

Halkirk 2 Wind Project Update

Hello,

We would like to provide an update about the revised Halkirk 2 Wind project. Since we shared the project information package and preliminary design layout in November 2021, we've made further refinements to accommodate feedback from community members related to a local aerodrome, surface water drainage, shadow flicker, access roads, and other considerations.

Enclosed in this package, you will find:

- Municipal Constraints Map
- Noise/Shadow Flicker Map
- Visual Simulations
- Final Design Layout Map
- Alberta Utilities Commission (AUC) Public Involvement Brochure

We continue to engage with stakeholders and listen to feedback about the project. Please contact us with any questions and/or comments at canadadevelopment@capitalpower.com or 1-855-703-5005.

Sincerely,



Wilhelm (Wil) Danek
Senior Business Development Manager

Project Quick Facts

- **Located on privately-owned land in Paintearth County in TWP 39 and 40 and RGE 14 and 15.**
- **151 MW generation capacity**
- **35 wind turbines** (53% reduction from 74 wind turbines approved in 2018)
- **64-acre permanent project footprint** (43% reduction from 113 acres in the approved permanent project footprint)



Halkirk 2 Wind Project
Specific Information
Package #2

Site Layout

Thank you to all those who spoke with us, shared information about the lands and provided feedback on how to make this project work best in the community. Enclosed is the final design layout, which includes the location of the **35 wind turbines** (maximum), collector lines, access roads, crane paths, a substation, Operations and Maintenance Building (tentative) and a meteorological tower. We've made numerous changes since we shared the preliminary design layout in November 2021, including tweaking or moving 28 wind turbines and eliminating one.

Changes made from the November 2021 project design:

- T-4 moved ~1,000m southwest from NW-03-40-15-W4M to SE-03-40-15-W4M
- T-9 moved ~5,300m northwest from SE-35-39-15-W4M to SW-09-04-15-W4M
- T-10 moved ~1,040m northwest from NE-26-39-15-W4M to SW-35-39-15-W4M
- T-11 moved ~800m southeast from SE-11-40-15-W4M to NE-02-40-15-W4M
- T-21 moved ~700m southeast from NW-04-40-14-W4M to NE-04-40-14-W4M
- T-26 moved ~5,040m northeast from NE-28-39-14-W4M to NW-11-40-14-W4M
- T-27 moved ~1,050m north from NW-27-39-14-W4M to SW-34-39-14-W4M
- T-29 moved ~1,900m northwest from SW-36-39-14-W4M to NW-35-39-14-W4M
- T-32 moved ~180m southwest from NW-25-39-14-W4M to SW-26-39-14-W4M
- Construction laydown area moved from SW-03-39-15-W4M to NE-34-39-15-W4M
- Operations & Maintenance building tentatively sited at NW-01-40-15-W4M

Construction Laydown Area



The project's temporary construction laydown area is proposed to be located at TWP RD 400 and RR 152. Like the pictured laydown area for our Whitla Wind facility, the laydown will have multiple access points to safely accommodate traffic.

The temporary construction laydown area was moved from the north side of TWP RD 400 at SW-3-39-15-W4M to the south side of TWP RD 400 at NE-34-39-15-W4M. The location was changed to avoid ATCO's Central East Transfer Out (CETO) transmission project. It's also a safer location to accommodate traffic travelling east on TWP RD 400 to turn right into the laydown yard. It's expected that construction traffic will come from Secondary Highway 855 and east on TWP RD 400. We will continue to work with our contractors and the County to develop a traffic management plan that is safe and effective.

The laydown yard will have multiple access points from TWP RD 400 and RR 152 to help mitigate traffic impacts on TWP RD 400, and we will continue to develop access points and turning radius improvements to further mitigate potential traffic impacts.

The permitted area for the temporary construction laydown area will be approximately 30 acres. The laydown area will accommodate construction office trailers, an onsite concrete batch plant to produce concrete for the wind turbine foundations, parking, as well as an equipment and tools storage area. Wind turbine components will not be staged at the laydown area - they will be transported from the rail siding (location to be determined) directly to the wind turbine pads where they will be staged for assembly.

