

Attachment 1 - Supplemental Project FAQ

This supplemental Frequently Asked Question (FAQ) document reflects questions raised by the public and project area landowners, occupants, and residents during engagement in spring 2022.

Who is the Developer of the Project? Why are they sometimes called Algonquin Power?

The Developer of the Project is SPWC Development GP Inc. (SPWC). SPWC is a subsidiary of Algonquin Power & Utilities Corp., a renewable energy and utility corporation based out of Ontario that provides services throughout Canada and the USA.

Algonquin Power & Utilities is undergoing a rebranding to a new corporate name, Liberty. SPWC is the “General Partner” of the entity owned by Liberty, within which all assets of the Willow Ridge Wind Project (the Project) will be held.

You can find additional information about the Developer on their website: www.algonquinpower.com

The company contact is:

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Why was this site chosen for the Project?

This site was selected due to its valuable wind energy resource and proximity to existing transmission lines. Specific parcels for turbine infrastructure were influenced by existing ground disturbance from cultivation and other agricultural activities, while avoiding impacts on sensitive environmental features such as native grasslands and wetlands.

How many turbines are allowed in a quarter section?

The Municipal District of Willow Creek (MD) regulates the siting of wind turbines in its Land Use Bylaw. The Bylaw identifies that the Municipal Planning Commission may approve multiple wind turbines per quarter section on a case-by-case basis.

The Project has been designed to efficiently use the wind in the region while respecting environmental restrictions to the greatest extent feasible, noise restrictions, property setbacks and lease agreements with landowners. Once all of these factors are considered, multiple turbines may be located on a single quarter section. The Project proposes five parcels to have two wind turbines.

What are the turbine setbacks?

Regulated turbine setbacks are important for the protection of land use and the environment, and to provide energy developers with a reliable and predictable set of rules to develop energy resources.

The Alberta Utilities Commission (AUC) has established turbine setbacks to residences based on the assessed daytime and nighttime Cumulative Sound Levels anticipated to occur as a result of the Project.

The MD regulates turbine setbacks in its Land Use Bylaw. The Bylaw requires that turbines are located:

- a) Two times the height of the turbine from any dwelling;
- b) Height of the turbine plus 10% from any parcel boundary; and
- c) 100 metres from a municipal road allowance.

Alberta Transportation limits the proximity of turbines to highways. Alberta Transportation requires that the Project's turbines be setback 270 metres from the highway centerline (height of the turbine including blade length, plus 70 metres).

The Project as proposed will comply with the AUC, MD and Alberta Transportation's required setbacks.

I've heard that wind turbine foundations are deep and can impact groundwater. What is the impact of the Project on the quantity or quality of groundwater resources?

Wind turbine foundations are designed on a site-specific basis incorporating multiple factors, including surface and below surface conditions, turbine size, and environmental forces that can affect the stability of a wind turbine. Generally speaking, wind turbine foundations in Alberta are constructed using a concrete foundation averaging between 4-5 metres (15-20 feet) below ground. Given the limited Project Footprint, and distance between turbines and existing residences where wells are typically located, the Project is not anticipated to significantly impact groundwater quality or production rates.

SPWC will also conduct a subsurface investigation. This investigation will look at the potential for the Project to impact existing water wells. If the Project conflicts with existing water wells, minor adjustments to the location of a turbine or other forms of mitigation will be considered.

My home is not shown in the maps provided in the Project-Specific Notification Package. How do I know that my home was appropriately considered in the assessment of potential noise and shadow flicker impacts?

The AUC requires that noise and shadow flicker effects are evaluated for all residences within 1.5 km of a proposed wind turbine. Residences identified in Project materials were identified up to this distance. Residences outside of the 1.5 km distance were not included.

What is being incorporated into the Project to protect birds?

