AUC
Alberta Utilities Commission

ENGIE Development Canada GP Inc.

Buffalo Trail Wind Power Project

February 8, 2023

Alberta Utilities Commission
Decision 27240-D01-2023
ENGIE Development Canada GP Inc.
Buffalo Trail Wind Power Project
Proceeding 27240
Applications 27240-A001 to 27240-A003

February 8, 2023

Published by the:
Alberta Utilities Commission
Eau Claire Tower
1400, 600 Third Avenue S.W.
Calgary, Alberta T2P 0G5

Telephone: 310-4AUC (310-4282) in Alberta
1-833-511-4AUC (1-833-511-4282) outside Alberta
Email: info@auc.ab.ca
Website: www.auc.ab.ca

Contents

List of tables

List of figures

1 Decision summary

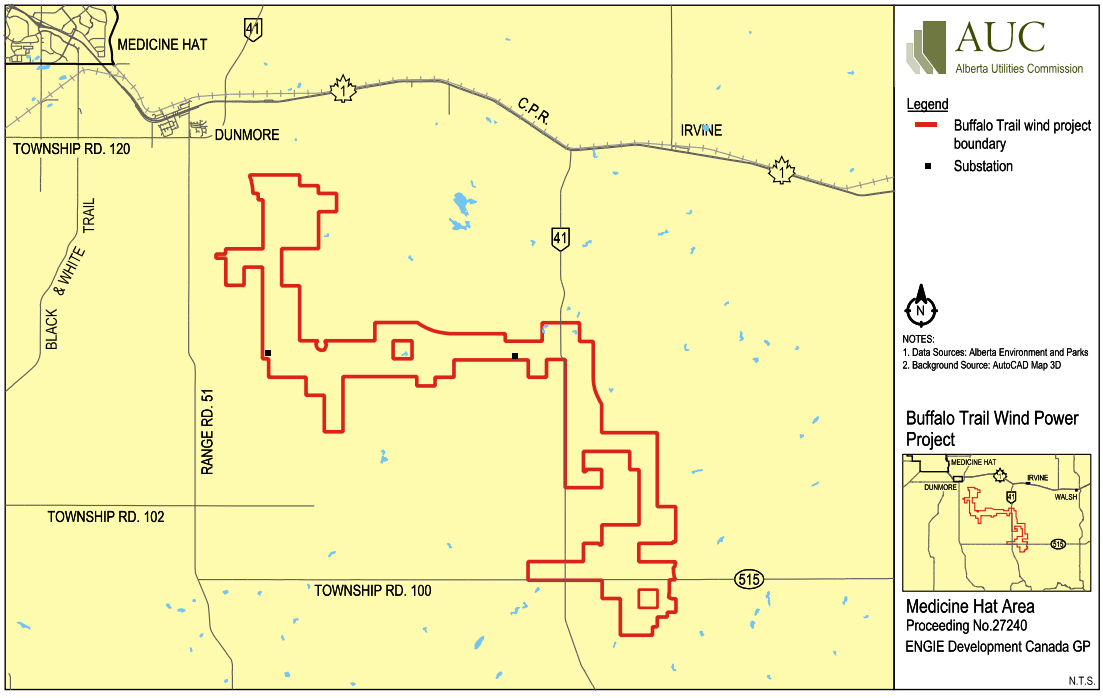
1. In this decision, the Alberta Utilities Commission approves applications from ENGIE Development Canada GP Inc. to construct and operate a 400-megawatt wind power plant designated as the Buffalo Trail Wind Power Project, the Buffalo Trail North 453S Substation and the Buffalo Trail South Substation.[1]

2 Introduction

2.1 Application details

2. ENGIE Development Canada GP Inc. (ENGIE) applied to construct and operate an up to 400-megawatt (MW) power plant designated as the Buffalo Trail Wind Power Project, the Buffalo Trail North 453S Substation and the Buffalo Trail South Substation (the project). The project is located on privately owned land in Cypress County, southeast of Dunmore. The operation footprint of the project is 59.02 hectares, as shown in the following figure:

Figure 1. Proposed Buffalo Trail Wind Power Project



[1] A substation number has not yet been assigned for the Buffalo Trail South Substation.

3. The Buffalo Trail Wind Power Project will consist of up to 65 Siemens Gamesa 4.0/5.2-MW wind turbines, with a hub height of 79.5 metres and a rotor diameter of 170 metres. The project would also include access roads and an underground collector system.

4. ENGIE stated that the vendors and equipment for the project have not yet been selected. ENGIE based its applications and associated reports off a worst-case (maximum impact) scenario turbine selection.

5. The project will consist of two phases – a north phase and south phase, each with its own substation. The Buffalo Trail North 453S Substation will be located in the southwest quarter of Section 5, Township 11, Range 4, west of the Fourth Meridian. It will include one 240/34.5-kilovolt (kV) step-up transformer rated at 138/184/230-megavolt ampere (MVA), twelve 34.5-kV indoor circuit breakers, a control building containing protection, control, and telecommunications equipment with indoor switchgear, and two 15-megavolt ampere reactive (MVAR) capacitor banks.

6. The Buffalo Trail South Substation will be located in the southeast quarter of Section 5, Township 11, Range 3, west of the Fourth Meridian. It will include one 240/34.5-kV step-up transformer rated at 138/184/230-MVA, ten 34.5-kV circuit breakers, a control building containing protection, control, and telecommunications equipment, and two 15-MVAR capacitor banks.

7. ENGIE's applications, reply evidence and undertaking responses included the following:

- A main applications document that contained ENGIE's responses to the AUC's application requirements.[2]
- A participant involvement program report prepared by Scott Land & Lease Ltd., which detailed consultation with stakeholders within 800 metres of the project and notification to stakeholders within 2,000 metres of the project.
- A noise impact assessment (NIA) for the project, prepared by RWDI AIR Inc.[3]
- A shadow flicker assessment for the project, prepared by WSP Canada Inc. (WSP).[4]
- An environmental evaluation prepared by AECOM Canada Ltd. (AECOM), 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.
- An environmental protection plan prepared by AECOM, which described the project-specific measures to be implemented during the construction, operation and reclamation of the project.
- A conservation and reclamation plan prepared by AECOM, and in accordance with the *Conservation and Reclamation Directive for Renewable Energy Operations*.[5]

[2] Exhibit 27240-X0001, AUC Application.
[3] Exhibit 27240-X0009, Attachment 8 - Noise Impact Assessment.
[4] Exhibit 27240-X0004, Attachment 3 Shadow Flicker Assessment.
[5] Alberta Environment and Parks, September 14, 2018.

- A renewable energy referral report for the project from Alberta Environment and Parks Fish and Wildlife Stewardship (AEP)[6] dated December 10, 2021, and correspondence with AEP.[7] The Commission requested that AEP complete an amendment review for the project due to the reduction of turbines, additional wildlife surveys and additional mitigation measures proposed by ENGIE after the issuance of the initial referral report by AEP. As a result, AEP provided a referral report amendment letter for the project on May 11, 2022.[8]

- A report prepared by Ollson Environmental Health Management regarding potential project impacts on human health.[9]

- Visual simulations of the project from multiple viewpoints, prepared by WSP.[10]

- A report by Telford Land & Valuations Inc. regarding potential property value impacts of the project.[11]

- A list of commitments that ENGIE made over the course of the proceeding.[12]

8. ENGIE stated that AltaLink Management Ltd. will submit a future transmission facility application to connect the north phase of the project to the Alberta Interconnected Electric System via the existing AltaLink Management Ltd. transmission system. The Commission understands that this application has been submitted, and is currently being held in abeyance pending the release of this decision.[13]

9. ENGIE planned to start construction of both phases in September 2023. ENGIE anticipated that the project's in-service date would be in August 2024 and the commercial operation would occur by December 31, 2024. ENGIE stated that if the schedule for the south phase differed, ENGIE would apply to the Commission to change the applicable dates.[14]

2.2 Interveners

10. The Commission issued a notice of applications, in accordance with Rule 001: *Rules of Practice*. In response, the Commission received statements of intent to participate from numerous members of the Concerned Cypress County Owners group (CCCOG) who indicated they were opposed to the project, and from the Stoney Nakoda Nations.

---

6 On October 24, 2022, the Alberta Environment and Parks (AEP) was renamed the Ministry of Environment and Protected Areas. Any references to AEP in Rule 033: *Post-approval monitoring requirements for wind and solar power plants* and elsewhere that relate to forward-looking obligations or commitments between the applicant and AEP should be interpreted as meaning Alberta Environment and Protected Areas (AEPA).

7 Exhibit 27240-X0010, Attachment 9 - Renewable Energy Referral Report and Correspondence.

8 Exhibit 27240-X0049, AEP response to the AUC request for an amendment review - Referral Report Amendment Letter.

9 Exhibit 27240-X0163.01, Appendix D - Expert Report and CV of Dr. Christopher A. Ollson of Ollson Environmental Health Management.

10 Exhibit 27240-X0126 to Exhibit 27240-X0137.

11 Exhibit 27240-X0160, Appendix F - Expert Report and CV of Rob Telford of Telford Land & Valuation Inc.

12 Exhibit 27240-X0193, ENGIE Commitment List - November 9, 2022.

13 Exhibit 27290-X0033, AUC letter – Proceeding placed in abeyance.

14 Transcript, Volume 1, pages 163-164, lines 20-7.

11. The Commission granted standing to members of the CCCOG, which consisted of individuals and families who own and occupy lands within 1,500 metres of the project. The group requested that the Commission deny the applications. In the alternative, if the Commission decided to approve the project, the CCCOG recommended several conditions of approval to the project. The CCCOG 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 project area, environmental and wildlife impacts, property value impacts, and construction and reclamation.

12. The Commission denied standing to the Stoney Nakoda Nations. The Stoney Nakoda Nations are Treaty 7 First Nations, comprised of the Bearspaw First Nation, Chiniki First Nation, and Wesley/Goodstoney First Nation. Upon review of the Stoney Nakoda Nations' statement of intent to participate, the Commission notified them that further information was required before the Commission could determine the degree of location or connection between the proposed project and the rights asserted. Because the Stoney Nakoda Nations did not provide additional information as requested, the Commission made a decision on their standing based on the information on the proceeding record. The Commission found that the information did not demonstrate that the rights the Stoney Nakoda Nations have or claim may be directly and adversely affected by the Commission's decision in this proceeding.[15]

13. The Commission also received statements of intent to participate from persons who stated that they supported the project, including from the Gill Group (consisting of 14 landowners) and Wade Watson, who own land within the project area. The Gill Group and W. Watson provided statements at the hearing that explained why they were in favour of the project, and they requested that the project be approved.

14. As a result of these statements of intent to participate, the Commission held a virtual hearing to consider the applications and the public and private concerns with the project.

3 Legislative and evidentiary framework

15. 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

16. 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 as well as providing argument; 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

[15] Exhibit 27240-X0090, AUC Ruling on standing, paragraphs 19 to 26.

with specialized subject matters requiring it to assess and balance a variety of public interest considerations.

17. 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 or a version of it as a condition of approval. However, the Commission considers commitments to be binding on an applicant regardless of whether or not the commitment is made a condition of approval.

18. 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.[16] 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, Hydro Developments and Gas Utility Pipelines*[17] and Rule 012: *Noise Control*.[18]

19. Once the Commission receives an application and determines that it meets the 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 for the project to impact their rights, so they can make an informed decision whether to participate in the proceeding.

20. The Commission recognizes that responding to an application requires a person's 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.

21. 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 attempt to 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 and the concerns raised about the project to determine whether approval is in the public interest.

---

[16] Alberta Energy and Utilities Board 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.

[17] 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.

[18] Rule 012: *Noise Control*, effective March 5, 2021.

3.2 Public interest assessment

22. 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 provision states that, in addition to any other matters 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.

23. 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 the proponent 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.

24. 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 the applicant has addressed these impacts. Balanced against this is an assessment of the project's potential public benefits. The assessment includes the positive and adverse impacts of the project on those nearby, such as landowners. The Commission assesses impacts such as shadow flicker, noise and property values on landowners as it balances the public interest considerations.

25. For example, a 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 is relevant to the public interest assessment, as it represents a public benefit in the form of reduced emissions from electricity generation and provides an economic benefit. However, there are negative environmental impacts associated with wind power plants. 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 assess factors such as the number and size of proposed turbines, the layout and location. These factors, among others, inform the determination of the likelihood and magnitude of impacts on bird and bat populations, which must be assessed as part of the project's public interest assessment, and weighed against the public benefits.

26. In the Commission's view, the consideration of the renewable nature of a power plant, as part of the public interest assessment, is consistent with the purposes of the *Hydro and Electric*

Energy Act, including Section 2(c) which provides one of the purpose of that act is "to assist the Government in controlling pollution and ensuring environment conservation in the development of hydro energy and in the generation, transmission and distribution of electric energy in Alberta."[19] This is also consistent with the broader legislative scheme in Alberta that promotes the development of renewable electricity generation.[20] Finally, it is consistent with Section 3(1)(c) of the *Hydro and Electric Energy Act* and does not conflict with the goals of competition or deregulation. The proponent remains 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 does not consider the economics of the project or if there is a need by consumers for the electricity it will provide. However, the Commission must still have regard for the effects of the project on the environment, and social and economic effects on nearby landowners. The development of a renewable energy power plant can result in other impacts, such as disturbing native grassland and wetlands, both of which provide habitat for wildlife. Nearby landowners often have concerns about a project's impacts on them. Examples include noise and shadow flicker generated by a project, the potential for a project to decrease the market value of a nearby property, their health and well being and that of their livestock during construction and operation of the project, and a project's ability to alter the rural character of an area. The Commission discusses these effects in Section 4 of the decision.

3.3 Expert evidence before the Commission

27. The Commission is not bound by the rules of evidence in its proceedings.[21] This provides the Commission with flexibility to determine admissibility and weight, but the Commission cannot ignore the principles that underlie the formal rules of evidence.[22] In judicial proceedings, witness may generally only speak to personally observed facts, and not inferences or opinions derived from those facts. However, this general exclusionary rule is a presumption, and there are many exceptions.[23] A common exception is for expert evidence. If a matter requires special knowledge or skill to form opinions based on the facts, a witness with sufficient expertise may be allowed to provide that opinion based on their level of expertise, if certain criteria are satisfied.[24]

28. With respect to the level of expertise required, the decision-maker must be satisfied the person has a sufficient degree of expertise to provide the opinion, but there is no minimum degree of formal training required. Any deficiencies in expertise beyond that, go to the weight to be afforded to the evidence, not its admissibility.[25] For example, an expert in cattle nutrition may have sufficient expertise to provide opinion evidence on the effects of contaminants in cattle feed, although the nutritionist is not toxicologist or a pathologist. However, the nutritionist's opinion evidence on such contaminants may be afforded less weight than conflicting evidence given by a toxicologist or pathologist.[26]

---

19 *Hydro and Electric Energy Act*, Section 2(c).
20 See i.e., the *Renewable Electricity Act*, Section 2.
21 *Alberta Utilities Commission Act*, Section 20.
22 Decision 2011-436: AltaLink Management Ltd. and EPCOR Distribution & Transmission Inc. - Heartland Transmission Project, Application 1606609, Proceeding 457, November 1, 2011, paragraph 92.
23 *White Burgess Langille Inman v Abbott and Haliburton Co*, 2015 SCC 23 at paragraphs 14-15.
24 *White Burgess* at paragraphs 15, 22-25.
25 *R v Marquard*, [1993] 4 SCR 223 at 243.
26 *Crooked Post Shorthorn v Masterfeeds Inc*, 2010 ABCA 106, paragraphs 16-22.

29. The Commission too, has recognized that certain forms of evidence constitute opinion evidence, and that this evidence should not be relied on by the Commission unless the witness has a sufficient degree of expertise in the relevant subject matter. Accordingly, the Commission has refrained from accepting inferential evidence in respect of certain subject matters unless it is provided evidence by a person with specialized expertise in that subject matter, gained through specialized education, training, experience, or a combination thereof. The Commission has previously found such subject matters include aerial spraying, human health, and property valuation.[27]

30. Relatedly, in the hearing for this proceeding, many landowners demonstrated intimate knowledge of their lands, and the wildlife that inhabits it. People that have lived in an area for many years, and may have been generationally present on that land, are likely to be extremely familiar with that area. This local knowledge is an invaluable asset. The Commission encourages landowners and proponents alike, to direct their environmental experts to co-ordinate with persons with local knowledge when conducting wildlife surveys, and otherwise preparing their evidence, to ensure the Commission has the best possible evidence before it when considering whether projects are in the public interest.

4 Discussion and findings

31. In this section of the decision, the Commission first addresses the impacts of the project on landowners by discussing issues related to noise, property value impacts, shadow flicker, health, consultation, and other relevant topics. The Commission then addresses the impacts of the project on the environment.

4.1 Noise

32. ENGIE retained RWDI AIR Inc. to complete a noise impact assessment (NIA) for the project.[28] CCCOG retained James Farquharson of FDI Acoustics Inc. to provide evidence and testify about the NIA and potential noise impacts from the project. ENGIE retained Daniel Kremer of RWDI to review J. Farquharson's evidence, provide reply evidence on noise issues and testify during the hearing.

33. CCCOG and J. Farquharson raised the following noise concerns:

- Applicable permissible sound levels (PSLs) at receptors close to Highway 41.
- Appropriate value for ground attenuation factor in the noise model.
- Project compliance with Rule 012, including operation noise, low frequency noise and construction noise.
- Post-construction noise monitoring.

