

## Frequently Asked Questions and Supplemental Information

### What is proposed?

The Hand Hills Hybrid Project (the Project) is proposed as an estimated 180-megawatt (MW) wind power and 120 MW solar power project. The wind project will consist of up to 30 wind turbines, a collector system, substation, access roads and a transmission line interconnection. The solar project will consist of solar panels installed on racking supported by piles, inverter/transformer stations (inverters) that convert direct current (DC) electricity generated by the panels to alternating current (AC) electricity that is carried from the inverters to the electrical substation through a buried collector system. There will be one electrical substation through which the electricity generated by the wind facility and the solar facility will connect to the transmission grid.

### Where is the Project located?

The Project is located approximately 10 km southeast of the village of Delia, Alberta and 23 km southwest of the town of Hanna, Alberta in Starland County and Special Areas No. 2.

### Who is developing the Project?

ATCO Renewables Ltd. will construct, own, and operate the Project. ATCO Renewables Ltd. is under the brand ATCO EnPower and is an affiliate of ATCO Ltd.

### When will Project activities be taking place?

Activity / Milestone	Anticipated Date*
Stakeholder engagement begins	March 2024
Stakeholder Information Session and Open House	May 2, 2024
Stakeholder feedback received to incorporate into Project layouts	July 1, 2024
AUC Applications submitted	Q3/Q4 2024
AUC Decision	Q3 2025
Development Permit Applications submitted	Q4 2025
Construction starts - Wind	Q2 2026
Construction starts - Solar	Q3 2026
Operation starts - Wind	Q4 2027
Operation starts - Solar	Q1 2028

\* Anticipated dates are subject to change

### What factors were considered in Project site design?

ATCO EnPower has developed preliminary site designs for the Project that were included in our Renewable Energy Project Submissions (REPS) as required by Alberta Environment and Protected Areas (AEPA). The Preliminary Site Layout map is provided in this Project information package. The Project components were sited in such a way to comply with land use bylaw setbacks from property lines, residences, and roads. Project components are sited outside of setbacks from oil and gas wells and facilities, pipelines, highways, communication towers, and other infrastructure. The Project components were also sited to avoid seasonal and permanent wetlands and other sensitive wildlife habitat and features.

The site layouts will continue to be developed based on feedback provided by stakeholders, Indigenous communities, regulatory agencies, and other members of the public.

### **What environmental field surveys have been completed?**

There are several different types of environmental surveys that must be completed for wind and solar projects as outlined in the Government of Alberta's Wildlife Directive for Wind Energy Projects in Alberta (Wind Directive) and Alberta's Wildlife Directive for Solar Energy Projects in Alberta (Solar Directive). Alberta Utilities Commission (AUC) Rule 007 Applications for wind or solar power plants require some additional environmental surveys to support the Environmental Evaluation reports that are required for a wind or solar project. Environmental surveys, as required by the Wind and Solar Directives and AUC Rule 007, were conducted for the Project in 2023 by Maskwa Environmental Consulting. Some additional surveys will be completed between March and June this year.

The following environmental surveys have been completed for the Project:

- Raptor nest searches
- Sharp-tailed grouse
- Amphibians
- Migratory birds – spring and fall
- Breeding birds
- Acoustic bat – spring and fall
- Wetlands and landcover

One active ferruginous hawk nest, three active great-horned owl nests, nine active red-tailed hawk nests, and four active sharp-tailed grouse leks were noted during the surveys. Leks are areas where sharp-tailed grouse males put on courtship displays or "dance" to attract females. The Project components have been sited outside of the required setbacks for the nests and leks.

ATCO EnPower submitted renewable energy project submission (REPS) reports to Alberta Environment and Protected Areas Fish and Wildlife Stewardship (AEPA-FWS) branch in December 2023. AEPA-FWS will review ATCO EnPower's REPS reports and provide Renewable Energy Referral Reports back to ATCO EnPower that assesses the risks the Projects poses to wildlife and wildlife habitat. The recommended mitigation measures and other considerations summarized in ATCO's REPS reports and in the AEPA-FWS Referral Reports will be incorporated into the Environmental Protection Plans and Environmental Evaluation reports. All these reports and the Environmental Protection Plans will be submitted as part of ATCO's AUC Rule 007 applications for the Project. A separate AUC Rule 007 application will be submitted for the wind and solar power facilities.

### **What are some benefits to the community from the Project?**

The Project has a generating capacity of +/- 300 MW of energy, producing enough power annually to power 115,000 homes and offset 360,000 tonnes of carbon dioxide<sup>1</sup>.

