Sensitive Species Inventory Guidelines*. Tetra Tech emphasized that wildlife survey data it collected across many years and in various seasons each year provides broad coverage that goes beyond the requirements of the Directive.¹²⁹

¹²⁵ Exhibit 26677-X0101, Appendix E - Evidence of Cliff Wallis, PDF page 46.

¹²⁶ Exhibit 26677-X0101, Appendix E - Evidence of Cliff Wallis, PDF page 62.

¹²⁷ Exhibit 26677-X0153.01, Enel Reply Evidence, PDF page 11, paragraph 48.

¹²⁸ Exhibit 26677-X0145.01, Appendix E - Expert Report and Curricula Vitae of Jeff Matheson and Ryan Adams of Tetra Tech Canada, PDF page 27.

¹²⁹ Exhibit 26677-X0145.01, Appendix E - Expert Report and Curricula Vitae of Jeff Matheson and Ryan Adams of Tetra Tech Canada, PDF page 23.

Given AEP's specific expertise in managing wildlife, the Commission places considerable weight on an applicant's compliance with applicable AEP standards and protocols.

135. With respect to detecting species of concern, there are two approaches on the record: surveys in representative areas of the project with use of the information to develop project-wide mitigation measures, and surveys conducted to determine the exact location of species of concern so that the project can avoid them. Tetra Tech conducted the former, C. Wallis of Cottonwood favoured the latter. While both methods have advantages and disadvantages, the Commission accepts that the approach employed by Tetra Tech is adequate. While the Directive recommends avoidance as the strongest mitigation measure, it allows for other mitigation measures to minimize impacts. As is discussed in the subsequent sections of this decision, Enel has demonstrated that it has attempted to avoid sensitive species, and has proposed mitigation measures to minimize impacts where avoidance could not be achieved. The Commission also finds that wildlife locations are not static; therefore mitigation measures proposed over the larger project area are preferable to location-specific mitigation, provided that the type of species of concern within the project area are understood and appropriate mitigations have been developed.

136. C. Wallis identified, in particular, the western (barred) tiger salamander as a species of concern that was not adequately surveyed and located and argued that Enel should have made additional efforts to identify breeding wetlands for the salamander. The Commission finds that the mitigation measures proposed by Enel are reasonable and include all amphibians including this salamander. These measures include avoiding construction in wetlands and water bodies during the amphibian breeding season, conducting and the use of exclusionary and silt fencing, and the hiring of a qualified environmental monitor with stop-work authority to oversee construction and ensure compliance with mitigation measures. The work of the environmental monitor will also fill in information gaps about the exact locations of sensitive species, identify other issues of concern that were not anticipated in the various studies done prior to construction, and support immediate action to minimize negative effects.

137. In summary, the Commission finds that additional amphibian, breeding bird, migratory bird and nocturnal bird surveys, as requested by the GLG are not required, as the surveys and proposed mitigation are sufficient. Enel developed its survey sites in consultation with AEP, and developed project-wide mitigation measures informed by these surveys. AEP accepted the proposed mitigations including the environmental monitor. In addition, Enel is required to conduct a post-construction monitoring program, report its findings to AEP, and apply additional mitigation and additional monitoring should AEP deem it is required. This adaptive approach should help mitigate any negative impacts to wildlife that occur during the project's operation as they arise.

4.8.4 Are the project's impacts to wetlands acceptable?

138. Wetlands are an essential habitat for the survival and flourishing of various kinds of wildlife. Tetra Tech's environmental evaluation stated that wetlands and other water bodies provide numerous ecological functions including but not limited to groundwater recharge and discharge, flood retention, water purification, and habitat for wildlife and vegetation species which may have cultural and/or economic value.¹³⁰ Although AEP gave an overall rating of moderate to the project's impact on wildlife and wildlife habitat, it rated the risk to wetlands as high because the project originally infringed on 503 wetland setbacks. Enel subsequently

¹³⁰ Exhibit 26677-X0017, Attachment E - GBC Environmental Evaluation, PDF page 37.

updated the project layout and its proposed approach to wetlands by reducing the infringements to setbacks from 503 to 329 and its direct wetland impact from 125 instances to 38. Enel also committed to a number of mitigation efforts including:¹³¹

- reclamation of temporary wetland impacts
- minimizing soil stripping
- stockpiling soil separately for reclamation
- restoring slopes and landscape contours, restoring topography and hydrology to approximate pre-disturbance wetland conditions
- seeding reclaimed areas as required
- wildlife sweeps prior to disturbance
- use of exclusionary fencing
- hiring of an environmental monitor overseeing construction with stop-work authority