[27] Decision 26214-D01-2022: Buffalo Plains Wind Farm Inc. – Buffalo Plains Wind Farm, Proceeding 26214, Applications 26214-A001 and 26214-A002, February 10, 2022, paragraphs 38 and 43.

[28] Exhibit 27240-X0009, Attachment 8 - Noise Impact Assessment.

34. The Commission will address these issues in detail and determine whether the project will comply with Rule 012 and whether post-construction noise monitoring is required for the project. CCCOG also raised health concerns with respect to noise, which the Commission addresses in Section 4.4 of this decision.

4.1.1 Highway 41

35. During the proceeding, the CCCOG and ENGIE were divided on whether Highway 41 qualifies as a heavily travelled road as defined in Rule 012. The NIA considered Highway 41 to be a heavily travelled road, and identified seven receptors (R53, R55, R89, R90, R106, R216 and R515) as being located between 30 metres and 500 metres of Highway 41. In accordance with Table 1 of Rule 012, the NIA determined PSLs at these receptors to be 45 A-weighted decibels (dBA) nighttime and 55 dBA daytime, because of their proximity to Highway 41. However, J. Farquharson submitted that Highway 41 does not qualify as a heavily travelled road and that the receptors close to Highway 41 should have PSLs of 40 dBA nighttime and 50 dBA daytime.

4.1.1.1 Definition of heavily travelled road in Rule 012

36. Rule 012 includes a glossary that defines certain terms used throughout the rule. The glossary states that "these definitions are not necessarily the same as the generally accepted broader definitions of these terms."[29] The glossary states that the term heavily travelled road:[30]

> Includes highways and any other road where 90 or more vehicles travel during the nine-hour nighttime period consistently for any one-month period in a year. The following methods to validate the travel volume are acceptable:
>
> - traffic count by attended technician for the entire nighttime period with the dates documented
> - traffic count by audio recording during the sound monitoring period with the dates documented
> - hourly traffic volume data from Alberta Transportation or other municipalities
> - Alberta Transportation Average Annual Summer Daily Traffic (ASDT) value
> - if the ASDT is not available, the Alberta Transportation Average Annual Daily Traffic (AADT) value can be used
>
> In the case of using the ASDT or AADT, 10% of the daily traffic volume can be assumed to be the nighttime period traffic.

[29] Rule 012: *Noise Control*, PDF page 38.
[30] Rule 012: *Noise Control*, PDF page 44.

37. The Commission notes that in Rule 012, nighttime traffic volume is the critical factor for determining if a road is heavily travelled, in accordance with the following:[31]

- If the road has traffic volumes less than 90 vehicles per night consistently for one month in a year, then it is not a heavily travelled road.

- If the road has traffic volumes greater than or equal to 90 vehicles per night consistently for one month in a year, then it is a heavily travelled road.

4.1.1.2 Typical traffic volumes on Highway 41

38. In this subsection of the decision, the Commission must determine typical traffic volumes on Highway 41 based on data collected during the proceeding, decide on whether Highway 41 qualifies as a heavily travelled road as defined in Rule 012 based on the typical traffic volumes, and subsequently decide on applicable PSLs at receptors close to Highway 41.

39. D. Kremer and J. Farquharson stated that they reviewed the following publicly available data from Alberta Transportation's website to determine traffic volumes on Highway 41.[32]

Table 1. Alberta Transportation data reviewed by D. Kremer and J. Farquharson

Noise practitioner	Alberta Transportation data	Years
D. Kremer	Hourly Automated Traffic Recorder (ATR) data	2019 to 2022
	Average Summer Daily Traffic (ASDT) data	2019 to 2021
J. Farquharson	Hourly ATR data	2020

40. J. Farquharson explained that Alberta Transportation collects hourly automated traffic recorder (ATR) data using an electronic device with a magnetic detector that is stretched across the road to count the passing of a vehicle.[33] J. Farquharson described an ATR report from Alberta Transportation's website,[34] which he stated presents monthly average daily traffic volumes, daily total traffic volumes, and hourly volumes for each day of a year.[35]

41. The Commission understands that ATR data presents hourly traffic volumes for every hour of every day in a year. Based on the hourly ATR data, users can sum the numbers of vehicles from 10 p.m. to 7 a.m. to calculate traffic volumes for every nine-hour nighttime period.

42. In response to a Commission undertaking request during the hearing, D. Kremer used the hourly ATR data collected for Highway 41 from January 2019 to August 2022 to calculate traffic volume for every nighttime period, count the number of days with 90 or more vehicles per night

---

31 Rule 012 defines nighttime as the hours from 10 p.m. to 7 a.m., and defines daytime as the hours from 7 a.m. to 10 p.m.

32 Traffic data and statistics for Alberta highways can be found on Alberta Transportation's website at http://www.transportation.alberta.ca/mapping/.

33 Transcript, Volume 2, page 320, lines 21-25; page 321, lines 1-10.

34 A typical ATR report from Alberta Transportation's website is here https://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.transportation.alberta.ca%2Fmapping%2F2021%2FATR%2FMay2021%2F60410410.xlsx&wdOrigin=BROWSELINK.

35 Exhibit 27240-X0114, Appendix D - Evidence of FDI Acoustics, PDF page 3.

for each month, identify the maximum and minimum nighttime traffic volumes for each month, and calculate the mean and median nighttime traffic volumes for each month.[36]

43. Based on the results from D. Kremer, the Commission notes the monthly mean and median nighttime traffic volumes on Highway 41 were less than 90 vehicles per night from January 2019 to April 2022, but were higher than 90 vehicles per night from May to August 2022.[37]

44. J. Farquharson explained that elevated traffic volumes on Highway 41 from May to August 2022 resulted from construction traffic for the neighbouring Cypress Wind Power Project. J. Farquharson stated that during his visit to the project area in September 2022, he observed that the Cypress Wind Power Project was under development.[38] In addition, Carol Hollstein, a CCCOG member and regular user of Highway 41, stated that "traffic is increased substantially"[39] since construction of the Cypress Wind Power Project commenced. D. Kremer also provided the opinion that increased traffic could be attributed to construction of the Cypress Wind Power Project.[40]

45. Decision 26489-D01-2021 for the Cypress Wind Power Project stated that "Cypress planned for construction to begin in July 2021 and estimated that the project in-service date would be December 2022."[41] The Commission notes that the period from May to August 2022, when Highway 41 had elevated traffic volumes according to the ATR data, falls within the construction schedule for the Cypress Wind Power Project that is described in Decision 26489-D01-2021.

46. The Commission accepts that measured traffic volumes on Highway 41 were influenced by construction of the Cypress Wind Power Project during the period from May to August 2022. Therefore, the Commission finds that the ATR data collected during this period is not representative of typical traffic volumes on Highway 41.

47. In addition to the ATR data, D. Kremer reviewed ASDT data for Highway 41 from Alberta Transportation's website and concluded that Highway 41 is a heavily travelled road based on the ASDT data. ENGIE argued that use of ASDT data is an acceptable method in Rule 012.[42]

48. The Commission understands that the ASDT data does not provide hourly traffic volumes; instead, it provides the average daily traffic volume during the summertime of a given year. Specifically, according to Alberta Transportation's document *Highway geometric design*

---

36 Exhibit 27240-X0186, Appendix U8 - ATR 60410410 Monthly Nighttime Data (2019-2022).

37 Mean is the arithmetic average of a set of numbers or distribution. It is calculated through dividing the sum of a collection of numbers by the number of numbers in the collection.
Median is the value that divides a collection of numbers in half, such that 50% of the numbers are greater than the value and 50% of the numbers are less than the value. It is the numeric value separating the higher half of a sample or distribution from the lower half.

38 Exhibit 27240-X0114, Appendix D - Evidence of FDI Acoustics, PDF page 2.

39 Transcript, Volume 3, page 473, lines 21-25; page 474, lines 1-16.

40 Transcript, Volume 3, page 504, lines 11-14.

41 Decision 26489-D01-2021: Cypress Renewable Energy Centre GP Inc. and Cypress 2 Renewable Energy Centre GP Inc., Cypress Wind Power Project Amendments, Proceeding 26489, Application 26489-A001, July 27, 2021.

42 Transcript, Volume 4, page 540, lines 10-19.

guide, an ASDT value is determined by counting the total number of vehicles on a road from May 1 to September 30 and dividing the total number of vehicles by the number of days from May 1 to September 30.[43] As such, ASDT data represents the mean daily traffic volume for the summertime of a given year, and it does not distinguish daytime from nighttime.

49. Rule 012 specifies that nighttime traffic volume is what determines whether a roadway is a heavily travelled road. Rule 012 provides a method to *estimate* nighttime traffic volumes based on daily or whole day traffic volume, and it states that "In the case of using the ASDT or AADT, 10 per cent of the daily traffic volume can be assumed to be the nighttime period traffic."[44] The Commission clarifies that this is a method for *estimating* nighttime traffic volumes from 24 hour data (e.g., ASDT or AADT), when there are no data for actual nighttime traffic counts. Although D. Kremer's review indicated that 10 per cent of the ASDT value for Highway 41 for the years 2019 to 2021 is greater than 90 vehicles, the hourly ATR data (described in Section 4.1.1.1 of this decision) shows that actual traffic volumes are consistently less than 90 vehicles per night. In this case, the Commission finds that using 10 per cent of ASDT data overestimates nighttime traffic volumes on Highway 41.

50. Based on the foregoing, the Commission finds that the ATR data collected from January 2019 to April 2022 are more representative of typical traffic volumes on Highway 41, while the ATR data collected from May to August 2022 are not representative of typical traffic volumes on Highway 41, because those data were influenced by construction of the Cypress Wind Power Project. The Commission also finds that using 10 per cent of the ASDT data overestimates nighttime traffic volumes on Highway 41.

51. The Commission has determined that Highway 41 does not qualify as a heavily travelled road as defined in Rule 012, because monthly mean and median nighttime traffic volumes on Highway 41 from January 2019 to April 2022 are consistently below the threshold value of 90 vehicles per night. Therefore, in accordance with Table 1 of Rule 012, applicable PSLs for receptors close to Highway 41 are 40 dBA nighttime and 50 dBA daytime.

4.1.1.3 Clarification on the definition of heavily travelled road in Rule 012

52. In this decision, the Commission provides clarification on the definition of heavily travelled road in Rule 012. According to Rule 012, traffic counts by technician, traffic counts by audio, hourly ATR data from Alberta Transportation or municipalities, ASDT data from Alberta Transportation, and AADT data from Alberta Transportation are all acceptable methods to establish nighttime traffic volumes on a transportation route for the purposes of determining if the route is a heavily travelled road.

53. The Commission clarifies that the definition of heavily travelled road provided in Rule 012 places the traffic count methods in descending order of accuracy. When determining traffic volumes on a transportation route at the application or prediction stage, the Commission encourages noise practitioners to use publicly available traffic data (e.g., traffic data from

[43] Alberta Transportation, Highway geometric design guide, Chapter A basic design principles, April 2018, PDF pages 19-20. Website: http://www.transportation.alberta.ca/Content/docType233/Production/HGDG_chap-a.pdf.

[44] Rule 012: *Noise Control*, PDF page 44.

Alberta Transportation or other municipalities), and the Commission will give priority to the most accurate traffic data that is available. Specifically:

- When hourly ATR data is available for a road, applicants should use ATR data to calculate nighttime traffic volumes (rather than 10 per cent of ASDT or AADT).

- When hourly ATR data is not available but ASDT is available, applicants should use the 10 per cent assumption to *estimate* nighttime traffic volumes based on ASDT (rather than AADT). The Commission gives priority to summer traffic data over annual data, because according to Rule 012, "[t]he permissible sound level is based on summertime conditions."[45]

- When neither hourly ATR data nor ASDT are available, applicants should use the 10 per cent assumption to *estimate* nighttime traffic volumes based on AADT.

4.1.2 Ground attenuation factor

54. Ground attenuation is reduction in sound level as a result of interaction with the ground during propagation from source to receptor. Ground attenuation is mainly the result of sound reflected by the ground surface interfering destructively with the sound propagating directly from source to receptor. When sound is propagating over ground, attenuation will occur due to acoustic energy losses on absorption and reflection. These losses will depend on the surface. Both D. Kremer and J. Farquharson used international standard ISO 9613-2 in their noise models. ISO 9613-2 accounts for ground attenuation using a ground factor ranging from 0 to 1. The ISO 9613-2 defines three types of ground surface:[46]

- Hard ground, which includes paving, water, ice, concrete and all other ground surfaces having a low porosity. For hard ground, the ground factor is defined to be 0 in ISO 9613-2.

- Porous ground, which includes ground covered by grass, trees or other vegetation, and all other ground surfaces suitable for the growth of vegetation, such as farming land. For porous ground, the ground factor is defined to be 1 in ISO 9613-2.

- Mixed ground. If a surface consists of both hard and porous ground, the ground factor takes on values ranging from 0 to 1, based on the fraction of the region that is porous.

55. ENGIE's NIA used a ground attenuation factor of 0.0 for water bodies and 0.7 for the remainder of the study area. However, J. Farquharson indicated that a ground factor of 0.5 is more appropriate and conservative for wind turbine modelling. In particular, J. Farquharson submitted that the Institute of Acoustics' publication *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* recommends use of a 0.5 ground factor for the overall study area and use of a 0.0 ground factor for large water bodies.[47]

[45] Rule 012: *Noise Control*, PDF page 6.
[46] International Standards Organization (ISO), ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors - Part 2: General method of calculation, Geneva, 1996, Section 7.3, Ground effect (Agr).
[47] Exhibit 27240-X0114, Appendix D - Evidence of FDI Acoustics, PDF page 4.

56. In response, D. Kremer stated that the ground attenuation recommendations in ETSU-R-97[48] are aimed at specific regulatory frameworks, which define sliding scale noise limits as a function of wind speed and turbine output to allow for greater noise limits as wind speeds increase. He explained that a sliding scale framework increases the likelihood of non-compliance for periods where hub height wind speeds are high (maximum sound output from turbines), and ground level wind speeds are low (little to no wind masking). D. Kremer further explained that the noise framework for Rule 012 eliminates much of the uncertainty that ETSU-R-97 potentially introduces by increasing the inherent conservatism, requiring the modelling of maximum sound emissions for project turbines during low wind speed nighttime conditions.[49]

57. For the following reasons, the Commission finds that use of a 0.7 ground attenuation factor in the noise model for this specific project area is acceptable and appropriate:

- A ground attenuation factor of 0.7 considers 30 per cent of land to be reflective according to the ISO 9613-2 standard. D. Kremer reviewed data from the AltaLIS website[50] and determined that wetlands and roads comprise less than 1.5 per cent of the land surface within the study area. The Commission emphasizes that the ground attenuation factor in noise modelling is intended to represent ground reflectiveness or attenuation. The Commission accepts D. Kremer's explanation that using a ground factor of 0.7 for most of the study area (i.e., 30 per cent reflective) and 0.0 for open water bodies (i.e., fully reflective) conservatively accounts for ground attenuation in the noise model.[51]

- A ground factor of 0.7 was used in the NIAs for the neighbouring Wild Rose 2 Wind Power Project,[52] Cypress Wind Power Project[53] and Bull Trail Wind Power Project.[54] Use of the 0.7 ground factor was accepted by the Commission in the decisions for each of these projects. The Commission notes that these approved projects are adjacent to or partially overlapping the proposed Buffalo Trail Wind Power Project and use of a 0.7 ground factor to maintain consistency with these nearby projects is reasonable.

- The Commission notes that the noise model for the project NIA incorporated several conservative assumptions. In particular, the NIA modelled maximum sound emissions for the project turbines, and all receptors were assumed to be downwind from all sound sources at all times. D. Kremer submitted that noise models with these assumptions produce conservative prediction results when compared to noise levels measured during post-construction surveys.[55]

---

48 ETSU-R-97, *The assessment and rating of noise from wind farms*, published by the Energy Technology Support Unit for the Department of Trade and Industry, United Kingdom, 1997.

49 Exhibit 27240-X0162, Appendix C - Expert Report and CV of Daniel Kremer of RWDI Air Inc., PDF pages 8 and 9.

50 AltaLIS is a progressive partner in Alberta's spatial data and imagery infrastructure and is recognized to be the authoritative source of spatial data and imagery in Alberta (https://www.altalis.com/).

51 Exhibit 27240-X0162, Appendix C - Expert Report and CV of Daniel Kremer of RWDI Air Inc., PDF pages 6 and 7.

52 Exhibit 21968-X0055, Attachment_A_WR2_NIA-Issue-D, PDF page 17.

53 Exhibit 26489-X0010, Attachment PP-K - Noise Impact Assessment, PDF page 8.

54 Exhibit 26981-X0004, Attachment WP20 - Noise Impact Assessment 12NOV2021, PDF page 8.

55 Exhibit 27240-X0162, Appendix C - Expert Report and CV of Daniel Kremer of RWDI Air Inc., PDF page 7.

58. The Commission acknowledges that ETSU-R-97 recommends computer noise models use a ground factor of 0.5, but also notes that this document is intended for use within regulatory regimes that provide a sliding scale noise limit for wind turbines (i.e., noise limits that increase with wind speed and turbine output). Since Rule 012 does not allow a sliding scale noise limit for wind turbines, the Commission finds it would be unreasonable to require all applicants to model with a ground factor of 0.5 based solely on recommendations from ETSU-R-97. The Commission finds that it is important to maintain the integrity of modelling parameters (e.g., the ground factor is intended to represent ground reflectiveness of the study area), and it is unnecessary to tweak parameters to account for matters that they are not intended to convey.