Through its environmental consultant, Dillon Consulting Limited, SPWC has conducted the required wildlife and environmental studies required by the AUC as directed by Alberta Environment and Parks (AEP). A project Referral Report was prepared by AEP, which provides the Government of Alberta's assessment of risk to wildlife. The Referral Report will be included in applications submitted to the AUC and MD. The presence of birds of prey, particularly in the Belly River Valley, has been noted and addressed in the Project's Environmental Evaluation report.

SPWC has incorporated comprehensive site mitigation measures to be implemented during construction and operation of the Project, reducing the impact of the Project's activities and infrastructure on the environment. Once the Project is constructed, SPWC is required by the AUC and AEP to conduct a post-construction bird mortality monitoring program. Completing the monitoring program will identify if bird mortality rates exceed thresholds established by AEP, and if additional mitigation is warranted.

SPWC encourages residents to provide their knowledge of local wildlife and environmental resources to be considered in the evaluation of potential effects of the Project.

Will the Project impact my ability to farm?

SPWC has sited the Project Footprint, including wind turbines and access roads to minimize the potential effects on agricultural uses on lands where infrastructure is proposed. Land disturbance will be restricted to the approved Project Footprint. Disturbance to agriculture lands outside of the Project Footprint are not proposed and will be avoided throughout the life of the Project. If unplanned disturbance occurs outside of the Project Footprint (e.g., erosion, impoundment), SPWC commits to remediating and reclaiming off-site impacts, as soon as feasible.

The Project is proposing to use taller turbines than previously installed in the region. Will the taller turbines result in more noise and shadow flicker compared to existing, shorter turbines in the area?

Each wind project is assessed based on the infrastructure proposed and must be operated in compliance with the AUC's Rule 012: Noise Control regulations, which limits the amount of allowable noise at a residence. Noise is strictly limited by the AUC and turbines, regardless of the size, cannot exceed these noise limitations.

There are no restrictions on shadow flicker required by the AUC at this time. The Project was evaluated to not exceed 60 hours of total shadow flicker per year for residences within the study area, with most residences predicted to experience shadow flicker for less than 30 hours per year.

SPWC asks that stakeholders who are concerned with noise or shadow flicker resulting from the Project contact SPWC to discuss the Project, and potential noise or flicker mitigation measures.

SPWC conducted noise and shadow flicker modelling to determine compliance with established noise thresholds and maximum shadow flicker that could be experienced at residences within the study area. The results of these models were provided to stakeholders in the notification package and the open house to help stakeholders understand the impact of the Project. The models can also be reviewed on the Project's website: <https://willowridgewindproject.com/>.

I have heard that turbine fires can happen. What is the applicant doing to mitigate a potential turbine fire?

Turbine fires (and other failures) are exceptionally rare. Turbine technology, building materials and monitoring is constantly being improved to mitigate the risk of a turbine fire. SPWC confirms that turbines will be fitted with sensors to detect fire or other abnormal conditions that could pose a safety risk and shut down the turbine.

In addition, SPWC is required to prepare and maintain an Emergency Response Plan to be reviewed and approved by local emergency response managers. The Emergency Response Plan will include the steps that will be undertaken in the event of a fire, and other emergency events.

What are the Project impacts on views?

The addition of wind turbines in proximity to the Project site will result in a change in the visual landscape, particularly with respect to views of the Belly River Buttes located east of the Project, and Chief Mountain located southwest of the Project, where there are no pre-existing wind turbines in operation.

SPWC developed a series of visualizations that illustrates how the proposed wind turbines could appear from different viewpoint locations throughout the Project area. These visualizations were provided to stakeholders in the notification package and the open house to help stakeholders understand the impact of the Project. The visualizations can also be reviewed on the Project website: <https://willowridgewindproject.com/>.

What are the Project's impacts on property values?

SPWC understands that renewable energy projects, as with any other form of development, have the potential to affect the property values of residential properties or acreages.

The AUC has recognized that although wind turbines can adversely affect property values of residential acreages (estimated between 0% and 10% for a recent wind energy project of similar size), the benefits of economic development (i.e., property taxes paid over a project's operational life) in a municipality

outweigh the potential impacts on property values. Property values of agricultural lands (i.e., lands used for cultivation, ranching) were considered to not be impacted by the presence of wind turbines.