139. The GLG argued that, notwithstanding the reduced number of affected wetlands and mitigation efforts, the actual wetland infringements and impacts caused by the project were greater than contemplated by Tetra Tech or AEP because many wetlands and ephemeral water bodies have not been properly mapped.¹³² It also pointed out that the reclaimed wetlands may not see the return of sensitive species that use these wetlands because of the initial disturbance.¹³³ C. Wallis emphasized that under the wetland mitigation hierarchy, the primary and preferred response is to avoid all impacts on wetlands rather than rely on other mitigation practices.¹³⁴

140. The Commission finds that the project is in compliance with the Directive and that Enel has applied the principles of avoidance and mitigation appropriately in siting the project. Its mitigation plan outlined above will limit construction footprint disturbances to a temporary time frame with the operational footprint that directly impacts wetlands limited to 0.42 hectares.¹³⁵ Although AEP's initial rating of a high risk for wetlands has not been reviewed by AEP since the mitigation updates (i.e., AEP did not complete a referral report amendment to assess the updated project layout or assign an updated risk ranking), the Commission is satisfied that there is a significant reduction in adverse impacts to wetlands. The siting of the project on cultivated pre-disturbed lands also somewhat mitigates the impacts, although the Commission acknowledges that sensitive species use wetlands associated with cultivated lands.

141. The Commission finds that wildlife sweeps prior to disturbance, the use of exclusionary fencing, and the presence of an environmental monitor with stop-work authority will further reduce the project's impacts. The Commission finds that while not all wetlands were surveyed by Enel, the proposed mitigation measures provide assurances that issues can be identified prior to construction. The environmental monitor is able to assess potential environmental issues in a

¹³¹ Exhibit 26677-X0145.01, Appendix E - Expert Report and Curricula Vitae of Jeff Matheson and Ryan Adams of Tetra Tech Canada, PDF page 20; Transcript, Volume 5, page 699, lines 3-10.

¹³² Transcript, Volume 5, page 748, lines 3-11.

¹³³ Transcript, Volume 5, page 751, lines 1-15.

¹³⁴ Exhibit 26677-X0101, Appendix E - Evidence of Cliff Wallis, PDF page 36.

¹³⁵ Exhibit 26677-X0145.01, Appendix E - Expert Report and Curricula Vitae of Jeff Matheson and Ryan Adams of Tetra Tech Canada, PDF page 20.

time frame more closely aligned with construction than pre-construction surveys and is able to provide more targeted mitigations to minimize impacts.

142. The Commission agrees that the area of directly impacted wetlands is relatively small and finds that Enel's proposals regarding restoring the wetlands to the equivalent land capability as the pre-disturbance state, as required under the *Alberta Wetland Mitigation Directive*,¹³⁶ will minimize the project's long-term impacts.

143. In summary, given the reduced number of setback infringements for wetlands, the reduction in wetlands directly impacted during operation, the commitment to wetland reclamation and the implementation of Enel's proposed mitigations, the Commission finds that the project's potential impacts on wetlands have been considered by Enel, the mitigations proposed are reasonable and any potential impacts are expected to be reduced to an acceptable level.

4.8.5 Are the project's impacts to birds and bats acceptable?

144. The project's footprint is adjacent to environmentally significant areas which are used by migratory waterfowl and bats and which initially attracted a high risk ranking to breeding birds and bird mortality from AEP because of the high diversity and abundance of species at risk. For example, the original project layout infringed 100-metre setbacks for 13 raptor nests and infringed 1,000-metre setbacks for four black tern breeding sites as well as infringed on numerous setbacks for wetlands used by waterfowl. The issue for the Commission to consider is whether the mitigation proposals from Enel are satisfactory given the *Alberta Wetland Mitigation Directive's* primary guidance to avoid these habitats. Enel attempted to avoid wetlands or minimize the setback infringements, and faced competing constraints in meeting the wetland directive such as the need to minimize the impacts of noise and shadow flicker on nearby receptor locations (residences).