59. In conclusion, the Commission finds that use of a ground factor of 0.7 is acceptable and appropriately representative of the study area for the project. Accordingly, the Commission accepts model predictions based on the 0.7 ground factor.

4.1.3 Compliance with Rule 012

60. In the above subsections, the Commission finds that Highway 41 does not qualify as a heavily travelled road and that the applicable PSLs at dwellings close to Highway 41 are 40 dBA nighttime and 50 dBA daytime. The Commission also finds that use of a 0.7 ground factor in the noise model for the project study area is acceptable and appropriate. Next, the Commission will make findings on whether the project will be compliant with Rule 012.

61. D. Kremer predicted the noise contribution from the project, the noise contribution from baseline case facilities, and cumulative sound levels using a noise model with a ground factor of 0.7.[56, 57, 58] The Commission notes that predicted cumulative sound levels at some receptors are close to or slightly above the nighttime PSL of 40 dBA. Predicted sound levels at these receptors are presented in the table below. Because the nighttime PSL is a more stringent limit for noise compliance than the daytime PSL, this decision is focused on noise compliance during the nighttime period.

[56] Exhibit 27240-X0009, Attachment 8 - Noise Impact Assessment, PDF page 22 and 23.
[57] Exhibit 27240-X0187, Appendix U9 - NIA Results with PSL = 40 dBA for receptors within 500 metres of Highway 41.
[58] Exhibit 27240-X0188, Appendix U10 - NIA Results with GA = 0.5.

Table 2. Predicted nighttime sound levels at the most affected receptors (dBA)

Receptor	ASL	Predicted sound level			PSL	Compliance margin[1]
		Baseline case facilities	Project	Cumulative sound level		
515	35	35.1	36.7	40.4	40	-0.4
53	35	31.4	38.1	40.4	40	-0.4
122	35	31.4	37.8	40.2	40	-0.2
55	35	34.9	36.3	40.2	40	-0.2
514	35	31.5	37.3	40.0	40	0.0
513	35	8.7	38.2	39.9	40	0.1
91	35	26.8	37.7	39.8	40	0.2
129	35	23.6	37.7	39.7	40	0.3
50	35	27.3	37.4	39.6	40	0.4
216	35	34.6	34.9	39.6	40	0.4
90	35	35.5	33.6	39.5	40	0.5
506	35	30.0	36.8	39.5	40	0.5
67	35	27.0	37.2	39.5	40	0.5
51	35	31.5	36.3	39.5	40	0.5
46	35	22.3	37.4	39.5	40	0.5
89	35	34.5	34.5	39.4	40	0.6
45	35	9.9	37.5	39.4	40	0.6
92	35	31.8	36.1	39.4	40	0.6
222	35	35.2	32.9	39.3	40	0.7
44	35	0.0	37.2	39.2	40	0.8
48	35	31.0	36.0	39.2	40	0.8
213	35	17.5	37.1	39.2	40	0.8
32	35	0.0	37.1	39.2	40	0.8
65	35	24.4	36.8	39.2	40	0.8
52	35	30.1	36.0	39.1	40	0.9
68	35	24.2	36.7	39.1	40	0.9

Note:
1. Compliance margin is the difference between PSL and cumulative sound level (i.e., PSL minus cumulative sound level).

62. Section 2.7(6) of Rule 012 allows predicted cumulative sound levels to be rounded to the nearest whole number before comparing to the applicable PSL and assessing compliance.[59] The Commission finds that after rounding cumulative sound levels from the above table to the nearest whole number, the project is predicted to comply with Rule 012 PSLs. In addition, the NIA evaluated low frequency noise from the project and concluded that the potential for a project-related low frequency noise condition is low.[60]

63. The Commission accepts that noise from the project is expected to comply with PSLs set out in Rule 012 and the project will likely not create low frequency noise conditions at receptors.

64. In response to CCCOG's concerns about potential noise impacts from project construction activities, ENGIE stated that it would endeavour to follow the construction noise mitigation measures recommended in Rule 012.[61] In particular, ENGIE committed to construct the project during daytime hours, where feasible; to ensure all internal combustion engines are maintained with muffler systems and to limit driving speeds on access roads; and to investigate and promptly respond to any noise complaints it receives during project construction.[62] ENGIE

[59] Rule 012: *Noise Control*, PDF page 17.
[60] Exhibit 27240-X0009, Attachment 8 - Noise Impact Assessment, PDF page 28.
[61] Transcript, Volume 1, page 84, lines 11-25; page 85, lines 1-25; page 86, lines 1-11.
[62] Exhibit 27240-X0193, ENGIE Commitment List - November 9, 2022, PDF page 2.

explained that in certain circumstances where the construction schedule becomes constrained, it may need to construct during the nighttime.[63] The Commission accepts that ENGIE's commitments to reduce noise from construction are reasonable and are generally consistent with the mitigation measures recommended in Rule 012.[64]

4.1.4 Post-construction noise monitoring

65. Although the project is predicted to comply with Rule 012 PSLs at all receptors, given the concerns raised by the CCCOG and the fact that predicted sound levels are close to or slightly above the nighttime PSL at a number of receptors, the Commission requires ENGIE to complete a post-construction comprehensive sound level (CSL) survey to verify compliance with Rule 012 once the project commences operation.

66. ENGIE committed to conducting a post-construction CSL survey to verify compliance through appropriate noise monitoring in accordance with Rule 012.[65] D. Kremer recommended using receptors R50 and R122 as suitable noise monitoring locations, because cumulative sound levels there are predicted to equal the nighttime PSL, the project will be a dominant sound source, and these receptors have a high potential to be downwind from nearby turbines during summer nighttime hours.[66]

67. J. Farquharson agreed with D. Kremer's selection of R50 and R122 as monitoring locations and stated that R515 is also a reasonable candidate for noise monitoring, because R515 is surrounded by project turbines and turbines associated with the Cypress Wind Power Project and it may be downwind from nearby turbines.[67]

68. In selecting monitoring locations for the post-construction CSL survey, the Commission must consider a number of criteria, including the commitments made by the applicant, project layout, predicted project contribution to cumulative sound levels, predicted cumulative sound levels and compliance margin, degree of conservatism in the model, technical feasibility and concerns brought forward by local residents. For the purposes of testing project noise compliance, the Commission considers a receptor to be a suitable noise monitoring location when it is predicted to have a small compliance margin and the project is a dominant sound source.

69. In addition, the Commission gives priority to receptors that are potentially downwind from nearby wind turbines during summertime, because according to Rule 012, (i) representative conditions for CSL measurements include downwind conditions from the wind turbine(s) with dominant noise contribution at the measured receptor;[68] (ii) PSL is based on summertime conditions;[69] and (iii) summertime weather conditions are favourable to noise monitoring.[70]

---

63 Transcript, Volume 1, page 85, lines 1-7; page 165, lines 12-20.
64 Rule 012: *Noise Control*, Section 2.11, PDF page 18.
65 Exhibit 27240-X0193, ENGIE Commitment List - November 9, 2022, PDF page 5.
66 Exhibit 27240-X0162, Appendix C - Expert Report and CV of Daniel Kremer of RWDI Air Inc., PDF pages 12 and 13.
67 Transcript, Volume 2, page 337, lines 7-16.
68 Rule 012: *Noise Control*, PDF page 30.
69 Rule 012: *Noise Control*, PDF page 6.
70 Rule 012, *Noise Control*, PDF page 35.

70. The Commission observes that predicted cumulative sound levels are closest to or slightly above the nighttime PSL at receptors R50, R53, R55, R91, R122, R129, R216, R513, R514 and R515. Further, the predicted noise contribution from the project at these receptors is greater than the assumed ambient sound level (ASL) and greater than the predicted noise contribution from baseline case facilities, which indicates that the project is a dominant sound source.

71. The Commission notes that D. Kremer submitted a wind rose based on data from the Seven Persons meteorological station for 2022 summer months and nighttime hours.[71] According to the wind rose, the prevalent wind directions in the project area during summertime are between the west and the south, focusing on southwest. The Commission observes that receptors R50, R55, R122, R514 and R515 will likely be downwind from nearby wind turbines during summertime, while receptors R53, R91, R129, R216 and R513 appear not to be downwind. Therefore, the Commission considers receptors R50, R55, R122, R514 and R515 are more suitable monitoring locations than others.

72. The Commission notes that receptors R55 and R515 are close to each other (i.e., the distance between these two receptors is approximately 60 metres). Due to the short distance between R55 and R515, it is likely that surroundings and ground cover conditions at these two receptors are similar. As such, the Commission considers that there would be little value in collecting post-construction CSL data at both locations. Because the noise contribution from the project is predicted to be slightly higher at R515 than at R55, the Commission finds that R515 would be the better monitoring location for the purpose of testing project noise compliance.

73. Based on the foregoing, the Commission imposes the following condition of approval.

a. ENGIE shall conduct a post-construction comprehensive sound level (CSL) survey, including an evaluation of low frequency noise, at receptors R50, R122, R514 and R515. The post-construction CSL survey must be conducted under representative conditions and in accordance with Rule 012: *Noise Control*. Within one year after the project commences operations, ENGIE shall file a report with the Commission presenting measurements and summarizing results of the post-construction CSL survey.

74. In response to a Commission information request, ENGIE stated that in the event of non-compliance with the PSLs once the project commences operations, the project turbines would be programmed to operate in noise reduced operating modes to bring the project into compliance with Rule 012.[72] During the hearing, ENGIE confirmed that noise reduced operating modes are available for all turbine models being considered for the project.[73] The Commission expects ENGIE to implement noise reduced operating modes if project-related non-compliance is determined during the CSL survey.

75. The Commission notes that among the monitoring receptors for the CSL survey required in the above condition, receptors R53 and R515 are close to Highway 41. Predicted cumulative sound levels at these receptors are slightly above the nighttime PSL because of the Commission's decision that Highway 41 is not a heavily travelled road and the applicable

[71] Exhibit 27240-X0162, Appendix C - Expert Report and CV of Daniel Kremer of RWDI Air Inc., PDF page 13.
[72] Exhibit 27240-X0037, ENGIE Development Canada Inc - Response to AUC IR Round 1 - Proceeding 27240, PDF page 6.
[73] Transcript, Volume 4, PDF page 19.

nighttime PSL at these receptors is therefore 40 dBA (i.e., less than the nighttime PSL of 45 dBA that was used in the NIA). During the hearing, D. Kremer argued that although Highway 41 does not qualify as a heavily travelled road, traffic on this highway may influence the ambient sound level (ASL) at receptors close to the highway. D. Kremer suggested an ASL survey should be conducted if the Commission were to order post-construction monitoring at any of the receptors within 500 metres from Highway 41.

76. The Commission notes that Rule 012 does not require an applicant to conduct baseline sound measurements or utilize measured baseline sound levels in an NIA. Rather, Rule 012 recommends using a nighttime ASL of 35 dBA for rural Alberta. Rule 012 specifies that the ASL may be measured (as opposed to using the assumed value of 35 dBA) in areas considered to be pristine or areas that have non-energy industrial activity that would impact the ASLs.[74] From this perspective, ENGIE is free to collect any measurements it believes will be helpful to assess noise compliance during the post-construction CSL survey.

4.1.5 Summary

77. The Commission's findings with respect to major noise issues are summarized below:

- Highway 41 does not qualify as a heavily travelled road and therefore applicable PSLs at all receptors considered in the NIA, including receptors close to Highway 41, are 40 dBA nighttime and 50 dBA daytime.
- A ground attenuation factor of 0.7 is acceptable and appropriate for the project study area.
- Noise from the project is expected to comply with PSLs set out in Rule 012 and the project will likely not create low frequency noise conditions at receptors.
- ENGIE's commitments to reduce construction noise are reasonable and generally consistent with the mitigation measures recommended in Rule 012.
- The Commission requires ENGIE to complete a comprehensive sound level survey at receptors R50, R122, R514 and R515, and to submit a survey report to the Commission within one year after the project commences operations.
- In the event of non-compliance once the project commences operations, mitigation measures, including implementing noise reduced operating modes, are available and will be implemented to reduce noise from the project to comply with Rule 012.

4.2 Property value impacts

78. Another matter that the Commission considers in assessing whether a project is in the public interest, is the effect the project may have on the market value of adjacent properties. The Commission does not have the jurisdiction to order applicants to pay compensation to local

[74] Rule 012: *Noise Control*, Section 2.1 (10), PDF page 8.

landowners for potential property value impacts.[75] However, the Commission may weigh adverse property value impacts when considering whether the project is in the public interest.

79. The CCCOG filed a report prepared by Brian Gettel of Gettel Appraisals, and B. Gettel gave oral evidence in the hearing. He concluded that the market value of adjacent residential properties could be negatively impacted by the project, and that the value of farmland in the area would not be impacted unless the land is to be used as a future building site. Based on local area research, and professional judgement, B. Gettel concluded that any market value losses that would arise as a result of the project would fall within a low impact scenario, i.e., 0 to 10 per cent value losses. Specifically in relation to the CCCOG's members' lands, B. Gettel concluded that for the existing and future residential building sites of 13 properties assessed, five properties could suffer value loss impacts in the range of 0 to 10 per cent, and that seven properties farther away from the project could suffer value loss impacts in the 0 to 5 per cent range.[76] He added that value loss impacts having similar ranges could be anticipated for other (non-CCCOG members') potential building sites in the area.

80. ENGIE filed a report from Telford Land & Valuation Inc. that responded to the property valuation evidence that was filed by the CCCOG, and the report's author Robert Telford gave oral evidence in the hearing. R. Telford concluded that there was insufficient empirical evidence to draw any conclusions about the potential for the project to impact property values. ENGIE stated that the conclusions offered by B. Gettel, to the extent that they indicated a negative impact on property values from the project, were not based on empirical evidence and should therefore be given reduced or no evidentiary weight.

81. The Commission notes that the two property value experts agreed on one point: that there was not enough empirical data to draw a conclusion, based on a statistical analysis, about the potential for property values to be affected by the project. ENGIE submitted that the Commission has consistently stated that property valuation is a highly complex and technical matter that is influenced by a wide variety of contextual and circumstantial factors, and therefore any findings about property value impacts had to be supported by project specific information provided by qualified experts. It stated that no such information was provided in this proceeding, and that B. Gettel's evidence should be discounted. The CCCOG stated that the Commission indicated in the Grizzly Bear Creek Wind Power Project (Decision 26677-D01-2022) that it was prepared to consider opinion evidence that was based on the research, expertise and observations that B. Gettel undertook and relied upon in coming to the conclusions he did about property value impacts from the project. ENGIE countered that the Grizzly Bear Creek Wind Power Project was inconsistent with previous Commission decisions on property valuation and should not be followed.

82. The Commission acknowledges that its comments on property valuation evidence in the Grizzly Bear Creek Wind Power Project may appear to represent a departure from prior Commission decisions on the matter. In Decision 2011-436 (Heartland Decision),[77] for example, the Commission stated in paragraph 87 that "[p]roperty valuation is a complex and technical issue that requires specialized knowledge and expertise, and several expert witnesses appeared at

[75] See Decision 26214-D01-2022: Buffalo Plains Wind Farm Inc. – Buffalo Plains Wind Farm, Proceeding 26214, February 10, 2022, paragraph 26.

[76] One property was expected to have no value loss impacts.

[77] Decision 2011-436: AltaLink Management Ltd. and EPCOR Distribution & Transmission Inc., Heartland Transmission Project, Application 1606609, Proceeding 457, November 1, 2011.

the hearing to address this issue." But that statement was made to identify property valuation as an example of one of a number of issues in that proceeding that were of "[a] scientific or technical nature" and for which lay witnesses' opinion evidence could not be accepted by the Commission. The Commission does not understand that statement to mean that *only* a statistical analysis based on empirical evidence of property transactions will suffice to establish the likelihood of property value impacts for any given project; however, the Commission acknowledges that over time that portion of the Heartland Decision has come to be identified by some as authority for that proposition.

83. In this decision, the Commission reaffirms the views it described in the Grizzly Bear Creek Wind Power Project decision regarding the types of evidence it considers when weighing property value impacts:[78]

> 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 [Buffalo Plains Wind Farm], 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 viewscapes."[96] In another proceeding [Decision 26435-D01-2022, Brooks Solar Farm], 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]

84. ENGIE stated in argument, in response to a question from the Commission, that broadly speaking, the applicant bears the onus to demonstrate that approval of its project is in the public interest. It added that when a party asserts that one aspect of the project has or may have an adverse impact, the onus effectively shifts to that party to demonstrate that there is a problem that needs to be addressed and the applicant does not bear the onus of demonstrating that the adverse impact will not arise. ENGIE added that if the evidence on the matter is inconclusive and the onus is not met—as in this proceeding, if B. Gettel's conclusions are rejected by the Commission—the logical result is that the Commission cannot find that such an impact is likely and it cannot consider such an impact when it makes its public interest decision. In the Commission's view when reliable evidence on a relevant issue is limited but not entirely absent in a proceeding, that sort of "logical result" is often unsatisfactory. The Commission believes that it should instead attempt to make use of all the credible evidence that is available to it.