Will the Project impact local tourism?

SPWC is not aware of any tourist destinations or operations in the vicinity of the Project, and SPWC has not received comments or concerns from local tourist organizations regarding the Project.

What are the Project impacts on subdivision and development?

Generally, the Project is not expected to impact other forms of development; however, some site-specific constraints may exist that may affect certain types of development (e.g., oil or natural gas wells, new wind turbines, solar panels, etc.) depending on the proximity to the Project's infrastructure.

New dwellings planned in the Project area would be subject to approval by the MD, including setbacks from turbines as established in the Land Use Bylaw. If you are considering developing a new residence, reach out to the MD to understand the local development restrictions when developing in proximity to a turbine.

Will the Project affect my utility bills?

All electrical power generated in Alberta is distributed via the Alberta Interconnected Electrical System, which is operated by the Alberta Electrical System Operator. Pricing for electricity is based on many factors, including costs for generation, and transmission and distribution services, which are generally shared amongst all Albertans. Given that power generated by the Project is to be purchased through a third party, the Project is not anticipated to result in material impacts on the average consumer's monthly utility bill.

SPWC encourages interested stakeholders to consult with the AUC Commission and the Alberta Electrical System Operator for more information on the factors influencing their consumer utility bills.

<https://www.aeso.ca/aeso/continuing-education/guide-to-understanding-albertas-electricity-market/>

<https://www.auc.ab.ca/current-electricity-rates-and-terms-and-conditions/>

Is the Project supported through government subsidies?

No, SPWC is not receiving government subsidies to support the development, construction, or operation of the Project.

What are the Project's health effects?

General effects on human health from wind projects are not strongly supported in the peer-reviewed medical literature. SPWC asks that stakeholders who anticipate acute responses to the Project identify their concerns to SPWC, allowing SPWC to investigate potential alternative measures to mitigate the impact on those individuals.

SPWC understands that there is a diversity of information provided in the public domain, and that many sources provide information that may conflict with one another and can be confusing. The AUC has considered concerns regarding health effects in previous applications for wind energy facilities. Generally speaking, wind turbines have the potential to generate sound, visual disturbances (e.g., shadow flicker), and electromagnetic fields that depending on the magnitude, frequency, and duration of occurrence, may be a nuisance if not managed properly. SPWC commits to operating the Willow Ridge Wind Project in compliance with the Rule 012: "Noise Control" and the respective conditions of the anticipated Approval, Permit and License.

What are the Project's health effects with respect to sound?

SPWC has proposed specific wind turbine models that can be operated under reduced sound power modes. The Project has also been sited to ensure compliance with the AUC Rule 012: Noise Control, which limits the potential nuisance effects of noise that may affect the enjoyment and reasonable use of residences in the study area. Consequently, noise generated by the Project is not anticipated to result in adverse health effects on residents in the study area.

What are the Project's health effects with respect to shadow flicker?

The predicted cumulative duration of shadow flicker is determined using spatial modelling methods using a specific, conservative set of assumptions. This Project proposes to not exceed 60 hours of total shadow flicker per year for residences within the study area, with most residences experiencing less than 30 hours of shadow flicker per year. Typical public concerns regarding the health effects of shadow flicker relate to the potential trigger of epileptic seizures; however, the typical frequency of flickering effect generated by wind turbines is below the threshold needed to trigger an epileptic seizure in sensitive children or adults. Consequently, adverse health effects associated with shadow flicker generated by the Project are not predicted to occur. Additional information related to the potential risk of seizures in people with photosensitive epilepsy can be obtained from the Epilepsy Society:

<https://epilepsysociety.org.uk/about-epilepsy/epileptic-seizures/seizure-triggers/photosensitive-epilepsy/wind-turbines-and>

What are the Project's health effects with respect to electromagnetic fields?