145. C. Wallis questioned whether Enel's mitigation plans provided adequate protection of wildlife in the absence of avoiding important wildlife habitat in the project footprint. He submitted, for example, that the 1,000-metre setback for black terns should be complied with all year round and that the project, if approved, should be conditional upon Enel implementing a mitigation framework that is effective for waterfowl. C. Wallis also submitted that three years of post-construction wildlife monitoring was not sufficient and recommended monitoring for the life of the project.¹³⁷

146. The Commission finds that while the *Alberta Wetland Mitigation Directive's* overriding goal is to avoid disturbing these rich wildlife habitats, it does provide for some flexibility where avoidance is not possible if effective mitigation measures are established in discussion with AEP.

¹³⁶ Exhibit 26677-X0145.01, Appendix E - Expert Report and Curricula Vitae of Jeff Matheson and Ryan Adams of Tetra Tech Canada, PDF page 22.

¹³⁷ Exhibit 26677-X0101, Appendix E - Evidence of Cliff Wallis, PDF pages 2-5.

147. Enel developed the following mitigation measures in response to AEP's high risk ranking to breeding birds and bird mortality:¹³⁸

- Eliminate the setback infringements on the six known raptor nests and two known black tern nests leaving the two remaining turbines closest to the black tern nests 748 metres and 812 metres away.
- Site the rotor swept areas for all turbines outside of the setbacks for known tern and raptor nests.
- Monitor raptor nests infringed by the project for three years following construction to record occupancy and activity status in accordance with the *Sensitive Species Inventory Guidelines*.
- Inspect recorded nest areas prior to construction as part of the overall project wildlife sweeps and adjust the construction footprint and schedules if signs of disturbance are observed.
- Complete construction outside of the nesting period.
- Hire an on-site environmental monitor with stop-work authority to ensure mitigations are properly applied.
- Complete a comprehensive post-construction monitoring plan which has been approved by AEP.

148. The Commission finds that the project is in compliance with the Directive with respect to birds, taking account of the mitigation measures planned by Enel. A project may not always comply completely with the avoidance principle in the Directive because associated impacts to people and wildlife need to be balanced. Where setback infringements occur, applicants must ensure that mitigation measures and post-construction monitoring is in place to minimize adverse impacts to an acceptable level.

149. Enel's proposed mitigations and monitoring program adequately address the potential impacts to birds, including waterfowl. If the post-construction monitoring program indicates that wildlife impacts are greater than expected, AEP can direct additional monitoring and mitigation measures, meaning that the post-construction monitoring program is not necessarily limited to three years. Enel confirmed that additional spring and fall migratory bird surveys will be conducted in 2023, after project construction is complete.

150. In summary, with respect to impacts to birds, the Commission finds that Enel has applied the principles of avoidance and mitigation reasonably in siting the project. The project was initially given a high risk ranking by AEP for its impacts on breeding birds and bird mortality, but the changes included in the project update have reduced the project's impacts in a meaningful way.

151. AEP initially assigned a high risk to bat mortality based on the bat survey results from the project area but reduced the rating to moderate when it factored in Enel's commitment for post-construction monitoring. Equally important, was Enel's plan to implement a cut-in speed of

¹³⁸ Exhibit 26677-X0091, Grizzly Bear Creek Wind Project Project Update, PDF pages 15-16; Exhibit 26677-X0145.01, Appendix E - Expert Report and Curricula Vitae of Jeff Matheson and Ryan Adams of Tetra Tech Canada, PDF pages 25 and 28.

seven metres per second (m/s) at 20 turbine locations, during the bat migration period (July 15 to September 15) from one hour after sunset to one hour before sunrise. Enel would implement a cut-in speed of 5.5 m/s at the remaining 14 turbine locations over the same time period.¹³⁹ These measures would constitute a baseline operating condition during the migratory bat period and may be adjusted based on results from the post-construction monitoring.¹⁴⁰ At the hearing, Enel also committed to conduct a pilot study to test a bat deterrent system and assess its effectiveness in Alberta's climate.¹⁴¹

152. C. Wallis stated that there is the potential for a higher risk to bat mortality, given the mix of woodlands and the high density of wetland as potential feeding areas. He recommended that the curtailment measures and bat deterrent system be conditions of approval should the project be approved.

153. The Commission finds that the proposed mitigations and monitoring, along with Enel's commitment to implement reduced turbine speeds during bat migration season as a baseline operating condition and a bat deterrent pilot project, are reasonable mitigation efforts to protect bats in the project area. The development of a bat deterrent system merits particular note as such a system is new for wind farm projects in Alberta.¹⁴² AEP gave the project's impacts on bats a moderate risk ranking in its referral report and the Commission agrees with AEP's assessment. The Commission expects Enel to uphold its commitments to implement these mitigation measures. In particular, the Commission is interested in the results of the effectiveness of bat deterrent systems in Alberta and has imposed the following condition of approval.