85. ENGIE stated that R. Telford's evidence about property value impacts should be preferred over B. Gettel's evidence, or at least given equal weight, because B. Gettel's evidence was based on anecdotal evidence and his own professional opinion and it did not involve an assessment of market values. However, the Commission notes that R. Telford indicated that a lack of empirical data did not allow him to draw *any* conclusions about property value impacts, and so there is no substantive opinion from him on the question of quantitative property value

[78] Decision 26677-D01-2022, PDF page 27.

impacts to weigh against the opinions offered by B. Gettel. The Commission must therefore decide what weight, if any, to give the evidence provided by B. Gettel.

86. The Commission's reasons in Decision 26677-D01-2022 bear repeating, as the Commission intends to reiterate for certainty's sake what it stated in that decision about the reliability and usefulness of different kinds of property valuation evidence.

> 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. … 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 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 viewscapes is one factor that will influence an individual's perception of the area as a place to reside. Despite evidence from [the applicant] and R. Telford that potential property value impacts are inconclusive, the evidence from the [intervener group] 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.[79]

87. The Commission still believes that the most reliable, and therefore persuasive evidence of property value impacts is a statistical analysis by a qualified expert that is based on data from actual market activity in the project area. However, the Commission's experience in the time since the Heartland Decision was issued is that in rural areas a lack of market activity (i.e., purchase and sale transactions) often prevents property valuation experts from being able to conduct that type of analysis. Both R. Telford and B. Gettel indicated that was the case in this proceeding: the available market data was insufficient to conduct a sales-based assessment of property value impacts. The Commission does not consider it helpful to simply find that that there is insufficient evidence to come to a conclusion about property values, as it is clear that landowners are concerned about property values in relation to wind projects, and there is some evidence. In these circumstances the Commission is prepared to consider the opinion evidence of B. Gettel, which he stated was based on his research, observations of the area and professional judgment.

88. The Commission accepts B. Gettel's opinion that for the existing and future residential building sites of 13 properties assessed, five properties could suffer value loss impacts in the range of 0 to 10 per cent, and that seven properties farther away from the project could suffer value loss impacts in the 0 to 5 per cent range. The Commission notes that this opinion is the same or similar to the opinion that B. Gettel provided and the Commission accepted in Decision 26677-D01-2022. This opinion is also generally consistent with the concerns about

[79] 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, paragraphs 104 and 105.

property value losses that were expressed by the CCCOG members who gave evidence, although their anecdotal evidence is inherently less reliable and therefore must be given limited weight.

89. ENGIE submitted that the fact that 16 landowners filed statements of intent to participate that expressed support for the project, and that the Gill Group and Wade Watson also supported the project, should be taken into account by the Commission and weighed against the concerns about negative property value impacts that were expressed by the CCCOG members. The Commission considers that hosting and supporting landowners' information is also anecdotal and should be afforded the same limited weight given to the property value evidence provided by the CCCOG landowners. In addition, the Commission notes that W. Watson and other hosting landowners stand to be compensated financially if the project proceeds, in amounts that appear to the Commission to be greater than the compensation ENGIE offered to CCCOG members. As a result, the Commission is not satisfied that support for the project by hosting landowners is actually relevant to the question of property value impacts. It may in fact indicate that hosting landowners are willing to accept the risk of adverse property value impacts in exchange for the hosting compensation to be provided by ENGIE.

90. The Commission finds, based on the evidence of B. Gettel, that negative property value impacts in the range of 0 to 10 per cent for parcels with existing residences or future residential building sites can be anticipated to result if the project is approved. Within that range and for those land uses, the evidence indicated that actual negative property value impacts were as likely to be 0 per cent as they were to be 10 per cent or any other value in between. The property valuation evidence did not indicate that the value of other types of properties in the area would be affected.

91. The Commission considers that the likelihood of property valuation impacts actually occurring is therefore uncertain, and that a property's value at any given time that the parcel is on the market for sale or being assessed for financing may be influenced far more by prevailing supply and demand conditions than by the presence of the project or the prospect that it will go ahead.

92. The Commission will consider these conclusions about property value impacts when it makes its public interest assessment of the project.

4.3 Shadow flicker

93. Rotating wind turbine blades can periodically cast moving shadows over nearby buildings. When these shadows pass over an opening such as a window, the light levels within the room may increase and decrease as the blades rotate, resulting in a flickering effect. In the context of this decision, this flickering effect is referred to as shadow flicker. Shadow flicker may be a source of annoyance at residences near wind power developments.

94. CCCOG expressed concerns about potential shadow flicker from the project and potential shadow flicker mitigation. The Commission discusses these issues in this section of the decision. CCCOG also raised health concerns with respect to shadow flicker, which the Commission addresses in Section 4.4.

95. ENGIE retained WSP to conduct a shadow flicker assessment for the project. The shadow flicker assessment modelled shadow flicker for three scenarios:[80]

- Worst-case scenario assumed that the sky is clear during all daylight hours, the turbine rotors are always perpendicular to the sun, and the turbine blades are always rotating.

- Adjusted case scenario used data from a public weather station to account for times when the sun is not shining, the turbines are not operating, or the orientation of the turbines (due to the direction of the wind) is not perpendicular to the sun.

- Curtailed adjusted case scenario implemented curtailments to the adjusted case to reduce shadow flicker from the project to below eight hours per year at all receptors.

96. The shadow flicker assessment included the project and two neighbouring wind power projects (Cypress Wind Power Project and Bull Trail Wind Power Project) to predict cumulative shadow flicker levels.

97. The predicted shadow flicker for the three modelling scenarios are summarized below:[81]

- In the worst-case scenario, the maximum cumulative potential shadow flicker at any receptor is 134.5 hours per year and 61 minutes in any given day.

- In the adjusted case scenario, the maximum cumulative potential shadow flicker at any receptor is 42.2 hours per year. The shadow flicker assessment does not provide a daily value for the adjusted case scenario, because this scenario used monthly statistical weather data.

- In the curtailed adjusted case scenario, the maximum potential shadow flicker from the proposed project in isolation from the other two projects is reduced to no more than eight hours per year at all receptors; a number of receptors are predicted to have cumulative shadow flicker in excess of eight hours per year but turbines from neighbouring projects are the dominant source of shadow flicker at these receptors.

98. ENGIE has committed to implementing appropriate mitigation measures to reduce adjusted shadow flicker from the project to less than eight hours per year, if a resident reports concerns or complaints about shadow flicker from the project. ENGIE submitted that potential mitigation measures include the installation of blinds, curtains or other screening devices, or the implementation of an operational curtailment plan, if necessary.[82]

99. ENGIE detailed the steps that it would implement when responding to shadow flicker concerns or complaints from nearby residents. In particular, ENGIE would retain an expert to identify which turbines contribute to shadow flicker at the residence in question, estimate the dates and times when shadow flicker occurs, and design appropriate mitigation measures to reduce project shadow flicker to less than eight hours per year at the concerned residence.[83]

---

80 Exhibit 27240-X0004, Attachment 3 Shadow Flicker Assessment, PDF pages 9 and 15.
81 Exhibit 27240-X0004, Attachment 3 Shadow Flicker Assessment, PDF pages 16 and 17.
82 Exhibit 27240-X0193, ENGIE Commitment List - November 9, 2022, PDF page 1.
83 Exhibit 27240-X0193, ENGIE Commitment List - November 9, 2022, PDF page 1.

100. Christopher Ollson prepared a report regarding potential project impacts on human health that was submitted by ENGIE as part of its reply evidence. C. Ollson submitted that although ENGIE is willing to mitigate shadow flicker below eight hours per year in certain circumstances, this commitment goes beyond what is necessary to reduce shadow flicker annoyance and should not become a standard for past or future projects in Alberta.[84]

101. The Commission finds that ENGIE has assessed shadow flicker impacts in accordance with Rule 007. The Commission acknowledges that ENGIE made a commitment to reduce project shadow flicker below eight hours per year in the event of residents' concerns or complaints.

102. The Commission has not established limits as a benchmark against which shadow flicker impacts will be assessed as acceptable or unacceptable. Rather, at the application stage, the Commission requires proponents to prepare a shadow flicker assessment and to prepare a map that identifies all receptors and the expected duration of shadow flicker for each receptor. A copy of the map must be included as part of the applicant's participant involvement program materials. The applicant is required to consult nearby landowners that have the potential to experience shadow flicker and attempt to address any shadow flicker concerns they may have. A copy of the shadow flicker assessment report is to be made available to any stakeholder requesting a copy of the report. At the post-construction stage, the Commission requires proponents to address complaints or concerns from residents regarding shadow flicker from the project and to take prompt action, including implementing mitigation measures to address these complaints or concerns.

103. The Commission acknowledges ENGIE's efforts to address stakeholders' concerns about potential shadow flicker from the project. In particular, ENGIE made a firm commitment to reduce project shadow flicker at residences to below eight hours per year. Furthermore, ENGIE's has made a commitment to respond expeditiously and take prompt action to address concerns or complaints regarding shadow flicker from the project, and to implement appropriate mitigation when necessary. The Commission imposes the following condition of approval.

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

104. In summary, the Commission finds that potential shadow flicker impacts from the project have been properly assessed, and ENGIE has a reasonable management plan, including response procedure and potential mitigation measures, to address stakeholders' concerns and complaints about potential shadow flicker impacts from the project. The Commission has imposed a condition to ensure that any concerns or complaints are addressed by ENGIE and the Commission is made aware of what has occurred.

[84] Exhibit 27240-X0163.01, Appendix D - Expert Report and CV of Dr. Christopher A. Ollson of Ollson Environmental Health Management, PDF page 16.

4.4 Health

105. The CCCOG raised concerns regarding adverse health effects and impacts arising from the project. These concerns included impacts to pre-existing medical conditions and impacts to human health, due to noise, shadow flicker, light pollution, stress and anxiety.

106. The CCCOG also expressed concerns about the adverse health effects of the project on their livestock and provided a summary of articles found regarding the negative impact of noise and vibrations from wind turbines on animals.[85] In response to an information request, the CCCOG stated that the author of this summary did not have specialized knowledge, training, skills, experience or expertise in respect of the subject matter of the impact of noise and vibrations from windmills on animals, and that the author would not be presented as an independent expert witness.[86]

107. ENGIE submitted in argument, that animal health was a technical and scientific subject matter, and that the Commission should not afford opinion evidence in respect of animal health any weight unless the witness was an independent expert witness with sufficient technical and scientific expertise. Accordingly, ENGIE submitted that the summary of articles referred to in the preceding paragraph should be given no weight.[87] ENGIE also submitted, that unlike the evidence of its expert on the topic, C. Ollson, there was no explanation of the process followed to identify the articles referred to in the summary.[88]

108. ENGIE submitted expert evidence prepared by C. Ollson to assess noise and shadow flicker impacts on human health. Animal health was also dealt with. The evidence concluded that:[89]

- The 40 dBA nighttime PSL applicable at receptors is adequate to protect human health and residents should not experience an impact on their health as a result of the project. Rule 012 is one of the most restrictive and conservative guidelines for wind turbine siting and will ensure protection of the community's health.

- Shadow flicker from wind turbine projects does not impair self-reported measures of health. No scientific literature suggests that shadow flicker should be limited, in terms of hours per year or minutes per day, to protect health or avoid annoyance. Thirty hours of shadow flicker per year is a reasonable guideline, but this limit is not required to protect health or lower annoyance levels.

- Although ENGIE has committed to mitigate shadow flicker below eight hours per year for its project, this commitment goes beyond what is necessary to reduce shadow flicker at nearby buildings and should not become a standard for past or future projects in Alberta.

- There have been a limited number of research studies and peer-reviewed papers on the potential effect of wind turbines on the health of wildlife and livestock. There is nothing

[85] Exhibit 27240-X0113, Appendix C - Summary and Articles on WT impacts on animals.
[86] Exhibit 27240-X0139, CCCOG Response to AUC IRs, PDF page 4.
[87] Transcript, Volume 4, page 535-536.
[88] Transcript, Volume 4, pages 637-638.
[89] Exhibit 27240-X0163.01, Appendix D - Expert Report and CV of Dr. Christopher A. Ollson of Ollson Environmental Health Management, PDF pages 16 and 24.

published in the literature that suggests there would be an impact on the CCCOG members' horses or livestock. The majority of CCCOG members are located well outside any zone of influence for audible sound on their livestock.

109. With respect to animal health, the Commission finds that C. Ollson conducted a literature review and provided a detailed and transparent explanation of the process through which he reviewed scientific databases, and how he applied his expertise to systematically analyze and weigh different sources of information when reaching his conclusions.[90]

110. The Commission finds that like human health, animal health is a subject matter that will generally require opinion evidence to be provided by an independent expert with sufficient specialized expertise. This is also true for literature reviews of animal health effects, as conducting an accurate literature review requires specialized training in both the underlying subject matter, and in the process of systematically surveying existing scientific literature. Since the summary provided by the CCCOG was conducted by a person without any specialized training, knowledge, or experience related to the impacts of wind turbine noise and vibrations on animal health, the Commission affords it no weight.

111. During cross-examination, C. Ollson stated he had not conducted independent primary research on the impacts of wind turbines on animal health, he is not a wildlife biologist, he is not a veterinarian, and his opinion was based on his interpretation of information presented in scientific literature.[91] However, as is evident from his CV, C. Ollson has extensive education and professional experience in environmental science and health risk assessments related to the energy sector, and specifically in relation to wind turbines.[92] The Commission is satisfied that C. Ollson has sufficient knowledge, training, and experience, to conduct the scientific literature review in respect of the risk assessment of the impact of wind turbines on animal health, and to draw inferences from that review as he has done in this proceeding. The Commission therefore places some weight on the evidence of C. Ollson in respect of the risk assessment of wind turbines to animal health in existing scientific literature, although this weight is limited by C. Ollson's limited expertise in the area of animal health.[93]

112. The Commission finds the CCCOG has not provided technical or expert evidence showing that noise or shadow flicker may cause adverse health effects. There is, however, expert evidence from C. Ollson to the effect that noise and shadow flicker created by the operation of wind farms are not expected to produce adverse health effects. The Commission accepts this evidence, which is the only expert evidence before it providing a risk assessment of the impact of wind turbines on human and animal health. Although the Commission does not find that the project will cause or exacerbate adverse health effects, ENGIE is required to comply with conditions to address noise and shadow flicker, including adherence to Rule 012 and upholding its commitment to address shadow flicker concerns that may arise.

113. The Commission notes that although it has found that expert evidence is required in this proceeding in respect of the project's potential risks to human and animal health, in no way has

---

90 Exhibit 27240-X0163.01, Appendix D - Expert Report and CV of Dr. Christopher A. Ollson of Ollson Environmental Health Manage, PDF pages 17-25.

91 Transcript, Volume 1, pages 88-89.

92 Exhibit 27240-X0163.01, Appendix D - Expert Report and CV of Dr. Christopher A. Ollson of Ollson Environmental Health Manage, PDF pages 31-36.

93 See *Crooked Post Shorthorn v Masterfeeds Inc*, 2010 ABCA 106, paragraphs 16-22.

the Commission questioned the relevance or sincerity of the evidence provided by members of the CCCOG on these subjects. The Commission has listened carefully to the credible concerns raised by members of the CCCOG with respect to potential health impacts to themselves, their families, and their animals.

4.5 Consultation

114. ENGIE formally initiated its participant involvement program in June 2019, in accordance with Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments and Gas Utility Pipelines*. ENGIE stated that project-specific information packages were sent to all stakeholders within 2,000 metres of the project boundary and personal consultation was undertaken with stakeholders within 800 metres of the project, as well as those outside that distance who requested personal consultation.

115. ENGIE submitted that following the receipt of stakeholder feedback in December 2019, it spent an additional 20 months modifying the project to specifically address and accommodate stakeholder feedback and requests. In response to stakeholder requests, ENGIE developed and introduced a benefits sharing agreement to offer to share financial benefits from the project with landowners who were not participating in the project but owned a residence within 2,000 metres of a project turbine. In addition, ENGIE stated that it reduced the number of the project's turbines from 96 to 65, acquired additional lands to accommodate changes to the project layout, and shifted the location of numerous turbines to accommodate stakeholder requests.[94]

116. The CCCOG submitted that ENGIE's consultation could have been more effective, transparent, and adequate if concerns were truly considered and addressed meaningfully. For example, Callie Sheppard testified that her family had voiced their concerns to ENGIE, such as concerns with impacts to animal health, biodiversity, and health and wellness.[95] C. Sheppard testified that despite this, no adjustments were made and that she felt that her concerns fell on deaf ears. Mark Hutchings expressed concerns regarding his discussions with ENGIE's land agent, who mentioned that some turbines would not be visible through M. Hutchings' valley. M. Hutchings acknowledged that while ENGIE moved some turbines, he requested that more turbines be moved upon seeing the project's visual simulations. The Hollsteins also requested that turbines be moved due to a ferruginous hawk nest on their land.

117. The CCCOG argued that ENGIE did not relocate some turbines as requested by C. Sheppard and C. Hollstein.[96] ENGIE testified that the majority of people who requested specific turbines be moved were accommodated. It stated that in the instance of the Sheppards and the Zieglers, neither had asked for turbines to be relocated.[97] M. Hutchings testified that although ENGIE had moved some turbines at his request, an increase in turbine size meant that other turbines he had not been aware of at the time would now be visible from his property.[98] With respect to M. Hutchings and the Hollsteins, ENGIE stated that it revised the project layout in response to feedback from them, and to ensure compliance with the applicable setback for the ferruginous hawk nest.