Transmission lines and substations are known to generate low-frequency electromagnetic fields; however, the strength of electromagnetic fields decreases rapidly with distance from the source. Given the distance between the Project's infrastructure and residences within the study area, nuisance effects associated with exposure to electromagnetic fields generated by the Project will be mitigated. Additional information related to the potential risk of exposure to electromagnetic fields is provided by Health Canada and the World Health Organization:

<https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/everyday-things-emit-radiation/power-lines-electrical-appliances.html>

https://www.who.int/health-topics/electromagnetic-fields#tab=tab_2

What is the Project's impact on aerial crop sprayers?

SPWC contacted a local aerial crop spray company and the Alberta Aerial Applicators Association to determine if the location and operation of wind turbines would impact the ability of a reasonably experienced pilot to conduct aerial spray operations in the vicinity of the Project.

Aerial crop sprayers will generally avoid working in areas near turbines. The capacity for an aerial applicator to work in the vicinity of wind turbines can vary depending on many factors, including but not limited to, pilot experience, landscape and weather conditions.

SPWC commits to develop and implement an air spray notification and turbine shut-down procedure to allow for safe operation of aircraft in the vicinity of turbines to be initiated with at least 24 hour's notice, in alignment with recent decisions issued by the AUC.

Could the turbine blades potentially throw ice on public or private roads?

The Project is located in a region with a relatively low risk for the accumulation of ice on wind turbine blades due to the dry climate. In the unlikely event that ice accumulates on rotating turbine blades, the maximum potential "throwing distance" is approximately 430 metres (0.26 miles). Although some public roads and highways are located within this maximum potential throwing distance, the risk is considered

exceptionally low. Additionally, SPWC confirms that the Wind Turbine Generator model proposed for the Project (i.e., Siemens Gamesa SGRE 6.2-170) will be deployed with icing detection systems and shut-down protocols implemented (when required) to further reduce the risk of ice throw during operation.

I am not a signed Project Landowner. How does the Project benefit me?

SPWC recognizes that not all stakeholders benefit equally from the lease agreements established with landowners, whose lands the Project's infrastructure is located on. The Project will benefit the community by providing additional revenue to the MD through annual taxation. Further, SPWC welcomes the input of potentially affected stakeholders to determine where community benefits may be incorporated in development or operation of the Project.

What is the liability to the landowner if a turbine fails?

As the owner and operator of the Willow Ridge Wind Project, SPWC would be liable for any property damage, injury or loss of life that would be occur as a result of construction, operation or closure activities.

SPWC retains liability for the removal of infrastructure, remediation, and reclamation of the Project Footprint at the end of life. SPWC is required to construct and operate the Project in accordance with the *Alberta Environmental Protection and Enhancement Act*, and the associated Conservation and Reclamation Regulation, which require operators of wind energy projects to reclaim Project lands to "Equivalent Land Capability", the same as other energy or natural resource projects in Alberta.

Should the Project be unforeseeably decommissioned, SPWC asserts that existing regulatory requirements and oversight provide sufficient protection measures to manage liability for the Project's landowners and their neighbours. Furthermore, the residual value of scrap metal from the closure and removal of the wind turbines is adequately sufficient to cover the costs of closure activities, including remediation and reclamation to Equivalent Land Capability.

I am opposed to the Project. How can I voice my concerns?

All proposed facilities reviewed by the AUC and the MD are evaluated in consideration of their site-specific conditions, benefits, and impacts. SPWC welcomes the input of potentially affected stakeholders to determine where site-specific mitigation and community benefits may be incorporated into the development and operation of the Project.

Once the respective applications are submitted, residents, landowners, First Nations, and other stakeholders will have the opportunity to submit their concerns to the AUC and the MD through the respective regulatory procedures.

Do you have additional questions? Please contact: Camila Ramos-Strankman (Dillon Consulting Limited) at cramos-strankman@dillon.ca or 403.215.8885 ext. 4322.