Water used for concrete production needs to be treated and will be trucked from a location outside the project area to the onsite concrete batch plant.

Construction of the laydown area will be one of the first activities completed when construction begins in Q3 2023 (pending regulatory approvals).

Operations & Maintenance Building

An Operations & Maintenance (O&M) building is required for our O&M team and will consist of a service bay, workshop, supervisory control and data acquisition room, parts room, conference room, and office spaces. We're working to determine if a new O&M building is required for Halkirk 2 or if we can modify our existing building located in the Village of Halkirk. If a new building is required, it would be located on RR 151 at NW-1-40-15-W4M and adjacent to the Goldeye Substation.

Meteorological Tower

Capital Power will install a single free-standing 100 to 120 m high meteorological (met) tower at NW-4-40-15-W4M for the collection of weather data including wind speed, direction, barometric pressure and ambient temperature. The met tower is a technical requirement of the Alberta Electric System Operator (AESO) Independent System Operator (ISO) Rules.

Road Use and Traffic Management Plan



Capital Power has extensive experience in construction of wind facilities in agricultural areas and we work to minimize impacts to local traffic and farming operations. Pending successful permitting of our final design layout, we will work with the County of Paintearth, our wind turbine manufacturer and our engineering procurement and construction contractor to develop our road use and traffic management plan.

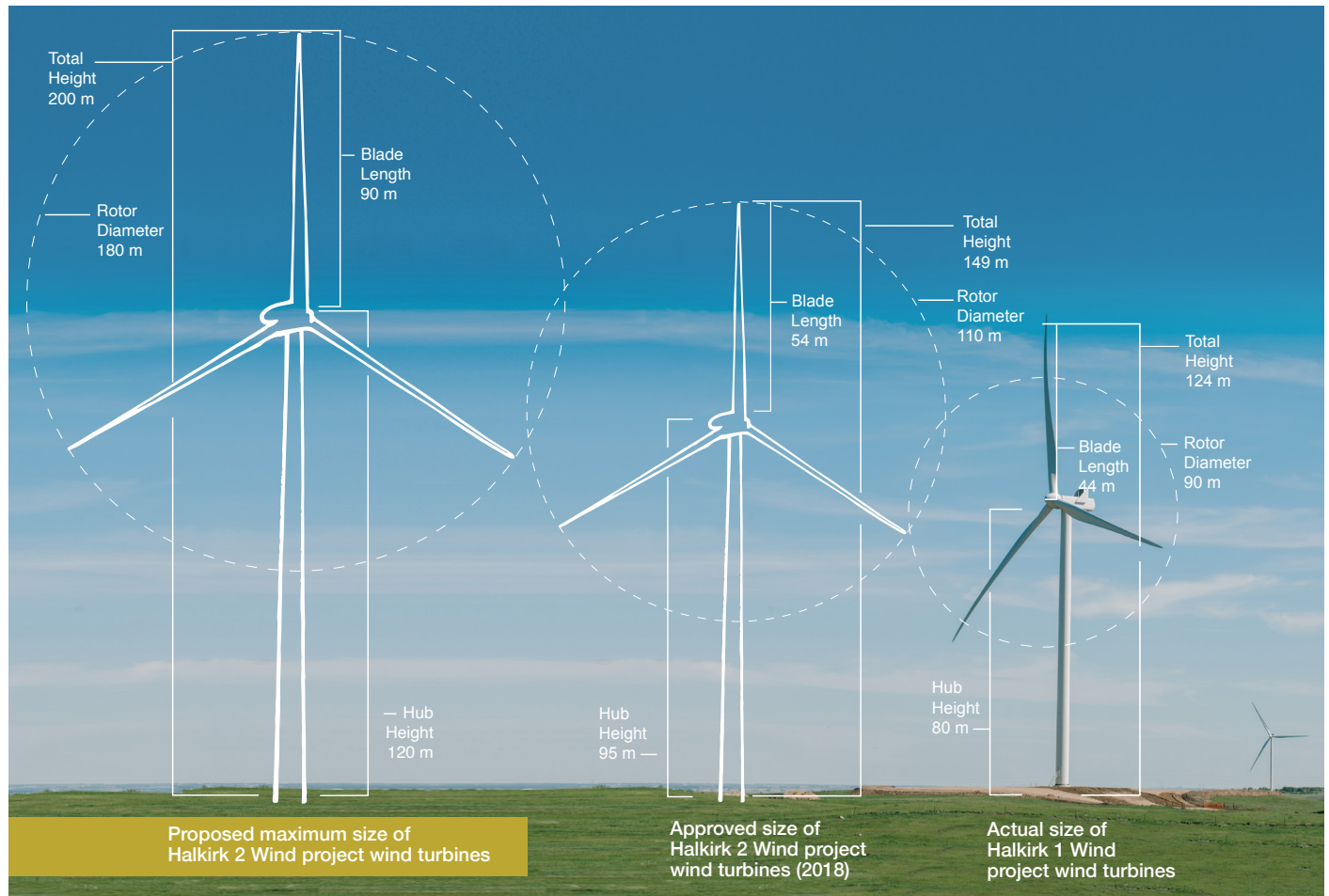
Our preliminary transportation plan assumes turbine deliveries will be arriving on Secondary Highway 855 and travel east on TWP RD 400. This is subject to change based on discussions with turbine vendors but is the preferred route because TWP RD 400 is built to withstand heavy traffic. Once vendors have been engaged, Capital Power will enter into a road use agreement with the County in which we will be responsible for upgrading and repairing any damage to local roads during construction and any potential reclamation work once construction is complete.