94 Exhibit 27240-X0011, Attachment 10_PIP-Part 1 Report and Appendix A to G, PDF page 4.
95 Transcript, Volume 2, pages 379-383.
96 Transcript, Volume 4, page 588, lines 1-3.
97 Transcript, Volume 1, page 119, lines 3-8.
98 Transcript, Volume 3, page 436, lines 2-13.

118. The CCCOG also expressed concerns that that some participating landowners felt coerced into signing contracts with ENGIE without full knowledge of what they were signing. ENGIE denied the allegation of coercion and submitted that in the context of the lease agreements for hosting landowners, ENGIE paid for them to receive independent legal advice. ENGIE said that lease and benefits sharing agreements contained identical terms for all landowners. ENGIE stated that landowners were educated on their dealings with ENGIE through discussions with ENGIE's land agent or through independent legal advice, and that they entered into the agreements of their own volition. ENGIE submitted that while its land agent may have expressed the opinion that the project would be approved having regard to its compliance with applicable regulatory requirements, this individual adhered to applicable professional responsibilities and no pressure to sign agreements was exerted. ENGIE noted that the participating landowners' genuine support for the project is demonstrated by the 16 landowners that filed statements of intent to participate outlining their endorsement of the project and their views regarding project benefits.

119. The Commission is satisfied that ENGIE's participant involvement program for the project meets the applicable Rule 007 requirements. In making this finding, the Commission notes that ENGIE mailed project information packages to stakeholders, conducted direct consultation meetings with stakeholders by phone and email correspondence, and held two project open houses. ENGIE also demonstrated that it responded to stakeholder feedback by modifying the project to accommodate stakeholder requests.

120. Regarding the outstanding concerns described by members of the CCCOG, the Commission reiterates the following from Decision 2011-436:

> 283. The Commission also finds that the individual concerns raised by interveners do not necessarily mean that the applicants failed to meet the prescribed public consultation requirements provided in AUC Rule 007. To some degree, consultation is an extension and enhancement of the requirement to notify parties that may be directly and adversely affected by the Commission's decision on an application. In the Commission's view, effective consultation achieves three purposes. First, it allows parties to understand the nature of a proposed project. Second, it allows the applicant and the intervener to identify areas of concern. Third, it provides a reasonable opportunity for the parties to engage in meaningful dialogue and discussion with the goal of eliminating or mitigating to an acceptable degree the affected parties concerns about the project. If done well, a consultation program will improve the application and help to resolve disputes between the applicant and affected parties outside of the context of the hearing room.
>
> 284. The Commission acknowledges that even a very effective consultation program may not resolve all intervener concerns. This is not the fault of the applicant or the intervener; it merely reflects the fact that the parties do not agree. With this in mind, the Commission will consider a consultation program to be effective if it meets AUC Rule 007 requirements and has allowed interveners to understand the project and its implications for them, and to meaningfully convey to the applicant their legitimate concerns about the project.[99]

121. While ENGIE was unable to resolve all outstanding concerns, the Commission is satisfied, based on the consultation records and the evidence in this proceeding, that ENGIE's

[99] Decision 2011-436: AltaLink Management Ltd. and EPCOR Distribution & Transmission Inc. – Heartland Transmission Project, Proceeding 457, Application 1606609, November 1, 2011, PDF page 65.

participant involvement program generally achieved the purpose of consultation. That is, through ENGIE's participant involvement program, the public, including CCCOG members, were given sufficient information to understand the nature of the project, identify areas of concern and engage in dialogue with ENGIE with the goal of eliminating or minimizing those concerns.

4.6 Other issues

4.6.1 Visual impacts and impacts on rural character of area

122. A common view expressed by members of the CCCOG was that their ancestors had settled the area generations ago and the importance of their lands to their daily life, sense of well-being and belonging to a well-established community. The CCCOG believed that the construction of the project would visually intrude on the rural character of the project area. The CCCOG maintained that wind turbines and associated infrastructure are an eyesore, that the nighttime presence of warning lights on turbines are highly visible in a rural setting, and that visual screens (such as large trees) and other appropriate mitigation should be used to block the view of these facilities. The CCCOG suggested ENGIE adopt appropriate mitigation to reduce visual impacts.

123. The Commission understands that ENGIE has committed to install the minimum number of turbine lights while maintaining compliance with Transport Canada requirements. The Commission also understands that ENGIE has committed to installing an Aircraft Detection Lighting System, which will allow turbine lights to stay off at night unless an aircraft is approaching. The Commission considers these mitigations to be good starting points in reducing the nighttime visual impacts of the project.

124. ENGIE acknowledged that there would be a change to the visual landscape following project construction. However, ENGIE believed that this would be true of any new structure constructed in the area, and is not a unique impact related to this project. ENGIE prepared visual simulations of the proposed turbines for commonly travelled areas, various locations in response to stakeholder requests during the participant involvement program, and a number of CCCOG residences.

125. C. Sheppard, C. Hollstein and Sylvia Hollstein, members of the CCCOG, were concerned that, because the final turbine model had not yet been selected, ENGIE's visual simulations may not accurately show the true visual impacts of project. In response, ENGIE explained that the photomontages were conservative as all modelling was based on the tallest turbine model being considered.

126. The Commission acknowledges the effort that ENGIE underwent to provide additional visual simulations to CCCOG members who requested them. However, the Commission also understands that photomontages are not a perfect tool for predicting the visual impacts of a project. CCCOG members testified, among other things, that the photomontages provided did not accurately depict the sizes of existing infrastructure in the area and were taken under non-ideal weather conditions. The Commission generally finds photomontages to be helpful, but emphasizes that they cannot be relied upon as being absolutely accurate depictions of a future project.

127. The Commission understands the CCCOG's concerns that construction of the project will alter the rural character of the area. There is no doubt that CCCOG members, many who have

enjoyed this land for generations, and others who purchased their land specifically for its rural character, will experience impacts to their viewscape.

128. However, the Commission recognizes that visual impacts are a consequence of industrial development, and need to be balanced against the project's public benefits. The Commission is also cognizant that the viewscape already includes industrial facilities and other wind developments, as was acknowledged by CCCOG. While the Commission has considered the visual impacts of the project on landowners, and is sensitive to their concerns about changes to the aesthetic character of this land, development in pursuit of the public interest often requires such change.

129. Having regard to the foregoing, the Commission is satisfied that ENGIE has considered the visual impacts of the project, and that it has proposed mitigations to adequately address those visual impacts. The Commission finds that the negative effects resulting from visual impacts of the project are outweighed by the positive effects of the project as a whole.

4.6.2 Existing uses for land

130. Some CCCOG members shared concerns about the impacts of the project on their properties or ranching operations should the project intercept groundwater. The CCCOG was worried that vibrations from turbines would impact their water wells and aquifers, on which their livelihoods depend.

131. The Commission shares ENGIE's view regarding the potential groundwater impacts of the project and observes that there is no evidence on the record indicating such impacts will occur. Neither the CCCOG nor ENGIE hired experts on the topic, nor did they provide data showing how turbines can cause damage to groundwater. The Commission is not convinced that groundwater, wells or aquifers will be affected by the project.

132. As mentioned earlier in Section 4.6.1 of this decision, the Commission understands that many CCCOG members who oppose the project are generational farmers and ranchers who have deep ties with Cypress County.

133. For example, during the hearing, C. Hollstein testified that farmers and ranchers have been forced to become business people instead of being stewards of the land like the generations before them.[100] S. Hollstein testified that the landowners present with no monetary ties to the project were expressing sincere concerns to protect the environment, wildlife, and to retain what many of them have enjoyed for generations.[101]

134. The Commission has weighed the CCCOG's views in determining whether the project's public benefits outweigh its negative impacts. In addition to the CCCOG's testimony, the Commission also heard from landowners who support the project.

135. W. Watson testified that the lands on which he had leased to ENGIE have been in his family's possession since the 1930s. He hoped to continue the tradition of intergenerational

[100] Transcript, Volume 3, page 439, lines 18-23.
[101] Transcript, Volume 3, page 452, lines 18-21.

transfer of that land to his children, who wish to continue the unbroken ranching legacy of their ancestors.[102]

136. Similarly, Lorne Gill, a landowner supporting the project, testified that although his family's farming practices have endured many changes over the years, one of things that remains consistent is prioritizing the integrity of the land because the land is their livelihood and they would never intentionally jeopardize it. [103]

137. The Commission finds that landowners may choose how to use their land without interference from the Commission unless circumstances exist in which the public interest dictates that the Commission exercise its authority in a way that affects how a landowner is able to use the land. This view is affirmed in Decision 24573-D01-2020, in which the Commission stated that:

> … in the absence of legal or government policy restrictions that affect a private landowner's ability to take agricultural land out of production, that choice remains with the landowner and should not be upset by the Commission unless it is clearly demonstrated that the public interest requires the Commission to intervene in the decision.[104]

138. The Commission notes W. Watson's testimony that the current market value of lands in this area is very high due to the proximity to the city and strong demand for country residential land parcels. He stated that the proposed partnership with ENGIE is a ray of hope for his family as it would allow his parcel of land to become economically viable and remain utilized in his ranching operation, rather than become subdivided and further eroded by residential development.[105]

139. The Commission understands that the use of land for a renewable energy project is often a contentious issue within the particular community of rural landowners and residents. The CCCOG has clearly expressed concerns about the erosion of the rural character of the land in the area arising from development. Regarding the Buffalo Trail Wind Power Project specifically, the Commission notes that in the present proceeding, participating landowners are only allowing relatively small portions of their land to be used for project infrastructure. The current use of that land for agriculture or ranching, will mostly remain unchanged. Construction of this project will, however, allow hosting parties to continue their operations while benefiting from the financial assistance that the project infrastructure provides. The Commission finds that the land use impacts of the project are acceptable given the benefits of the project.

4.6.3 Emergency response and public safety

140. ENGIE committed to developing a detailed site-specific emergency response plan, but it stated that the plan cannot be finalized until closer to the start of construction when specific staff members are assigned to the project. However, ENGIE noted that it has prepared a draft emergency response plan and obtained feedback on that plan from local emergency responders, including the current fire chief/emergency services coordinator for Cypress County, and the

[102] Transcript, Volume 3, page 482, lines 4-14.
[103] Transcript, Volume 3, page 476, lines 14-20.
[104] Decision 24573-D01-2020: Elemental Energy Renewables Inc. - Brooks Solar II Power Plant, Proceeding 24573, Application 24573-A001, January 16, 2020, PDF page 29.
[105] Transcript, Volume 3, page 485, lines 3-22.

director of public works/director of emergency management. ENGIE committed to engaging with suppliers, contractors and county officials to further develop and finalize a site-specific emergency response plan and site-specific health and safety plans, prior to the start of construction.

141. The CCCOG questioned the ability of ENGIE and local responders to adequately react to emergencies associated with the project and suggested that there are currently systemic problems with county's fire prevention system, namely a lack of water and equipment with which to apply the water.

142. ENGIE submitted that the Cypress County fire chief confirmed that the fire department is well-staffed and well-resourced. In addition, ENGIE provided a number of reference letters from fire departments across Canada in which they acknowledged having a positive relationship with ENGIE, and that many local fire departments had received training and financial assistance from ENGIE.

143. ENGIE maintained that the risk of fire at a wind facility is very low as it has operated 1,244 wind turbines across North America and since 2006, and there have only been three fires in its fleet. In each case, the fire was contained and did not spread to the local area.

144. The Commission understands that ENGIE has communicated with, and continues to actively communicate with local emergency responders regarding the project and its emergency response plan. ENGIE has also committed to contacting local landowners as part of the development of the emergency response plan. Having regard to the factors described above and ENGIE's commitments, the Commission is satisfied that ENGIE has adequately considered and addressed the safety risks associated with the project and imposes the following condition of approval:

c. ENGIE shall continually update and improve the site-specific emergency response plan and associated emergency response program and advise the local fire departments. The updates and improvements shall include but not be limited to incorporating all mitigation measures required from discussions with the local fire departments and input from interested stakeholders and local residents.

4.6.4 Project construction, operation and mitigation

145. The CCCOG was concerned about the noise, traffic, and dust that would result from the construction, operation, and maintenance of the project. Some CCCOG members described previous issues resulting from other wind projects under construction in the area; CCCOG members, Laurie Dirk and C. Hollstein, testified that local roads, including Highway 41, have suffered deterioration from construction vehicles for the Cypress Wind Power Project. The CCCOG also expressed concerns that the costs to repair wear on roads from construction activities might increase taxes for residents in the area.

146. ENGIE stated that it will enter into a road use agreement with Cypress County prior to construction. The road use agreement will include pre- and post-construction assessments of road conditions, and if damages to roads are caused by construction, ENGIE will be responsible for the costs of repair. ENGIE added that it will implement standard dust control measures such as speed limits and the application of dust suppressants when necessary.

147. ENGIE also committed to ensuring that all construction equipment is maintained with muffler systems. Finally, ENGIE stated that it will use best efforts to comply with the construction noise guidelines outlined in Section 2.11 of Rule 012, including the limiting of construction to daytime hours subject to extenuating circumstances.

148. Given the commitments made by ENGIE to mitigate construction and operation impacts, the Commission is satisfied that ENGIE has sufficiently addressed the potential impacts of the project on the local area and residents during construction and operation of the project.

4.6.5 Decommissioning and reclamation

149. The CCCOG questioned whether ENGIE had sufficient funds to undertake reclamation of the project in the event of insolvency or other financial constraints. The CCCOG also questioned ENGIE's decision to not set aside funds for reclamation, but to instead rely on the salvage value of the project's infrastructure. CCCOG stated there is no evidence that salvage values will be sufficient to cover the reclamation costs.

150. ENGIE clarified that it never intended to rely solely on salvage values to fund decommissioning and reclamation activities, but rather that it will have sufficient funds set aside. ENGIE referred to its lease which stated that no later than two years prior to the anticipated expiration of the 35-year term, ENGIE would provide irrevocable security for decommissioning and restoring the land, and that the decommissioning security would be adjusted annually in accordance with any positive change to the consumer price index.[106] ENGIE explained that project lease agreements require ENGIE to comply with future legislative requirements to provide decommissioning security. If future requirements are not imposed, ENGIE would be obligated under the leases to post decommissioning security in favour of the landowners.

151. The Commission is satisfied that existing statutory reclamation requirements address the responsibilities that project owners have at a project's end of life. The Commission emphasizes the following finding from Decision 26214-D01-2022:

> 287. *The Environmental Protection and Enhancement Act* requires applicants to conserve and reclaim specified land. Once a site is considered adequately reclaimed, reclamation certificates are issued. The *Conservation and Reclamation Directive for Renewable Energy Operations* requires renewable energy operators to create and maintain a project-specific conservation and reclamation plan. The Commission notes that Buffalo Plains has submitted its conservation and reclamation plan as part of its applications and recognizes that this plan is a living document that will be updated throughout the project's life cycle. The Commission is satisfied that existing project reclamation requirements have been addressed through Buffalo Plains' commitment to adhere to the requirements outlined in the *Conservation and Reclamation Directive for Renewable Energy Operations*.[107]

152. The above findings apply equally to ENGIE and the project, and the Commission's view on this matter remains unchanged.

---

[106] Exhibit 27240-X0119, Appendix B3 - Landowner Submissions (Dirk), PDF pages 39 to 40.

[107] Decision 26214-D01-2022: Buffalo Plains Wind Farm Inc. – Buffalo Plains Wind Farm, Proceeding 26214, February 10, 2022, PDF Page 59.

4.6.6 Benefits sharing agreements

153. ENGIE entered into a benefits sharing agreement with some landowners. Under some of these agreements, landowners agree not to report concerns over safety issues or non-compliance with regulatory requirements until they first provide ENGIE 60 days notice.[108] Since these agreements may be construed as limiting the ability of landowners to exercise rights conferred under statutes the Commission administers, or conditions imposed in this decision, the Commission finds that it is necessary to address these agreements to the extent they relate to matters within the Commission's jurisdiction.

154. As a preliminary comment, some provisions of the statutory scheme that the Commission administers confer rights on persons, largely for the purpose of protecting their private rights. In the Commission's view, this includes their statutory standing rights.[109] In many cases, a party may contractually agree not to exercise a statutory right of this nature.[110] The Commission considers that such agreements may be an effective way for applicants and non-participating landowners to enter mutually beneficial arrangements with respect to renewable energy projects. The Commission also considers the enforcement of private contracts such as a benefits sharing agreement are outside of its jurisdiction,[111] and is a matter to be decided through litigation or arbitration, as applicable.

155. However, the benefits sharing agreements have no effect on the Commission's jurisdiction or authority. No contractual arrangements made between landowners and a project proponent may limit the Commission's jurisdiction to hear from landowners. This jurisdiction was not disputed in the proceeding by ENGIE.[112] If a concern or complaint from a landowner comes before the Commission in respect of the project, the Commission will hear that complaint on its merits, regardless of whether prior notice was provided to ENGIE by the landowner under the benefits sharing agreement.