In addition to carbon offsets, the Project will result in many economic benefits to Starland County, Special Areas No. 2, local businesses, and host landowners. Approximately 300 to 500 temporary jobs are expected to be created during the construction of the Project, with additional long-term jobs expected for the operation and maintenance of the facilities. Additionally, the procurement of materials and local support services such as accommodations, and food services for workers will be required during the construction and operation phases providing additional revenue to local

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<sup>1</sup> Based on a 2026 Electricity Grid Displacement Factor of 0.4303 tCO<sub>2</sub>e/MWh (EDF Associates 2023) and 7,200 MWh annually consumed per household. Typical household use is 7200 kWh/house/year (ATCO 2023)

businesses. During operations, the Project is expected to generate an average of approximately \$7 Million per year during the project life in tax revenue to Starland County, Special Areas No. 2, and host landowners with Project infrastructure on their land will receive lease payments.

### **What happens at the end of the life of the Project?**

At the end of the serviceable life of the Project (usually 30 to 35 years) the Project will be decommissioned following the requirements in the Government of Alberta's [Conservation and Reclamation Directive for Renewable Energy Operations](#) or comparable requirements in place at the time of decommissioning. Above ground wind and solar infrastructure will be dismantled and removed. Concrete foundations will be removed up to a depth of 1.2 metres below grade. Buried infrastructure such as the collector lines will be deenergized and cut or capped off. Buried infrastructure above 1.0 m depth will be removed while buried infrastructure below 1.0 m will remain in place permanently based on landowner requirements. It is not anticipated that buried infrastructure will adversely affect agricultural activities and will have less of an impact left in place rather than if excavated and removed. Gravel will be removed from the Project site and the Project operations footprint will be seeded based on the landowner's preference and requirements at the time.

ATCO includes decommissioning and reclamation security provisions in the lease agreements with host wind and solar facility landowners. ATCO will comply with reclamation and decommissioning requirements as outlined in AUC Rule 007 at the time of ATCO's submission of the AUC Rule 007 application for the Project.

### **Will the Project restrict development by the landowners?**

ATCO does not expect any restrictions on future landowner placed structures so long as wind turbine maintenance access is not impacted.

The solar facility will be enclosed with a chain link fence for safety reasons and future development in the solar facility area will not be allowed by the landowner.

### **How do renewable projects generate revenue?**

Renewable energy projects make money through the generation and sale of both electricity and carbon credits. As a publicly traded company, ATCO would not be investing in these types of renewable energy projects if it could not demonstrate the ability to realize an acceptable return on investment to our Board and shareholders.

### **Are renewable projects paid for by Alberta taxpayers?**

The Project is expected to be funded / financed entirely by ATCO. The federal government offers tax incentives or credits to clean technology projects such as wind and solar, however tax dollars would not be made directly available to fund the project.

### **Are renewable projects increasing power prices in Alberta?**

Renewables (wind and solar) lower power prices when generating. Power prices peak when wind and solar are not available, and gas generators set the market price. Additional gas plants are expected to come online over the next two years, helping ease some of the supply scarcity and will reduce pricing volatility seen over the last two years. Battery storage is also expected to play a larger role in smoothing variability, the Hand Hills Hybrid project will be designed to accommodate addition of batteries in the future. Interconnection costs will be paid by the Project (ATCO) and not the ratepayer.

## What are the potential impacts of the Project?

### Environment

Overall, the preliminary site design will have minimal impacts to sensitive wildlife habitat. Most of the construction and operation areas for the Project are proposed on cultivated land or tame grassland as required by the Wildlife Directives. The wind turbines and substation have been sited to completely avoid seasonal, semi-permanent, and permanent wetlands, native grassland, and coulees. However, it was not possible for all collector lines and temporary workspaces for access roads to avoid wetlands, native grassland, or coulees. To minimize the effects, the underground collector lines will be directionally drilled or bored under the sensitive habitat areas so that there is no direct surface disturbance in these sensitive areas.

During construction, the Project may result in wildlife habitat disturbance from noise and light. ATCO will ensure contractors comply with local noise by-laws and AUC Rule 012 Noise Control, turn off vehicles and equipment when not in use and minimize idling, ensure machinery and equipment is well maintained with noise abatement, emission and pollution controls in place.

There could be wildlife injury and mortality from vehicle or equipment collisions during construction. To mitigate the potential impacts during construction, vegetation clearing and earthworks will be scheduled to avoid sensitive wildlife periods such as the raptor nesting period and migratory bird nesting period. If the sensitive wildlife periods cannot be avoided, nest searches and a pre-construction wildlife sweep will be conducted prior to the start of clearing and earthworks. Any active nests or dens will be marked with an appropriate setback distance and construction will not proceed within the setback area until the young have fledged and the nest or den is no longer considered active. If construction must proceed within the setback area, a qualified wildlife biologist will monitor the setback and work will be stopped immediately if the nesting bird or mammal is showing evidence of being stressed or disturbed by the activity. The active work area will be checked prior to the start of work each day to look for small wildlife (e.g., amphibians, ground-nesting birds, snakes). Any wildlife will be captured and removed from the active construction area by an experienced wildlife biologist.

