



Alberta Wilderness Association
"Defending Wild Alberta through Awareness and Action"

November 21, 2023

Alberta Utilities Commission
Proceeding 28501

RE: AUC inquiry into the ongoing economic, orderly and efficient development of electricity generation in Alberta – Module A

To the Alberta Utilities Commission:

Alberta Wilderness Association (AWA) appreciates the opportunity to provide comments through the AUC inquiry process for Module A. Founded in 1965, AWA strives to help Albertans understand the intrinsic values that wildlife and wilderness provide, and encourage communities to participate in conservation initiatives that will ensure a legacy for future generations. With over 7,000 members and supporters in Alberta and across Canada, AWA is dedicated to conserving Alberta's wilderness, and advocating for conservation strategies that protect Canada's biodiversity.

While AWA supports responsible renewable energy development and encourages transitioning to renewable energy sources, we believe that renewable energy development must proceed in a fashion that respects and protects wildlife, landscapes and health. To achieve this, we suggest a comprehensive analysis and strong framework to direct renewable energy development on suitable lands and maintain industry responsibility for remediation costs. Our detailed comments and suggestions are provided below.

Siting must avoid sensitive and endangered habitats

Renewable energy development must avoid or mitigate harm to sensitive and endangered habitats. These areas are vital for many species and provide a range of ecosystems services that would be lost should these habitats be disturbed or destroyed. For instance, numerous renewable energy projects have been proposed or were erected in southern and central Alberta, in the region collectively known as the prairies. The prairies comprise the grassland and parkland ecozones, and provide habitat for 38 of the 50 species ranked by the Government of Alberta as "At Risk", "Sensitive" or "May Be At Risk."¹ Of these species, 21 are found exclusively in the prairie region, and would become extirpated or extinct without sufficient native prairie habitat.

¹ Government of Alberta. [n.d.] Wild Species Status Search. Retrieved November 16 from: <https://www.alberta.ca/lookup/wild-species-status-search.aspx>.

In addition, native prairie habitat provides many benefits through ecosystem services. Healthy grasslands filter pollutants from water², provide deep and fibrous roots to stabilize and improve soils³, and store significant amounts of carbon⁴. In 2008, Alberta's grasslands were estimated to store three times Canada's annual greenhouse gas emissions⁵, and an estimated 25.6 – 86.3Mt CO₂ equivalents have been released from ecosystem losses as of 2017⁶. Carbon storage in grassland ecosystems is particularly stable as storage is mainly belowground, and would not be released by burning as occurs in forests. Destruction of native prairie for development would result in the loss of the many benefits native prairie provides.

Alberta has already lost an estimated 75 percent of native prairie, and the grassland and parkland, along with the foothills ecoregion, are some of the least protected ecosystems in the province. Currently, only 1.4 percent of the foothills ecosystem is protected, with even less protection in grassland at 1.25 percent, and only 0.9 percent of parkland is protected. Protecting the remaining native prairie and other sensitive ecosystems must be a priority in energy development.

Projects should not occur on migratory pathways

While renewable energy technologies, including wind and solar energy, are far less harmful to wildlife than fossil fuels⁷, there are still impacts to wildlife populations. In particular, wind turbines and solar panels are known to kill birds and bats directly through collisions, causing tens to hundreds of thousands of deaths annually⁸, as well as affecting the migration routes of large mammals, such as pronghorn⁹. Renewable energy can also displace wildlife, damage nesting, resting and staging areas, and impact foraging along migratory routes.

To minimize harm to wildlife, renewable energy developments should avoid known migration paths. In Alberta, precise migration routes are still unknown, and more information is needed to map common paths. To support research into migration corridors, a program with sufficient funding should be established to confirm seasonal pathways and compile wildlife monitoring information. In the absence

² Jankowska-Huflejt, H. (2006). The function of permanent grasslands in water resources protection. *Journal of Water and Land Development*, 55-65; Izydorczyk, K., Michalska-Hejduk, D., Jarosiewicz, P., Bydalek, F., & Frątczak, W. (2018). Extensive grasslands as an effective measure for nitrate and phosphate reduction from highly polluted subsurface flow—Case studies from Central Poland. *Agricultural Water Management*, 203, 240-250.