156. Further, when deciding whether or not a project is in the public interest, the Commission considers whether applicable regulatory requirements have been satisfied. Contractual obligations preventing landowners from reporting future non-compliance with regulatory requirements may be relevant to this analysis. Regardless, based on the evidence ENGIE provided in the hearing, the Commission is satisfied that ENGIE does not intend to rely on the benefits sharing agreements to impede landowners from providing notice of safety or regulatory compliance concerns to the applicable regulatory authorities. The Commission is also satisfied ENGIE intends to report any such concerns to the applicable regulatory authorities immediately upon becoming aware of them. For these reasons, the Commission finds the purported restriction of the ability of landowners to report matters under the benefits sharing agreements are not relevant to whether the project is in the public interest in this case.

---

[108] Exhibit 27240-X0111, Appendix BI – Landowner Submissions, PDF page 16, section 8. It is evident this is the meaning of this clause, having regard to the principles of contractual interpretation: see *IFP Technologies (Canada) Inc. v EnCana Midstream and Marketing* , 2017 ABCA 157, paragraphs 79-85.

[109] *Alberta Utilities Commission Act*, Section 9(2).

[110] See Ontario (Human Rights Commission) v Etobicoke (Borough), [1982] 1 SCR 202.

[111] Decision 22546-D01-2019: Stirling Wind Project Ltd. – Stirling Wind Project; Alberta Electric System Operator -Stirling Wind Project Connection Needs Identification Document; AltaLink Management Ltd. – Stirling Wind Project Connection Facility Applications, Proceeding 22546, Applications 22546-A001 to 22546-A006, April 26, 2019, paragraph 69.

[112] Transcript Volume 3, page 5, line 17.

4.6.7 Other concerns

157. The CCCOG asserted that ENGIE's applications were insufficient because they did not provide a full and satisfactory understanding of the issues at hand. The CCCOG provided examples such as the misidentification of CCCOG house locations, misclassified and missing wetlands, misclassified dams, missing water wells, and incorrectly classified native grasslands.

158. ENGIE acknowledged a number of minor inaccuracies in its applications and addressed the specific examples provided by the CCCOG.

159. The Commission is satisfied that any remaining informational gaps in the project have been identified and addressed throughout the course of this proceeding.

160. ENGIE submitted a *Historical Resources Act* application on October 15, 2021.[113] Alberta Culture and Status of Women issued *Historical Resources Act* requirements for the project on November 4, 2021, specifying that a historic resources impact assessment (HRIA) must be completed prior to construction. The requirements include conducting an assessment of lands with high potential for containing archaeological and/or palaeontological sites.

161. ENGIE stated that it had completed an HRIA for the project area and is in the process of investigating archeological sites identified in the vicinity of the project's construction footprint.[114] ENGIE also stated that it will adhere to the guidance provided in the *Historical Resources Act* during project construction.

162. The Commission is satisfied that ENGIE has completed an HRIA as directed by Alberta Culture and Status of Women, and that the sites identified must be managed as required by the legislation. The Commission understands that ENGIE will continue to work with Alberta Culture and Status of Women to obtain a *Historical Resources Act* approval for the project.

163. CCCOG members Laurie Dirk and Mark Hutchings raised concerns about the project's interference with cell phone and wireless internet service. ENGIE stated that the project will not interfere with cameras or radio equipment, and submitted that there is no evidence that the project will adversely affect cell phone reception or internet service.

164. The Commission is not convinced that the project will affect cell phone reception or wireless internet service as there is no compelling evidence supporting a potential impact. The Commission notes that ENGIE has committed to complying with the Radio Advisory Board of Canada's *Technical Information and Coordination Process between Wind Turbines and Radiocommunication and Radar Systems* (RABC Guideline), and to consulting with internet service providers regarding existing microwave links in the area, if that is required by the RABC Guideline.

165. ENGIE stated that final equipment selection for the project's turbines would be made at a later date. The Commission imposes the following condition to ensure that the equipment selected does not result in impacts greater than those considered in this applications:

d. Once ENGIE has finalized its equipment selection for the Buffalo Trail Wind Power Project, it must file a final project update to the Commission to confirm that the project

[113] Exhibit 27240-X0001, AUC Application, PDF page 26.
[114] Exhibit 27240-X0166.01, ENGIE Reply Evidence, PDF page 9.

has stayed within the final project update specified allowances for wind power plants. The final project update must be filed at least 90 days prior to the start of construction.

4.7 Environment and wildlife

166. In this part of the decision, the Commission will discuss environmental issues, including issues related to (1) the role of AEP renewable energy referral reports in the Commission's consideration of wind power plant proceedings generally and this proceeding specifically; (2) native grassland; (3) wetlands and sensitive amphibians; and (4) other environmental impacts.

4.7.1.1 What is the role of AEP directives and referral reports?

167. AEP is responsible for the overall management and regulation of wildlife in Alberta, and the Commission is responsible for approving the construction and operation of wind power plants under the *Hydro and Electric Energy Act* and the *Alberta Utilities Commission Act*.

168. AEP's assessment of a project's environmental effects is reflected in a renewable energy referral report, which takes into account AEP's *Wildlife Directive for Alberta Wind Energy Projects* (the Directive)[115] and other related AEP guidelines and standards. The AEP referral report provides an independent review, conducted by a wildlife professional with experience assessing the environmental impacts of wind projects in Alberta. The Commission, when assessing a project's environmental effects, takes into account the referral report. In the Commission's view, a relevant factor when assessing the information included in a referral report is that:

> AEP is responsible for the overall management and regulation of wildlife in Alberta, including establishing policies, directives, guidelines and similar administrative procedures (collectively, wildlife policies) under the *Wildlife Act* and the *Environmental Protection and Enhancement Act*. The legislation and wildlife policies include responsibilities for the designation, protection and recovery of wildlife, including endangered animals and other sensitive species, and wildlife habitat. The legislation and wildlife policies apply to the potential impacts caused by the construction and operation of wind and solar power plants.[116]

> The role of … AEP… is to ensure that the development of wind energy projects includes appropriate consideration and mitigation of potential effects on Alberta's wildlife populations.[117]

169. After reviewing the latest amendments to the project, AEP ranked the project as a moderate risk to wildlife and wildlife habitat. In particular, AEP assessed the risk to native grassland habitat as low and the risk to wetland habitat and associated wildlife as high.

170. In addition to this, the Commission considers all of the environmental evidence filed by an applicant and interveners and any evidence given in an oral hearing. The Commission considers and weighs all of the evidence when deciding if a project is in the public interest.

---

[115] *Wildlife Directive for Alberta Wind Energy Projects*, Alberta Environment and Parks, effective September 17, 2018.

[116] Bulletin 2018-04, Roles and responsibilities of the Alberta Utilities Commission and Alberta Environment and Parks for applications to construct and operate wind and solar power plants, March 8, 2018.

[117] *Wildlife Directive for Alberta Wind Energy Projects*, Alberta Environment and Parks, PDF page 1.

171. Accordingly, the Commission has considered the AEP referral report, the AEP referral report amendment, the environmental evidence provided by AECOM and other evidence submitted by ENGIE, as well as the evidence submitted by the CCCOG and its environmental expert, Cottonwood Consultants Ltd. (Cottonwood).

4.7.2 Native grassland

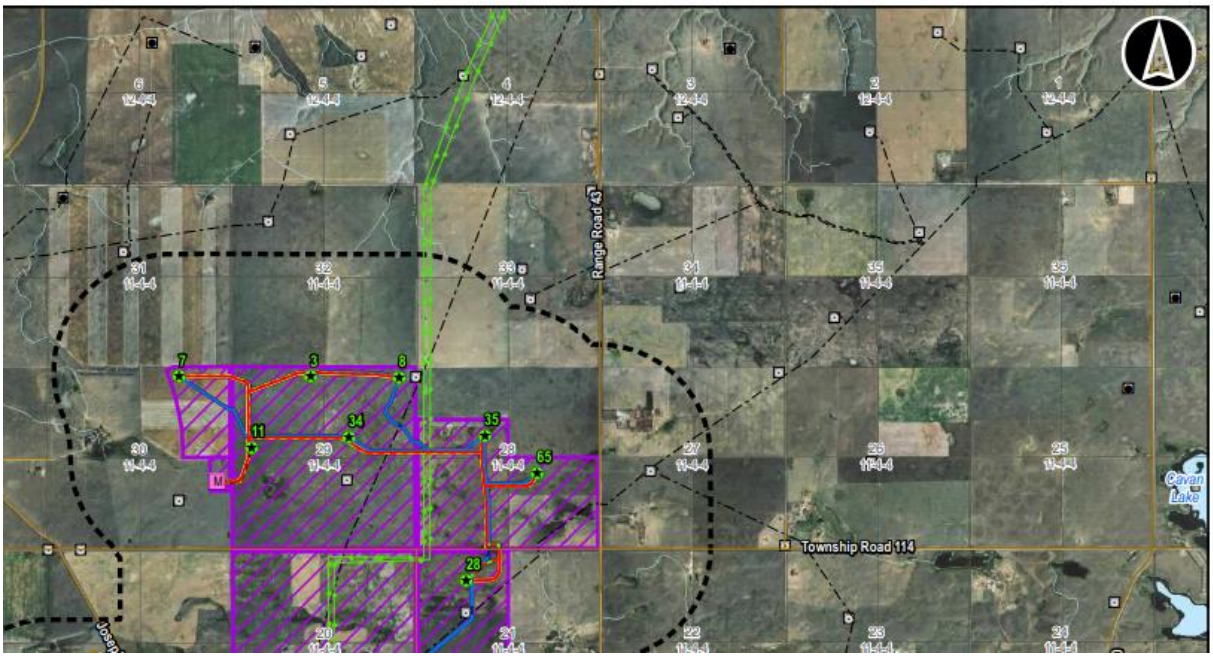
172. Native grasslands are an at-risk habitat directly related to some of Canada's fastest declining species and are diminishing because of human agricultural and industrial activities on or near the grasslands. ENGIE's consultant AECOM and landowner Wade Watson submitted that W. Watson's lands (Section 29, Township 11, Range 4, west of the Fourth Meridian) were modified grasslands while Cottonwood, argued that the lands were native grasslands.

173. The Commission must decide whether the landcover in Section 29 does or does not qualify as native grassland according to AEP's native grassland definition that requires a minimum of 30 percent cover of native grass and forb species.[118] That determination is important because AEP's guidance states that projects should avoid or minimize impacts to native grassland. The Commission finds, based on a weighing of the relevant evidence, that the landcover in Section 29 does not qualify as native grassland.

4.7.2.1 Section 29, Township 11, Range 4, west of the Fourth Meridian (Section 29)

174. The proposed development in Section 29, which is the northernmost section of the project area as shown on the map below, consists of placing four turbines (3, 8, 11 and 34), two underground collector lines, and two access roads within the section.

Figure 2. Project infrastructure proposed for Section 29[119]



[118] Exhibit 27240-X0006, Attachment 5 - Environmental Evaluation, PDF page 115.
[119] Exhibit 27240-X0006, Attachment 5 - Environmental Evaluation, PDF page 13.

4.7.2.1.1 Classification of native grassland

175. In assessing a project, one of the factors that AEP considers is the applicant's adherence to the Directive. Standard 100.1.1 of the Directive states:

> Wind turbines, wind energy infrastructure, and temporary work spaces must be sited to avoid or minimize their occurrence in important wildlife habitats or areas that attract or funnel birds or bats (Baerwald 2008; Alberta Sustainable Resource Development 2010). For example, without limiting the generality of the foregoing, such areas include **native grasslands**, old growth forest stands, mapped Wildlife Sensitive Layers, named water bodies, valley breaks (including coulees), valleys of large permanent watercourses and the eastern slopes region. [emphasis added].

176. The Directive defines native grasslands as:

> An area of prairie in which natural vegetation consists primarily of perennial grasses. The native species composition must be greater than 30% (Adams et al. 2005)[120]

177. AEP's initial impact rating for native grassland habitat was assessed as high for this project but ENGIE made a number of amendments, primarily reducing the number of turbines, and following AEP's review of the project amendments, AEP rated the impact as low.[121] At the time of the second impact rating, Section 29 had been characterized as modified grassland based on the applicant's survey and inspection of that section. Cliff Wallis of Cottonwood Consultants, however, filed evidence and testified that Section 29 should be characterized as native grassland. C. Wallis stated that his methodology in determining the status of Section 29 included a desktop review of available data, and examination of historical and recent aerial imagery, and field work during which he conducted vegetation assessments at the edge of Section 29 in August 2022.[122] In response to an undertaking at the hearing, C. Wallis also submitted photos and quantitative plot data (per cent cover) for major native vegetation species observed in plots conducted during his field visit. He stated that the data shows vegetative cover for native grasses and forbs was over the minimum percentage required to be considered native grassland in the area surveyed.[123]

178. AECOM conducted a vegetation survey for Section 29 on May 14, 2019. The survey consisted of its staff meandering through the section and visually assessing the vegetation but did not include vegetation plots. Vegetation plots record the percentage of plant species present in an area of representative habitat in order to determine a classification for the overall habitat. Photos and field notes from the field survey were included in the written evidence.[124] AECOM concluded that Section 29 did not qualify as native grassland, as native species comprised less than 30 per cent of applicable vegetation.[125] Rather, it submitted that the vegetation cover in Section 29 was modified grassland that was dominated by Kentucky bluegrass.[126] AECOM's opinion was supported by W. Watson, the owner of Section 29, whose evidence showed that non-native grass species had been introduced to the land over the past 25 years, most recently in 2019 by seeding and that as a consequence he had observed a decline in native grasses. AECOM

[120] *Wildlife Directive for Alberta Wind Energy Projects*, PDF page 20.
[121] Exhibit 27240-X0049, AEP response to the AUC request for an amendment review - Referral Report, PDF page 1.
[122] Exhibit 27240-X0116, Appendix F - Evidence of Cliff Wallis.
[123] Exhibit 27240-X0191, CCCOG Cliff Wallis Undertaking Response, PDF page 2.
[124] Exhibit 27240-X0184, Appendix U2 - Land Cover Assessment and Survey Information.
[125] Exhibit 27240-X0106.01, ENGIE Response to CCCO IRs, PDF page 4.
[126] Exhibit 27240-X0184, Appendix U2 - Land Cover Assessment and Survey Information.

submitted that the introduction of these non-native seeding practices would change the vegetative makeup of Section 29.[127] AECOM referenced the Government of *Alberta's Conservation Assessments in Native Grasslands* document which provides pre-disturbance methodologies for classifying grasslands which states:

> Landowners and land managers may have significant knowledge of the access, soil, vegetation, and weed issues present on their lands. Their perspective can provide valuable information for SSAs [site study areas] and PDSAs [pre-disturbance site assessments].

179. For the reasons that follow, the Commission finds that Section 29 is more likely than not modified grassland and accepts the proposed development on this section.

180. The Commission finds that both AECOM and C. Wallis had the requisite experience and that there was no significant difference in the timing of the field surveys they respectively conducted. Further, neither party strictly followed the recommended methodology provided in the *Conservation Assessments in Native Grasslands* guidelines.

181. However, based on the access provided to AECOM to assess a much greater area of Section 29 than C. Wallis experienced at the edge of the section, and the historical account of land use provided by the landowner, the Commission finds that Section 29 is more likely than not modified grassland. As a result, the applicant's proposal to site the project in that location is accepted.

4.7.2.1.2 Summary

182. The Commission has determined that Section 29 is more likely than not modified grassland due to AECOM's ability to survey more of Section 29 and the landowners historical account of land use. Therefore, the Commission accepts the proposed construction on Section 29 assuming the mitigations provided are followed including; scheduling vegetation clearing outside of the migratory bird nesting period (i.e., April 8 to August 28) to the extent possible, utilizing minimal disturbance construction techniques for collector lines (e.g., horizontal directional drilling or plough-in), and the completion of a pre-disturbance site assessment (PDSA) including Section 29.

4.7.2.2 Northeast quarter of Section 2, Township 10, Range 3, west of the Fourth Meridian

183. The issue in this section of the decision is whether the northeast quarter of Section 2, Township 10, Range 3, west of the Fourth Meridian (NE Section 2) also qualifies as native grassland according to the AEP native grassland definition requiring a minimum 30 per cent cover of native grass and forb species. The Commission finds that the north half of Section 18 does not qualify as native grassland.[128]

184. In addition to the native grassland in Section 29, C. Wallis submitted that NE Section 2 is also native grassland. C. Wallis described his methodology as a desktop review of available data, and historical and recent aerial imagery, in addition to a field assessment where he conducted vegetation assessments at the edge of NE Section 2. The field assessment of NE Section 2 was

[127] Exhibit 27240-X0159, Appendix E - Expert Report and CVs of Chris LaFleur and Rick Lauzon of AEC, PDF page 50.
[128] Exhibit 27240-X0006, Attachment 5 - Environmental Evaluation, PDF page 115.

conducted in August 2022.[129] In response to a hearing undertaking, C. Wallis also submitted quantitative plot data for native vegetation cover assessed during his field visit which included photos. The data shows vegetative cover for native grasses and forbs was over the percentage required to be considered native grassland in the area surveyed.[130]

185. AECOM submitted that NE Section 2 was modified grassland. In reply evidence and undertakings, AECOM explained that Brendan McGinitie[131] and Cole Burns[132] conducted a vegetation survey for NE Section 2 on June 22, 2020. AECOM indicated that NE Section 2 did not qualify as native grassland, based on the AEP definition (i.e., native species comprise less than 30 per cent). AECOM's methodology for vegetation field surveys in NE Section 2 consisted of one quantitative vegetation plot in an area representative of upland vegetation conducted by qualified biologists.[133]

186. Accordingly, there is a factual disagreement between the two independent witnesses. Both professional biologists described their methodology, visited the project site and the lands at issue, and gathered photographic evidence to support their conclusions.