- d. Enel shall report the results of the bat deterrent pilot program to the Commission. The report shall be filed within one year after the pilot program has been completed.

154. Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants* requires approval holders to submit to AEP and the AUC annual post-construction monitoring survey reports. Consequently, the Commission imposes the following as a condition of approval for the Grizzly Bear Creek Wind Power Project:

- e. Enel shall submit a post-construction monitoring survey report to Alberta Environment and Parks (AEP) and the Commission no later than January 31 of the year following the mortality monitoring period, and on or before the same date every subsequent year for which AEP requires surveys pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants*.

5 Conclusion

155. The Commission explained the legislative scheme in place for the consideration and approval of power plants in Alberta in Section 3 of this decision. In this conclusion, the Commission summarizes its findings made above, and applies the legislative scheme in light of

¹³⁹ Exhibit 26677-X0091, Grizzly Bear Creek Wind Project Project Update, PDF pages 16.

¹⁴⁰ Exhibit 26677-X0110.01, 26677 - Enel Alberta Wind Inc Response to AUC Round 3 IRs 18nov21, PDF pages 13-14.

¹⁴¹ Exhibit 26677-X0193, Letter to AUC - Enel Undertaking Responses, PDF page 6; Transcript, Volume 1, page 92, lines 15-18; Transcript, Volume 2, page 360, lines 8-19.

¹⁴² The Commission understands that Enel has not decided on the specific bat deterrent system that it will test at this time.

those findings. In doing so, the Commission weighs the benefits of the project against its negative impacts.

156. In accordance with Section 17 of the *Alberta Utilities Commission Act*, in addition to any other matters it may or must consider, the Commission must give consideration to whether approval of the project is in the public interest having regard to its social and economic effects and effects on the environment. The Commission considers that the public interest will be largely met if an application complies with existing regulatory standards, and the project's public benefits outweigh its negative impacts, including those experienced by more discrete members of the public.

157. The Commission has determined that many of the negative impacts associated with the project are minimal in nature and have been adequately addressed through mitigation.

158. With respect to noise, the project is expected to be compliant with Rule 012 at all receptors, and Enel will generally adhere to mitigation measures for construction noise set out in Rule 012. The potential shadow flicker impacts of the project will not exceed 13 hours per year at any receptor.

159. Based on the evidence before it, the Commission has found no reason to conclude that the project will cause or exacerbate adverse health effects. The Commission is also satisfied that a municipal road use agreement and dust control measures will adequately address the GLG's concerns about construction dust and traffic impacts.

160. The Commission recognizes the GLG's concerns about environmental impacts and future project reclamation but is satisfied that the environmental impacts of the project can be adequately mitigated and that existing reclamation requirements, including the requirement to obtain a reclamation certificate, address Enel's responsibilities at the project's end of life.

161. The Commission is satisfied that the clubroot management plan for the project reasonably mitigates the risk of clubroot and other soil-borne diseases. The Commission recognizes that a potential loss of the ability to aerially spray when required is a negative impact for the GLG. However, the Commission finds that the risk of economic loss resulting from project impacts on aerial spraying is low, having regard to the frequency of aerial spraying in the project area and the availability of alternatives.

162. The Commission finds sufficient evidence to establish that there is a negative public perception of the project's effects on viewsapes, and this may translate into a negative effect on property value for some properties, in the range of zero to 10 per cent.

163. Having determined that the project will result in some negative impacts, the Commission must weigh these impacts against the project's public benefits, in order to determine whether the project is in the public interest. The benefits of the project include its ability to generate 152.1 megawatts of emissions-free electricity and contribute to the diversification of Alberta's energy resources. As described by Enel, the project is expected to generate over \$80 million in local tax revenues, and represent a significant capital investment in the counties of Minburn No. 27 and Vermilion River. The construction phase of the project will create temporary construction jobs and contribute to the surrounding communities through contracting opportunities for local businesses and demand for local services including excavation, civil

works, snow removal, road maintenance, fencing and reclamation. Once operational, the project will create two long-term operator positions for full-time local employees.

164. Overall, for the reasons outlined in this decision and subject to the conditions in Appendix C, the Commission finds that Enel has satisfied the requirements of Rule 007 and Rule 012, and that the negative impacts of the project can be mitigated to an acceptable degree and are outweighed by the benefits of the project.