There could be wildlife injury and mortality during operations when birds or bats come into contact with the turbine blades, solar panels or fencing. ATCO will conduct post-construction wildlife monitoring during the first three years of operations following the Government of Alberta's [Post-Construction Survey Protocols for Wind and Solar Energy Projects](#). If the number of mortalities exceeds acceptable or anticipated levels, operational mitigation will be implemented (in consultation with AEPA-FWS) to reduce the risk of future mortalities.

### Agriculture

The Project components are not sited on prime agricultural land (Class 1 or Class 2 agricultural lands as defined by the Government of Alberta). For the wind facility, agricultural activities in the Project area may be temporarily impacted during construction of the Project. Once construction is completed and the wind facility is operating, landowners can resume agricultural activities. Crops can be planted right up to the wind turbines and livestock grazing can occur within the wind facility area. ATCO will work with the landowners to locate access roads and wind turbines in such a way as to minimize disruption to their agricultural activities while still maintaining required land use bylaw setbacks, setbacks from sensitive wildlife habitat, and setbacks from infrastructure such as roads, pipelines, oil and gas wells and facilities.

For the solar facility, ATCO is looking into livestock grazing on the solar facility site during operations.

## Weeds

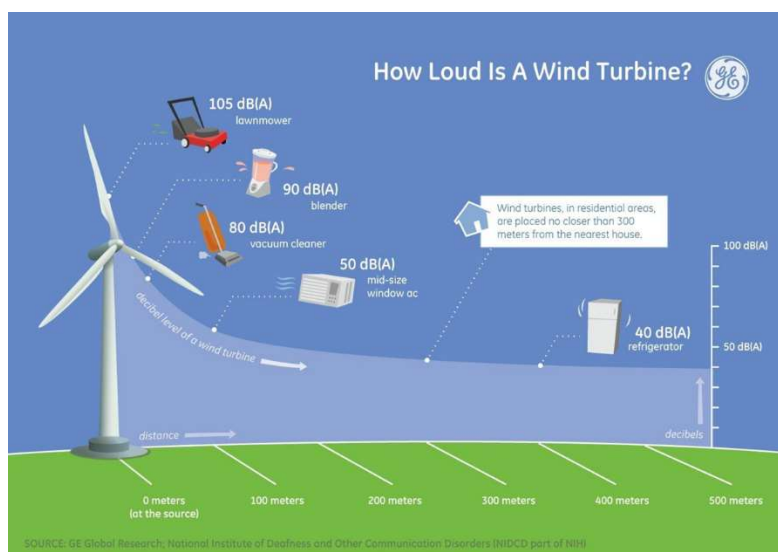
A weed management plan will be developed for the Project and will include measures to prevent the spread of, control or eradicate weeds, invasive species and soil-borne disease such as clubroot.

## Solar Glare

Solar panels reflect sunlight and there is a concern that the reflected light could cause a distraction or result in an after-image that could impede the vision of members of the public at nearby residences or businesses, roads or highways, railways, or pilots' vision at nearby airports or aerodromes. The Project will procure solar panels with an anti-reflective coating which will increase the amount of light absorbed by the panels, increasing the efficiency of the panel, and will reduce the amount of glare from the panels. ATCO will have a solar glare assessment completed for the solar facility, as required by AUC Rule 007. The solar glare assessment report will identify potential solar glare at nearby residences or businesses, roads, railways and aerodromes (receptors). The solar glare assessment report, including a map of the solar glare potential at receptors, will be submitted with ATCO's AUC Rule 007 applications for the Project and will be posted on ATCO's Hand Hills Hybrid project website when available.

## Noise

Wind turbines generate noise from equipment within the wind turbines and substation and from air flow around the spinning turbine blades. Solar facilities can generate noise from the inverters and equipment in the substation. AUC Rule 012 for Noise Control stipulates the permissible sound levels (PSLs) that wind and solar power facilities must not exceed. ATCO will have a Noise Impact Assessment (NIA) completed for the wind and solar components of the Project, as required by AUC Rule 007 and Rule 012. The NIA will assess the predicted sound levels resulting from the Project in combination with existing and proposed noise sources in the Project area. The predicted sound levels for the Project must be below 40 decibels (dBA) at nearby residences to meet the nighttime PSLs. For comparison, 40 dBA is a similar sound level to a refrigerator. The NIA reports will be submitted with ATCO's AUC Rule 007 applications for the Project and will be posted on ATCO's Hand Hills Hybrid project website when available.