187. The supply from both parties of quantitative data collected during the growing season by qualified professionals places additional weight on the survey conditions and plot placement for determination of data quality. The Commission notes that although C. Wallis is qualified and experienced in this area of expertise, the plot placement and survey conditions observed were more compromised than AECOMs. A comparison of photos suggests AECOM may have had preferable survey conditions due to less cattle impacts at the time of survey. Since the inflorescence (i.e., seedhead) and leaf parts (e.g., blade, ligule, sheath) can be key identifiers for graminoids species (i.e., grass-like plants), the potential absence of key identifying features at the time of survey was considered to be a potential limiting factor. Therefore, the Commission is persuaded that NE Section 2 is not native grassland.

4.7.3 Wetlands and sensitive amphibians

188. The issue in this section of the decision is whether the proposed impacts to wetlands and sensitive amphibians are acceptable when weighing the overall public interest.

189. AECOM identified a total of 792 wetlands in the project study area, first using historical aerial photos and recent satellite imagery, and then via field verification to confirm the data.[134] ENGIE has proposed 25 instances of infringements into 100-metre wetland buffers set out in the *Wildlife Directive for Alberta Wind Energy Projects,* and direct impacts to two Class III wetlands.

190. AECOM's evidence showed that two sensitive amphibian species were located in the project area, northern leopard frog and the plains spadefoot toad. AECOM did not propose to infringe on setbacks for wetlands where sensitive amphibians were detected. However, despite mitigations such as exclusion fencing and timed crane path crossings (more extensively discussed below) to reduce the risk to sensitive amphibians that might be present, AEP still

[129] Exhibit 27240-X0116, Appendix F - Evidence of Cliff Wallis.
[130] Exhibit 27240-X0191, CCCOG Cliff Wallis Undertaking Response, PDF page 2.
[131] Exhibit 27240-X0182, Appendix U1a - Brendan McGinitie Brendan CV.
[132] Exhibit 27240-X0183, Appendix U1b - Cole Burns CV.
[133] Exhibit 27240-X0106.01, ENGIE Response to CCCO IRs, PDF page 4.
[134] Exhibit 27240-X0006, Attachment 5 - Environmental Evaluation, PDF page 45.

found that the number of impacts to wetlands and wetland buffers were numerous enough to merit a high risk to wetland habitat and sensitive amphibians.[135]

191. C. Wallis also raised concerns with the scope of amphibian surveys conducted. He submitted that federally listed species at risk or sensitive amphibians, including northern leopard frog, western (barred) tiger salamander and plains spadefoot toad, could use various water bodies and wetlands, and that wetlands were under surveyed. C. Wallis requested, as a condition of approval, that ENGIE conduct further pre-construction surveys for amphibians including areas where the project's footprint overlaps with temporary wetlands and ephemeral water bodies.[136] The Commission finds that the requested surveys are reasonable and justifiable for this project.

192. The Commission accepts ENGIE's mitigation measures as reflected in the following conditions of approval during those times when construction will occur in or near a wetland area.

e. Prior to the amphibian breeding season (April 15 to June 30), ENGIE will install amphibian exclusion fencing at the edge of work areas to prevent amphibians from entering construction zones. The amphibian exclusion fencing will be at least 0.9 metres high and will be buried at least 15 centimetres deep into the ground to prevent amphibians from burrowing underneath; where the substrate is not suitable for this, the fencing may be weighed down. Stakes used to support the fencing will face inward to eliminate additional climbing opportunities for wildlife.

f. ENGIE shall ensure that amphibian exclusion fencing will be in place prior to the amphibian breeding season (April 15 to June 30) and removed once construction activities at the wetland have been completed or after September 30.

g. ENGIE shall ensure that crane path wetland crossings will be timed to avoid the amphibian breeding season (April 15 to June 30). If the crossing must occur during this period, a qualified wildlife biologist will systematically search affected areas for sensitive amphibians prior to commencement of the crossing. If sensitive amphibians are detected, a qualified wildlife biologist will translocate the amphibians. A permit will be obtained from Alberta Environment and Protected Areas prior to the translocation and the translocation will be conducted in accordance with the conditions outlined in the permit.

h. ENGIE shall ensure that the amphibian exclusion fencing will be monitored weekly by the Environmental Monitor and any areas requiring repair are to be identified and addressed in a timely manner. If any amphibians are observed in the work area, they will be relocated to the wetland by a qualified wildlife biologist with appropriate permitting.

i. Where the underground collector system and fibre optic cables to the aircraft detection lighting system are installed within the 100-metre setback of Class III and above wetlands using the plough-in technique (or trenched if ground conditions are unsuitable for plough-in), ENGIE will monitor the work area for signs of amphibians. If amphibians are discovered, ENGIE will stop construction and contact Alberta Environment and Protected Areas to discuss mitigation measures.

[135] Exhibit 27240-X0049, AEP response to the AUC request for an amendment review - Referral Report, PDF page 2.

[136] Exhibit 27240-X0116, Appendix F - Evidence of Cliff Wallis.

193. The Commission finds that the project's impacts to wetlands are acceptable, given the positive benefits of the project to the public, and the commitments from ENGIE to follow the *Alberta Wetland Policy* and requirements of the *Water Act* including code of practices.[137]

4.7.4 Other environmental impacts

194. In this section of the decision, the Commission discusses the project's impacts on wetlands as they relate to wildlife, wildlife features, birds and bats. The Commission finds that the environmental impacts of the project can be appropriately mitigated if ENGIE adheres to its commitments.

4.7.4.1 Are the project's impacts to ferruginous hawks acceptable?

195. The project encroaches on the 1,000-metre setback from ferruginous hawk nests.[138] ENGIE identified one ferruginous hawk nest on a transmission tower for which they have proposed encroachment within two metres during construction and 69 metres during operation. One other ferruginous hawk nest was identified in a tree and encroachment to within 632 metres has been proposed during construction. The proposed infrastructure inside of the encroachment areas include portions of the underground collector system, upgrades to existing roads, and the substation, but does not include any turbines. Therefore, ENGIE is of the opinion that operational impacts to these features will be limited, and has proposed construction be scheduled to occur outside of the grassland breeding bird season (i.e., April 1 – July 15) as a means of mitigating potential impacts to the nests.

196. AEP stated that construction of permanent infrastructure within the 1,000-metre setback does not align with the Directive; however, taking into account the mitigations proposed, AEP assigned a moderate risk to breeding raptors.[139] The Commission finds that ENGIE has correctly applied the principles of avoidance to other wildlife features and mitigations appropriately in these circumstances to minimize the potential effects from the project to an acceptable level.

4.7.4.2 Are the project's impacts to birds acceptable?

197. C. Wallis submitted that there is a known mortality risk for birds as a result of collisions with wind turbines. He recommended that nocturnal migration surveys should be conducted given the project's proximity to environmentally significant coulees and the Cypress Hills uplands. ENGIE's position was that the surveys were conducted in accordance with the *Sensitive Species Inventory Guidelines* and that further mitigation would be addressed if post-construction monitoring and conversations with AEP found it necessary.[140] AEP has determined that the risk to breeding birds and overall bird mortality is moderate.[141]

198. CCCOG submitted that the area has high quality habitat and its location corresponds with a bird migration route. These landowner submissions included surveys conducted by third-party biologists including MULTISAR and Kestrel Environmental Ltd., which detailed the species

[137] Exhibit 27240-X0006, Attachment 5 - Environmental Evaluation, PDF page 47, 55 and 56.
[138] Exhibit 27240-X0006, Attachment 5 - Environmental Evaluation, PDF page 46.
[139] Exhibit 27240-X0049, AEP response to the AUC request for an amendment review - Referral Report, PDF page 2.
[140] Exhibit 27240-X0106.01, ENGIE Response to CCCO IRs, PDF 33.
[141] Exhibit 27240-X0049, AEP response to the AUC request for an amendment review - Referral Report, PDF page 3.

present, and classifications and quality of habitat on surrounding lands.[142, 143] ENGIE asserted that the surveys were from off-project lands and that the bird surveys conducted and included in its environmental evaluation were sufficient in capturing the quality of habitat for the area. ENGIE reviewed the third-party reports and did not consider any additional mitigation measures were necessary. The Commission finds that the bird surveys conducted by ENGIE were consistent with best management practices and applicable regulations outlined in the *Sensitive Species Inventory Guidelines*, and that they capture bird data in a means consistent with the standards of Alberta wind development projects.

199. The Commission finds that no further bird surveys are required on the basis that ENGIE is required to conduct post-construction monitoring and the implementation of mitigation in discussion with Alberta Environment and Protected Areas (AEPA).

200. Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants* requires approval holders to submit annual post-construction monitoring survey reports to AEPA and the Commission. Therefore, the Commission imposes the following condition of approval:

j. ENGIE shall submit a post-construction monitoring survey report to Alberta Environment and Protected Areas – Fish and Wildlife Stewardship 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 Alberta Environment and Protected Areas requires surveys pursuant to subsection 3(3) of Rule 033: *Post-approval Monitoring Requirements for Wind and Solar Power Plants.*

4.7.4.3 Are the project's impacts to bats acceptable?

201. C. Wallis submitted that there is a known mortality risk for bats from wind turbine operations and recommended that additional data be collected on the presence of bats within the project area to determine whether curtailment (i.e., altering turbine operation during certain time and weather conditions) should be a requirement of project approval and acoustic bat deterrents be investigated by ENGIE.[144] ENGIE argued that bat mitigation is variable, dependent upon the mortality data observed during post-construction monitoring and the best means of assessing and determining the requirements and type of future mitigation was with AEPA during the post-construction monitoring. In addition, ENGIE stated that surveys were conducted in accordance with *Wildlife Directive for Alberta Wind Energy Projects*, *the Bat Mitigation Framework for Wind Development,* and the *Bats and Wind Farms: Pre-Siting and Pre-construction Survey Protocols*.[145] AEP has assessed the risk to bats as moderate. The Commission finds that ENGIE has adhered to the appropriate standards of bat activity data collection and is satisfied with the proposed mitigations and commitment to conduct post-construction monitoring and implementation of future mitigation in collaboration with AEPA.

4.7.4.4 Cumulative effects

202. Members of the CCCOG and C. Wallis expressed concerns about the cumulative environmental impacts of the project, given the other approved and under-construction wind projects in the area. Adjacent and to the west of the Buffalo Trail Wind Power Project lies the

[142] Exhibit 27240-X0111, Appendix B1 - Landowners Submissions.
[143] Exhibit 27240-X0112, Appendix B2 - Landowner Submissions (Hollstein & von Huene).
[144] Exhibit 27240-X0116, Appendix F - Evidence of Cliff Wallis.
[145] Exhibit 27240-X0106.01, ENGIE Response to CCCO IRs, PDF page 11.

201.6-MW Cypress Wind Power Project. Adjacent and to the east lies the 270-MW Bull Trail Wind Power Project. Both projects are currently under construction. C. Wallis suggested that the Commission work with AEP to lay the groundwork for a regional cumulative effects study. The CCCOG did not think the project should be approved until there is a fulsome understanding of the impacts of the project in combination with the two approved projects currently under construction.

203. ENGIE noted that it had already assessed the project's cumulative noise and shadow flicker impacts. ENGIE also submitted that there is no legislative or regulatory requirement to assess cumulative effects and that such an assessment is outside the scope of the Commission's jurisdiction regarding this decision. ENGIE clarified that it would continue consulting with Cypress County to discuss any lessons learned in the context of other wind projects being developed in the county.

204. During the hearing, AECOM stated that there was no cumulative effects assessment in this case, but that such an assessment could be a helpful tool in determining the overall environmental impacts given this project's proximity to the other projects in the area.[146] AECOM testified that the post-construction monitoring program would likely be a more valuable tool than any upfront cumulative effects assessment, because an upfront cumulative effects assessment would be overly reliant on assumptions, as opposed actual data.[147] C. Wallis said that cumulative effects assessments could be a useful tool, and agreed that post-construction monitoring was an important part of this analysis.[148]

205. While cumulative environmental impacts may be relevant to whether or not a project is in the public interest, in this case, the Commission was not presented with sufficient evidence of cumulative environmental impacts. Accordingly, the Commission makes no determination with respect to cumulative environmental impacts in this decision. Should AEPA undertake studies for cumulative effects, the Commission expects ENGIE to abide by any requirements, recommendations and directions provided. This includes open participation in working groups, additional monitoring or mitigation that the AEPA considers necessary to address cumulative effects occurring from two or more projects within the local area, as defined by AEPA.

4.7.5 Summary

206. The Commission finds that the environmental impacts of the project can be appropriately mitigated if ENGIE adheres to the commitments made, including abiding by all pertinent provincial and federal environmental legislation and guidelines, diligent implementation of the mitigation measures proposed in the environmental evaluation report and environmental protection plan, and adherence to the environmental conditions of approval imposed by the Commission. The Commission notes that AEP reached a similar conclusion when it assigned the project an overall moderate risk level.

[146] Transcript, Volume 1, pages 178-179.
[147] Transcript, Volume 1, page 180, line 6 – page 181, line 21.
[148] Transcript, Volume 2, page 248, lines 12-16.

5 Conclusion

207. 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 the following conclusions, the Commission summarizes the findings made in this decision report, and applies the legislative scheme in light of those findings. In doing so, the Commission weighs the benefits of the project against its negative impacts.

208. 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.

209. 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.

210. The Commission is satisfied that noise from the project will comply with the requirements set out in Rule 012. The Commission finds that, contrary to the assumption used in the project's NIA, Highway 41 is not a heavily travelled road. The Commission also finds that a ground attenuation factor of 0.7 is appropriate for the project area in noise modelling. Finally, the Commission requires ENGIE to complete a comprehensive sound level survey at certain receptors following construction of the project.

211. There are many circumstances which may affect the value of a property and are beyond the direct control of property owners. The impact of nearby wind turbines on property values is one of those circumstances. Although the Commission acknowledges that there is insufficient empirical data to conduct a statistical analysis of the potential impact, we do find the that the opinion evidence of B. Gettel is helpful but not determinative. There is a potential for negative property value impacts for existing and future residential building sites in the range of 0 to 10 per cent if the project is approved. Given that the likelihood of any impact is uncertain, and that the assessed magnitude of impact is low, the Commission finds that the project's benefits outweigh this potential for impact.

212. The Commission is satisfied that the potential shadow flicker impacts from the project have been properly predicted and that ENGIE has proposed a reasonable management plan to address stakeholder concerns about shadow flicker from the project when the project commences operation. The Commission requires ENGIE to promptly address stakeholder concerns or complaints and implement mitigation measures when necessary.

213. The Commission does not consider that the project will cause or exacerbate adverse health effects for humans or animals. In coming to this conclusion, the Commission considered C. Ollson's evidence as his was the only expert evidence presented before the Commission. C. Ollson conducted a literature review and used his expertise to assess the noise and shadow flicker impacts on human and animal health. The Commission notes that C. Ollson, although not an expert in animal health, has extensive education and professional experience in environmental science and health risk assessments in relation to wind projects.

214. Regarding consultation, the Commission finds that ENGIE's participant involvement program has satisfied the requirements in Rule 007. The Commission understands that ENGIE was not able to resolve all remaining concerns about the project, but is satisfied that ENGIE resolved a significant number of concerns and provided a reasonable opportunity for stakeholders to engage in meaningful discussion about their concerns. Throughout its participation involvement program, ENGIE worked with landowners to reduce direct impacts to nearby residents by relocating or reducing turbines, including a reduction to the total number of project turbines from 96 to 65.[149]

215. The Commission is satisfied that the negative environmental impacts associated with the project, including impacts to native grassland, wetlands, and sensitive amphibians, will be adequately addressed through ENGIE's mitigation, commitments, and adherence to the Commission's conditions of approval.

216. 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 up to 400 MW of low emissions electricity and to contribute to the diversification of Alberta's energy resources. As described in the public interest assessment section of the decision, one of the purposes of the *Hydro and Electric Energy Act* is to assist the government in controlling pollution and ensuring environment conservation in developing electric energy in Alberta. The Buffalo Trail Wind Power Project, like other renewable energy projects, will reduce emissions during its lifetime of operation, as compared to non-renewable energy projects. This will contribute to Alberta's overall efforts to reduce the impacts of carbon emissions on the environment. The project would also result in local economic benefits for landowners in the form of lease agreements with hosting landowners and benefits sharing agreements with non-participating landowners. These agreements stipulate annual financial payments to landowners depending on the infrastructure constructed near a residence. Cypress County will benefit from the capital investment and tax revenue associated with the project, which ENGIE stated would be around $700 to $800 million,[150] and $1.8 million[151] per year over 30 years. The project will also provide employment opportunities by way of more than 200 jobs created during construction and additional long-term jobs necessary for the project's operation.

217. Overall, for the reasons outlined in this decision and subject to the conditions in Appendix C, the Commission finds that ENGIE 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.

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

[149] Transcript, Volume 4, page 532, lines 6-9.
[150] Transcript, Volume 1, page 130, line 5.
[151] Transcript, Volume 1, page 130, line 6.