165. The Commission finds that approval of the project is in the public interest.

6 Decision

166. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 26677-A001 and grants Enel Alberta Wind Inc. the approval set out in Appendix 1 – Approval 26677-D02-2022, to construct and operate the Grizzly Bear Creek Wind Power Plant.

167. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 26677-A002 and grants Enel Alberta Wind Inc. the permit and licence set out in Appendix 2 – Permit and Licence 26677-D03-2022, to construct and operate the Grizzly Bear Creek Wind Power Project 708S Substation.

168. The appendixes will be distributed separately. Power Plant Approval 26612-D02-2021 and Substation Permit and Licence 26612-D03-2021 are hereby rescinded.

Dated on May 5, 2022.

Alberta Utilities Commission

(original signed by)

Douglas A. Larder, QC
Vice-Chair

(original signed by)

Neil Jamieson
Commission Member

(original signed by)

Cairns Price
Commission Member

Appendix A – Proceeding participants

Name of organization (abbreviation) Company name of counsel or representative
Enel Alberta Wind Inc. Terri-Lee Oleniuk Nicole Bakker
Grizzly Landowner Group (GLG) Richard Secord Ifeoma Okoye

Alberta Utilities Commission
Commission panel Douglas A. Larder, QC, Vice-Chair Neil Jamieson, Commission Member Cairns Price, Commission Member
Commission staff Meghan Anderson (Commission counsel) Jaimie Graham (Commission counsel) Joan Yu Victor Choy

Appendix B – Oral hearing – registered appearances

Name of organization (abbreviation) Name of counsel or representative	Witnesses
Enel Alberta Wind Inc. Terri-Lee Oleniuk Nicole Bakker	Ryan Ancelin Shaun Andrews Christopher Poitras Michael Stafford Jeff Matheson Ryan Adams Mark Fawcett Cameron Sutherland Christopher Ollson Robert Telford
Grizzly Landowner Group (GLG) Richard Secord Ifeoma Okoye	Cliff Wallis Brian Gettel James Farquharson Ronald Howard Warren Westover Candice Obrigewitch Laura Tapley Ken Wyard-Scott Karen Hess

Appendix C – Summary of Commission conditions of approval in the decision

This section is intended to provide a summary of all conditions of approval specified in the decision for the convenience of readers. Conditions that require subsequent filings with the Commission will be tracked as directions in the AUC's eFiling System. In the event of any difference between the conditions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

The following are conditions of Decision 26677-D01-2022 that require subsequent filings with the Commission and will be included as conditions of Power Plant Approval 26677-D02-2022:

- a. Enel Alberta Wind Inc. shall conduct a post-construction comprehensive sound level survey, including an evaluation of low frequency noise, at receptors R1, R8 and R55. The post-construction comprehensive sound level survey must be conducted under representative conditions and in accordance with Rule 012: *Noise Control*. Within one year after the project commences operations, Enel shall file a report with the Commission presenting measurements and summarizing results of the post-construction comprehensive sound level survey.
- b. Enel shall file a report with the Commission detailing any complaints or concerns it receives from local landowners regarding shadow flicker from the project during its first year of operation, as well as Enel's response to the complaints or concerns. If Enel implements mitigation to reduce shadow flicker impacts, the report shall detail the mitigation measures and associated stakeholders' feedback regarding the mitigation. Enel shall file this report no later than 13 months after the project becomes operational.
- d. Enel shall report the results of the bat deterrent pilot program to the Commission. The report shall be filed within one year after the pilot program has been completed.
- e. Enel shall submit a post-construction monitoring survey report to Alberta Environment and Parks (AEP) and the Commission no later than January 31 of the year following the mortality monitoring period, and on or before the same date every subsequent year for which AEP requires surveys pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants*.

The following are conditions of Decision 26677-D01-2022 that do not require subsequent filings with the Commission:

- c. Enel shall implement a turbine shut-off protocol to be followed when it receives a request at least 24 hours in advance of impacted aerial spraying operations. The protocol will include the direct phone number for the site supervisor and the remote-operations control centre, a step-by-step process to identify which turbines should be curtailed, halted and/or yawed, a confirmation of dates and times for planned aerial spraying activities, a process to ensure the site is safe and secure for spraying to occur, and a process to ensure that Enel is notified when spraying is completed.