³ Trükmann, K., Horn, R., & Reintam, E. (2009, June). Impact of roots on soil stabilization in grassland. In *ISTRO 18th Triennial Conference Proceedings T4-022* (pp. 1-7).

⁴ Bai, Y., & Cotrufo, M. F. (2022). Grassland soil carbon sequestration: Current understanding, challenges, and solutions. *Science*, 377(6606), 603-608.

⁵ Bremer, E. (2008). Potential of rangelands to sequester carbon in Alberta. Symbio Ag Consulting. Lethbridge, Alberta.

⁶ Alcock, J., & Solutions, V. (2017). Wetland and Grassland Retention and Restoration as an Effective Carbon Management Strategy in Alberta.

⁷ Sovacool, B. K. (2009). Contextualizing avian mortality: A preliminary appraisal of bird and bat fatalities from wind, fossil-fuel, and nuclear electricity. *Energy Policy*, 37(6), 2241-2248.

⁸ Walston Jr, L.J., Rollins, K.E., LaGory, K.E., Smith, K.P. and Meyers, S.A., 2016. *A preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States*. *Renewable Energy*, 92, pp.405-414; Smallwood, K.S., 2022. *Utility-scale solar impacts to volant wildlife*. *The Journal of Wildlife Management*, 86(4), p.e22216;

Péron, G., Hines, J. E., Nichols, J. D., Kendall, W. L., Peters, K. A., & Mizrahi, D. S. (2013). Estimation of bird and bat mortality at wind-power farms with superpopulation models. *Journal of Applied Ecology*, 902-911.

⁹ Milligan, M. C., Johnston, A. N., Beck, J. L., Taylor, K. L., Hall, E., Knox, L., ... & Kauffman, M. J. (2023). Wind-energy development alters pronghorn migration at multiple scales. *Ecology and Evolution*, 13(1), e9687.

of knowledge for migration paths, developments, especially wind farms, should not be located on or near wetlands, ridgetops, river valleys and other natural features known to concentrate flying species¹⁰.

Brownfields and already disturbed lands are prioritized for development

The Municipal Government Act defines brownfield sites as commercial or industrial properties that are or may be contaminated, vacant, derelict or under-utilized and are suitable for development or redevelopment. These sites are common in or near population centers¹¹, and are ideal for renewable energy development. In their current state, brownfield sites detract from community appeal, can restrain economic development, and reduce the value of other properties in the region. Redevelopment as renewable energy projects could boost property values, provide economic opportunities and reduce pressures on agricultural lands or native habitats. In addition, the proximity to population centers is beneficial for energy generation, as it increases efficiency and reduces the electricity lost during transport¹². Brownfield sites should be prioritized for renewable energy generation, and policy is needed to encourage use of and preference for brownfield sites.

In addition, Alberta has many areas that were previously disturbed for industrial, commercial or accommodation use. As of 2018, the human footprint, defined by Alberta Biodiversity Monitoring Institute (ABMI) as “the visible alteration or conversion of native ecosystems to temporary or permanent residential, recreational, agricultural, or industrial landscapes”, occupied 30.3 percent of Alberta¹³. Energy occupied a total of 12,324 square-kilometers, including mines, well sites, pipelines, seismic lines, transmission lines and other energy-related impacts. These areas generally have lower environmental and biodiversity values, and many already contain infrastructure, such as roads and transmission lines, that would improve the ease of accessing and developing in these areas. Development on disturbed lands should be encouraged over development on native habitat and valuable ecosystems.

Crown Land is managed for the benefit of all Albertans

Crown Land, also known as Public Land in Alberta, should be managed for the benefit of all Albertans, and must not favor industrial and economic growth at the expense of ecosystem protection. Of Provincial Crown Lands, the Government of Alberta has written, “Crown lands are owned by the Crown and managed for the benefit of all Albertans.”¹⁴ The Crown Lands vision promised to “balance economic development, conservation and recreation”¹⁵, yet economic development is often prioritized at the

¹⁰ Wulff, S. J., Butler, M. J., & Ballard, W. B. (2016). Assessment of diurnal wind turbine collision risk for grassland birds on the Southern Great Plains. *Journal of Fish and Wildlife Management*, 7(1), 129-140; Jenkins, A. R., Smallie, J. J., & Diamond, M. (2010). Avian collisions with power lines: a global review of causes and mitigation with a South African perspective. *Bird Conservation International*, 20(3), 263-278.