6 Decision

219. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the applications and grants ENGIE Development Canada GP Inc. the approval set out in Appendix 1 – Power Plant Approval 27240-D02-2023 to construct and operate the Buffalo Trail Wind Power Project.

220. Pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, the Commission approves the applications and grants ENGIE Development Canada GP Inc. the permit and licence set out in Appendix 2 – Permit and Licence 27240-D03-2023 to construct and operate the Buffalo Trail North 453S Substation.

221. Pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, the Commission approves the applications and grants ENGIE Development Canada GP Inc. the permit and licence set out in Appendix 3 – Permit and Licence 27240-D04-2023 to construct and operate the Buffalo Trail South Substation.

222. The appendices will be distributed separately.

Dated on February 8, 2023.

Alberta Utilities Commission

(original signed by)

Douglas A. Larder, KC
Vice-Chair

(original signed by)

Matthew Oliver, CD
Commission Member

Appendix A – Proceeding participants

Name of organization (abbreviation) **Company name of counsel or representative**
ENGIE Development Canada GP Inc. (ENGIE) Terri-Lee Oleniuk Nicole Bakker
Concerned Cypress County Owner Group (CCCOG) Ifeoma Okoye Richard Secord Selina Sahota
Gill Group Chelsea Gill
Wade Watson
Alberta Utilities Commission Commission panel Douglas A. Larder, KC, Vice-Chair Matthew Oliver, CD, Commission Member Commission staff Gary Perkins (Commission counsel) Patrick Schembri (Commission counsel) Kloria Wen Allan Anderson Joan Yu Brittney Sammons Glenn Harasym

Appendix B – Oral hearing – registered appearances

Name of organization (abbreviation) Name of counsel or representative	Witnesses
ENGIE Development Canada GP Inc. (ENGIE) Terri-Lee Oleniuk Nicole Bakker	Rob Maitland Dan Kremer Chris LaFleur Rick Lauzon Roberto Martinez Christopher Ollson Robert Telford
Concerned Cypress County Owner Group (CCCOG) Ifeoma Okoye Selina Sahota	Cliff Wallis Brian Gettel James Farquharson Callie Sheppard Shannon Pakula Carol Krauss Mark Hutchings Paul von Huene Carol Hollstein Sylvia Hollstein Laurie Dirk
Gill Group Chelsea Gill	Lorne Gill
Wade Watson	Wade Watson

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 27240-D01-2023 that require subsequent filings with the Commission and will be included as conditions of Power Plant Approval 27240-D02-2023:

a. ENGIE shall conduct a post-construction comprehensive sound level (CSL) survey, including an evaluation of low frequency noise, at receptors R50, R122, R514 and R515. The post-construction CSL survey must be conducted under representative conditions and in accordance with Rule 012: *Noise Control*. Within one year after the project commences operations, ENGIE shall file a report with the Commission presenting measurements and summarizing results of the post-construction CSL survey.

d. Once ENGIE has finalized its equipment selection for the Buffalo Trail Wind Power Project, it must file a final project update to the Commission to confirm that the project has stayed within the final project update specified allowances for wind power plants. The final project update must be filed at least 90 days prior to the start of construction.

j. ENGIE shall submit a post-construction monitoring survey report to Alberta Environment and Protected Areas – Fish and Wildlife Stewardship 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 Alberta Environment and Protected Areas 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 27240-D01-2023 that do not require a subsequent filing with the Commission:

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

c. ENGIE shall continually update and improve the site-specific emergency response plan and associated emergency response program and advise the local fire departments. The updates and improvements shall include but not be limited to incorporating all mitigation measures required from discussions with the local fire departments and input from interested stakeholders and local residents.

e. Prior to the amphibian breeding season (April 15 to June 30), ENGIE will install amphibian exclusion fencing at the edge of work areas to prevent amphibians from entering construction zones. The amphibian exclusion fencing will be at least 0.9 metres high and will be buried at least 15 centimetres deep into the ground to prevent amphibians from burrowing underneath; where the substrate is not suitable for this, the fencing may be weighed down. Stakes used to support the fencing will face inward to eliminate additional climbing opportunities for wildlife.

f. ENGIE shall ensure that amphibian exclusion fencing will be in place prior to the amphibian breeding season (April 15 to June 30) and removed once construction activities at the wetland have been completed or after September 30.

g. ENGIE shall ensure that crane path wetland crossings will be timed to avoid the amphibian breeding season (April 15 to June 30). If the crossing must occur during this period, a qualified wildlife biologist will systematically search affected areas for sensitive amphibians prior to commencement of the crossing. If sensitive amphibians are detected, a qualified wildlife biologist will translocate the amphibians. A permit will be obtained from Alberta Environment and Protected Areas prior to the translocation and the translocation will be conducted in accordance with the conditions outlined in the permit.

h. ENGIE shall ensure that the amphibian exclusion fencing will be monitored weekly by the Environmental Monitor and any areas requiring repair are to be identified and addressed in a timely manner. If any amphibians are observed in the work area, they will be relocated to the wetland by a qualified wildlife biologist with appropriate permitting.

i. Where the underground collector system and fibre optic cables to the aircraft detection lighting system are installed within the 100-metre setback of Class III and above wetlands using the plough-in technique (or trenched if ground conditions are unsuitable for plough-in), ENGIE will monitor the work area for signs of amphibians. If amphibians are discovered, ENGIE will stop construction and contact Alberta Environment and Protected Areas to discuss mitigation measures.

Appendix D – List of commitments provided by ENGIE

Appendix D - List of Commitments provide

(consists of 5 pages)

Topic	Commitment/Mitigation	Exhibit / Transcript Reference	PDF page / Transcript page
Shadow Flicker (SF)			
SF	If a nearby resident reports issues with shadow flicker to ENGIE, ENGIE has committed to implement appropriate mitigation measures to limit adjusted case shadow flicker caused by the Project to a maximum of 8 hours per year.	27240-X0004	15
		27240-X0038	7-9
		27240-X0166.01	16
		Transcript Volume 1	p. 40, lines 21-24
SF	If a nearby resident is experiencing issues with shadow flicker, ENGIE commits to implementing the following process: 1. Upon notice of the landowner issue, ENGIE will request as much detail as possible to assist with prompt resolution of the issue, including the dates that shadow flicker occurred and the start and end time and a short video of the shadow flicker (if possible). 2. ENGIE will send a representative to the Project site to investigate the issue, including to determine the time of day that the issue is occurring and the turbines that are causing the shadow flicker for the landowner. 3. ENGIE will propose and offer to implement appropriate mitigation measures to limit the amount of shadow flicker from the Project to a maximum of 8 hours per year at the residence. Mitigation measures may include the installation of blinds, curtains or other screening devices, or the implementation of an operational curtailment plan, if necessary.	27240-X0037	9
		Transcript Volume 1	p. 107, lines 15-19
SF	ENGIE will endeavour to implement the shadow flicker mitigation steps in accordance with the following timeline: • A representative of ENGIE's operations team will arrange a meeting at the complainant's home within 2 weeks of complaint to discuss the nature of the complaint. • If necessary, ENGIE will retain an expert consultant to assess turbines causing shadow flicker and the dates/times of shadow flicker. This assessment will be delivered within 2 months of the post-complaint meeting. Time is required to account for weather (e.g., extended cloudy periods) and wind direction which may impact the expert's ability to assess shadow flicker impacts. • A representative of ENGIE's operations team will consult with the complainant regarding proposed mitigation measure(s) within 1 month of the expert assessment. • ENGIE will use reasonable efforts to implement mitigation measure(s) within 3 months of reaching agreement on mitigation measure(s), subject to any seasonal constraints affecting the implementation of the mitigation measures.	ENGIE Undertaking Responses	2
SF	Stakeholders may escalate any shadow flicker complaints in accordance with the following process: • Complaint is made to ENGIE's on-site operations team (contact details will be mailed to stakeholders upon commencement of operations). • If ENGIE's on-site operations team does not respond in accordance with the timelines set out above, the matter can be escalated to ENGIE's Director of Operations for Canada. • If unsatisfied with the response of the Director of Operations for Canada, escalate the complaint to the AUC.	ENGIE Undertaking Responses	2

Commitment Tracking Table

Topic	Commitment/Mitigation	Exhibit / Transcript Reference	PDF page / Transcript page
SF	ENGIE will file a report with the Commission detailing (a) any complaints or concerns it receives or is made aware of regarding shadow flicker from the Project during its first year of operation, and (b) ENGIE's responses to the complaints or concerns.	Transcript Volume 1	p. 165, line 21, to p. 166, line 8
Turbine Lighting			
Lighting	ENGIE is committed to installing the minimum number of turbine lights while maintaining compliance with Transport Canada's Canadian Aviation Regulations.	27240-X0166.01	16
ADLS	ENGIE has committed to voluntarily installing an Aircraft Detection Lighting System ("**ADLS**") at the Project, subject to receiving necessary regulatory approvals.	27240-X0166.01	16
		27240-X0013	4, 221, 247
		Transcript Volume 1	p. 40, lines 10-15 p. 122, line 22, to p.124, line 22
Noise			
Noise	To reduce construction noise, ENGIE commits to ensure that all internal combustion engines are maintained with muffler systems and to limit driving speeds on access roads. ENGIE will investigate and promptly respond to any noise complaints it receives during Project construction.	Transcript Volume 1	p. 85, line 8, to p. 86, line 9
		27240-X0166.01	19
Environment[1]			
Wildlife Data	ENGIE is committed to ensuring that wildlife data is kept current as per Standard 100.2.3 of the Wildlife Directive. ENGIE will perform surveys for Burrowing owls, Sensitive raptors, and Sharp-tailed Grouse a minimum once every two years until the Project is commissioned.	27240-X0006	201
	If new burrowing owls or dens, raptor nests or sharp-tailed grouse leks are identified during these surveys, a mitigation plan will be developed in consultation with Alberta Environment and Parks ("**AEP**") to meet the intent of the Directive.	27240-X0010	11, 18
Construction – Native Grassland	To minimize disturbance to native grassland during construction, ENGIE has committed to the following mitigation measures: • Crane paths will not be cleared of vegetation, stripped of topsoil, or graded. • On native grassland, the underground collector system will be installed using minimal disturbance construction techniques.	27240-X0006	61, 62

[1] For the benefit of the Commission, ENGIE has reproduced certain environmental commitments that are particularly relevant to the concerns raised by the Concerned Cypress County Owners Group during the course of the proceeding. Additional context on the commitments reproduced here and additional environmental commitments are detailed in ENGIE's Environmental Evaluation report (Exhibit 27240-X0006), Environmental Protection Plan (Exhibit 27240-X0007), and Renewable Energy Referral Report (Exhibit 27240-X0010).

Topic	Commitment/Mitigation	Exhibit / Transcript Reference	PDF page / Transcript page
	• Construction activities in native grassland habitat will occur during frozen or dry ground conditions, and rig matting and geotextiles will be used. • To limit the spread of invasive or noxious weed species and to reduce soil erosion, areas cleared for construction will be reclaimed as soon as reasonably possible. • For native grasslands, reclamation will align with the Conservation and Reclamation Directive for Renewable Energy Operations, Best Management Practices outlined in the Native Plant Revegetation Guidelines for Alberta and landowner preferences. • For native grasslands, reclamation techniques will align with the Recovery Strategies for Industrial Development in Native Prairie for the Dry Mixedgrass Natural Subregion of Alberta, Native Prairie for the Mixedgrass Natural Subregion of Alberta, and a native seed mix will be used in areas of native grassland habitat. • For native grasslands, construction will be completed in adherence to the Principles for Minimizing Surface Disturbance in Native Grasslands.	27240-X0010 27240-X0159	12 14
Construction – Sensitive Habitat	To minimize the disturbance to sensitive habitat within valley/coulee breaks and their 100 m setbacks during construction, ENGIE has committed to the following mitigation measures: • Crane paths will not be cleared of vegetation, stripped of topsoil, or be graded. • Collector lines and the fiber optic cable for the ADLS will cross valleys/coulees via horizontal directional drilling. • Construction activities within valley/coulee breaks will be scheduled to occur outside of the grassland bird breeding season (April 1 to July 15).	27240-X0006 27240-X0010	77, 78, 121 13
Construction - Wetlands	To reduce impacts to wetlands and their 100 m setbacks, ENGIE has committed to the following alternative mitigation measures: • Where a crane path crosses a wetland, rig matting will be used to reduce disturbance to the wetland. • Minimal disturbance construction techniques will be used when installing the underground collector system, where practical. • To avoid compaction of soils, construction activities in setback areas of Class III and above wetlands will be conducted during dry or frozen ground conditions. • Clearing of vegetation, topsoil stripping, and grading within the 100 m setback will be restricted to the minimum area required for the Project. • Within the 100 m setback of Class III and above wetlands, erosion and sediment control measures (e.g., rig matting, geotextiles, vegetated buffer zones, earthen berms, or silt fencing) will be implemented, as appropriate.	27240-X0010	14
Amphibians	To reduce impacts to sensitive amphibians and their breeding ponds, ENGIE has committed to the following mitigation measures where construction will occur in a wetland with known presence of sensitive amphibians: • Prior to the amphibian breeding season (April 15 to June 30), amphibian exclusion fencing will be installed between the work area and wetland at the edge of the work area to prevent amphibians from entering construction zones. The amphibian exclusion fencing will be at least 0.9 m high and will be buried at least 15 cm deep into the ground to prevent amphibians from	27240-X0006	78

Topic	Commitment/Mitigation	Exhibit / Transcript Reference	PDF page / Transcript page
	burrowing underneath; where the substrate is not suitable for this, the fencing may be weighed down. Stakes used to support the fencing will face inward to eliminate additional climbing opportunities for wildlife. • The amphibian exclusion fencing will be in place prior to the amphibian breeding season (April 15 to June 30). The amphibian exclusion fencing will be removed once construction activities at the wetland have been completed or after September 30. • The amphibian exclusion fencing is to be monitored weekly by the Environmental Monitor and any areas requiring repair are to be identified and addressed in a timely manner. If any amphibians are observed in the work area, they will be relocated to the wetland. • Crane path wetland crossings will be timed to avoid the amphibian breeding season (April 15 to June 30). If the crossing must occur during this period, a qualified professional wildlife biologist will systematically search affected areas for sensitive amphibians prior to commencement of the crossing. If sensitive amphibians are detected, a qualified wildlife biologist will translocate the amphibians. A permit will be obtained from AEP prior to the translocation and the translocation will be conducted in accordance with the conditions outlined in the permit. • Where the underground collector system and fibre optic cables to the ADLS are installed within the 100 m setback of Class III and above wetlands using the plough-in technique (or trenched if ground conditions are unsuitable for plough-in), the work area will be monitored for signs of amphibians. If amphibians are discovered, construction will stop and AEP-FWS will be contacted to discuss mitigation measures.	27240-X0010 27240-X0159 27240-X0164	15 10, 29 2
Construction	Construction activities within 1,000 m of a ferruginous hawk nest will be scheduled to occur outside of the grassland bird breeding season (i.e., April 1 – July 15) if the nests are considered to be active. Nest checks prior to commencing construction activities after July 15 will be completed since young-of-year ferruginous hawks are known to remain in the nest area.	27240-X0006 27240-X0010	78 17
Emergency Response Plan			
ERP	A comprehensive site-specific Emergency Response Plan ("**ERP**") will be developed for the Project prior to the commencement of construction. ENGIE will continue to consult with Cypress County regarding the ERP.	27240-X0001 27240-X0106.01 27240-X0166.01	15, 18 41 17-18
ERP	ENGIE has committed to contacting local landowners as part of the response and notification procedures established by the site-specific ERP and to share ENGIE's contact information.	27240-X0166.01 27240-X0106.01	17 42
Ongoing Relationships			
Stakeholder Feedback	ENGIE is committed to continuing to work with all stakeholders throughout the lifecycle of the Project to address any concerns as they arise.	27240-X0166.01 27240-X0011 Transcript Volume 1	4 4 p. 41, lines 12-18 & p.42, lines 22-25
Radiocommunication			
RABC Guideline	ENGIE is committed to compliance with the Radio Advisory Board of Canada's Technical Information and Coordination Process between Wind Turbines and Radiocommunication and Radar Systems ("**RABC Guideline**") and to consult with internet service providers regarding their already established microwave links in the area, if required by the RABC Guideline.	27240-X0166.01	22

Commitment Tracking Table

Topic	Commitment/Mitigation	Exhibit / Transcript Reference	PDF page / Transcript page
Post-Construction Monitoring			
Wildlife	ENGIE commits to three years of post-construction monitoring as required by the Wildlife Directive, PCMP Protocol, and AUC Rule 033. ENGIE notes that the AEP may require additional years of monitoring if necessary. The results of post-construction monitoring will be provided to the AUC and AEP.	27240-X0013	10
		27240-X0164	3
		27240-X0010	21
		27240-X0166.01	15
Bats	If high bat mortalities are identified during post-construction monitoring, ENGIE commits to the implementation of appropriate mitigation measures during operation, in discussion with AEP, to mitigate bat mortalities.	27240-X0164	2
		27240-X0010	16
Birds and Bats	ENGIE is committed to implementing mitigation measures during operation in the event AEP identifies high mortality through its review of post-construction monitoring results.	27240-X0166.01	15
		Transcript Volume 1	p. 40, lines 5-9
Noise	ENGIE is committed to compliance with Rule 012 and expects to confirm such compliance through appropriate and representative post-construction monitoring.	27240-X0106.01	18