## Visual Impact

The Project is not located close to the Canadian Rockies, Foothills, or pristine views as identified by the Government of Alberta. ATCO will provide visual impact assessment requirements in place at the time of submission as part of the AUC Rule 007 applications for the Project.

Wind turbines will have lighting and markings as required by *Transport Canada's Canadian Aviation Regulations Standard 621*.



## Shadow Flicker

The US Department of Energy Wind Exchange defines “shadow flicker” as alternating light and dark periods or a “flickering” shadow that occurs when the sun is low on the horizon and shines through the moving wind turbine blades. There is concern if the flickering effect is occurring in occupied residences or business referred to as “receptors”. ATCO typically sites wind turbines more than 400 m away from occupied residences or business to avoid shadow flicker. ATCO must complete a shadow flicker assessment for the Project and file the report with the AUC Rule 007 application for the Project. The shadow flicker assessment will predict the extent of shadow flicker at receptors within 1.5 kilometres of each wind turbine proposed as part of the Project. ATCO will prepare a map of receptors within 1.5 kilometres of wind turbines and the expected duration of shadow flicker at receptor. The shadow flicker assessment report and map will be posted on ATCO’s Craig Lake Wind project website in fall 2024.



## Shadow Flicker Effects

Source: WKC <https://www.wkcgroup.com/news/wind-turbines-and-shadow-flicker-impacts/>

## Health

Health Canada, in collaboration with Statistics Canada, launched a study in July 2012 to determine if there was a relationship between exposure to wind turbine noise and negative health effects in residents living close to wind turbines. The study results were published in 2014 in Health Canada’s [Wind Turbine Noise and Health Study](#) (the Study).

The Study included 12 wind facilities in Ontario and 6 wind facilities in Prince Edward Island with a random selection of participants from homes within 600 m and 10 km of the wind facilities. The key finding of the Study was that there was no evidence found that supported a link between exposure to wind turbine noise and illnesses or chronic health conditions. There was also no evidence of a decrease in sleep quality or a decrease in overall quality of life because of wind turbine noise. There was an association found between participants reporting to be very or extremely annoyed from increasing levels of wind turbine noise and this was correlated to some long-term health effects such as perceived stress, migraines, tinnitus, dizziness, and high blood pressure. The Study suggested that the health effects correlated to annoyance from wind turbine noise was similar to health effects related to road traffic noise annoyance.

## Radiocommunications and Radar

Wind turbines could cause potential interference for radar or radiocommunication systems if turbines are in their line of sight. ATCO designed the preliminary site layout to minimize inference with radar or radiocommunication systems by siting specific wind turbines outside of the predicted line-of-sight and more than 4,000 m away from the closest aerodromes near Castor and Coronation, Alberta. ATCO will consult with radar or radiocommunication infrastructure owners in the Project area and follow the Radio Advisory Board of Canada and Canadian Wind Energy Association’s Technical Information and Coordination Process Between Wind Turbines and Radiocommunication and Radar Systems and Environment and Climate Change Canada’s [Guidelines for Wind Turbine and Weather Radar Siting](#).

## Public Safety

Safety is the first consideration in everything that ATCO does. We aspire to achieve the highest safety standards across all our products, services, and operating assets. The Project is developing and will implement measures to address and mitigate risks to the surrounding area from fire, project-related traffic, and public nuisance concerns from dust and noise. These measures are established by working closely and listening to input from stakeholders such as local emergency response teams, Starland County, and Special Areas No.2. This stakeholder engagement continues throughout the Project life. The feedback received will be used to develop a site-specific emergency response plan ("ERP"). Following that, ATCO will prioritize safety considerations to lead all key decisions when selecting industry leading equipment, to adhere to the highest applicable safety codes, standards, and specifications. A copy of the ERPs will be submitted with the AUC applications.

## Who can I contact to get more information about the Project?

Toll free at: 1-866-344-0178

Email: [ATCORenewablesLTD@atco.com](mailto:ATCORenewablesLTD@atco.com)

### Landowner enquiries:

Tanis Jensen, Surface Land Lead  
Phone: 403-371-8635

### General Project Information, questions, concerns

James Guthrie, Manager, Regulatory & Environment  
Phone: 403-804-4062

For more information about ATCO EnPower or the ATCO Hand Hills Hybrid Project, please visit:

<https://www.atco.com>

<https://www.atco.com/en-ca/business/atco-enpower.html>

<https://www.atco.com/handhills-hybrid>