¹¹ Alberta Urban Municipalities Association. 2014. Brownfield Impact Assessment Report. Accessed at: https://www.abmunis.ca/sites/default/files/brownfield_impact_assessment_report.pdf.

¹² Alberta Electric System Operator. 2016. Loss factors. Retrieved November 16, 2023 from: <https://www.aeso.ca/grid/grid-related-initiatives/loss-factors/>.

¹³ Alberta Biodiversity Monitoring Institute. 2020. The Status of Human Footprint in Alberta. Retrieved November 16, 2023 from: <https://abmi.ca/home/reports/2020/human-footprint/details.html?id=1>.

¹⁴ Government of Alberta. [n.d.] Planning and Decision-making on Private and Public Lands. Retrieved November 16 from: <https://landuse.alberta.ca/Governance/PrivatePublicLands/Pages/default.aspx>.

¹⁵ Government of Alberta. 2020. Alberta’s Crown Land Vision. Accessed at: <https://open.alberta.ca/dataset/4284f06b-a5a4-486a-8986-168751c2e28a/resource/57095da3-2007-42b5-8aa0-683b54e22714/download/aep-albertas-crown-land-vision-our-rich-natural-heritage-2020.pdf>.

expense of conservation. Considering the large landscape footprint of solar and wind energy, the lack of foresight and consideration for sensitive habitat already shown in non-renewable energy development projects, and the poor representation of the grassland, parkland and foothills regions where most projects are proposed, AWA cannot support opening Crown Land to renewable energy development. Before energy development proceeds on Crown Land, clear policies are needed to direct development and protection in underrepresented areas must be expanded.

Industry remains responsible for maintenance and remediation costs

Industry must bear all costs associated with the project, including maintenance and remediation where the project is abandoned. Where industry fails to remediate abandoned projects, the costs are often passed to taxpayers. In the oil and gas sector, provincial and federal governments have already spent over \$1 billion to reclaim wells. In 2018, estimates by the Alberta Energy Regulator indicated the province had \$260 billion in closure liabilities, while less than \$295 million is held in security¹⁶. To avoid repeating the failures of the oil and gas industry, a mandatory cash security should be established, and it should cover 100 percent of reclamation liabilities. The security must be collected early during operations, where motivation to provide security and continue operations is higher. If security is not collected immediately or soon after operations begin, a decline of project worth and associated maintenance and repair costs may motivate operators to abandon energy projects rather than pay for their restoration or remediation.

Following the polluter-pays principle, the industry responsible for any contamination or environmental harm should also bear the costs. As such, where renewable energy projects are situated on brownfields or contaminated sites, responsibility for remediation of the site should remain with the original operator, and not be transferred to the renewable energy operator. The standards that are developed for renewable energy projects should be consistently and fairly applied across all developments, including non-renewable energy sources.

A comprehensive framework for renewable energy needs to be developed

Alberta needs a comprehensive province-wide framework for renewable energy development. Included in this framework should be a thorough analysis of suitable areas for development. Prohibited areas, such as native habitat, migration corridors and high biodiversity regions, must be clearly mapped, and the framework needs to identify ideal areas for development, comprising brownfield sites and previous disturbances. In the absence of a strong suitable areas analysis, Environmental Impact Assessments should be required for large-scale projects containing a proposed contract capacity equal to or greater than 5 megawatts.

The framework also needs to clearly outline the responsibilities of industry, landowners and the province in regulating renewable energy development. Responsibilities should include construction, operation and maintenance of the project, as well as monitoring responsibilities, conditions for closure and remediation. Clear directives are needed to coordinate responsible renewable energy development and encourage a transition to renewable energy without compromising conservation values.

¹⁶ Yewchuk, D., Fluker, S., & Olszynski, M. (2023). A Made-in-Alberta Failure: Unfunded Oil and Gas Closure Liability. The School of Public Policy Publications, 16(1).

Thank you for considering our comments. We look forwards to seeing our suggestions implemented as the province continues the transition to renewable energy sources.

Sincerely,

ALBERTA WILDERNESS ASSOCIATION

A handwritten signature in black ink that reads "Ruiping Luo". The signature is written in a cursive, flowing style.

Ruiping Luo
Conservation Specialist