Capital Power will not use any public roads as staging areas and we do not have any construction activities that will require extended road closures. There will likely be brief closures of a few minutes to accommodate oversize loads. In some instances where collector lines are installed along public road Right-of-Ways, project equipment will be on the road for that work. Any road crossings will be bored under the road to avoid road closures. Traffic control will be present to ensure all temporary closures are managed safely and we will be enforcing a strict speed limit with our contractors. All major deliveries will be scheduled so as not to impede school bus schedules.

Capital Power will communicate daily gravel, concrete and wind turbine component delivery routes and projected schedules via email in addition to the County's website, bulletins and Voyent Alert! app. Capital Power is also committed to providing regular newsletter updates to residents throughout construction.

Once complete, we will share more details regarding our road use and traffic management plan with the community prior to construction.

Wind Turbine Technology



Above rendering depicts the maximum size wind turbine technology being considered for Halkirk 2 in comparison to the size of the Vestas V110 wind turbines approved for the project in 2018 and the Vestas V90 wind turbines in operation at our existing Halkirk 1 Wind energy facility, located south of the proposed project area.

The Halkirk 2 Wind project was fully permitted in 2018 based on available technology at that time. Since then, the project has been redesigned to incorporate the most advanced turbine technology, which requires an AUC permit amendment.

The number of wind turbine generators has been reduced by 53% from the approved design. We anticipate a maximum total of **35** 4.3 to 6 MW wind turbines for the 151 MW project.

As shared in the project information package in November 2021, the turbine technology we're considering will have a maximum of 120 m hub height, 90 m blade length and 180 m rotor swept diameter with a total tip height not in exceedance of 200 m.

We have not yet determined which manufacturer, make or model of wind turbine that will be used for the project. Manufacturers are constantly refining their design and the technology advances quickly as does supply chain availability. Based on the proposed design, supply availability and cost, there are a several possible turbine

options. To address the rapid change in technology, regulatory requirements (e.g., *AUC Rule 007*) have been updated to allow project proponents flexibility around technology and vendor selection.

As part of the technical modelling for this project, we've factored in the characteristics of the proposed wind turbines to meet the broadest end of the spectrum. Upon final selection of the wind turbine for the project, those characteristics in our modelling (i.e., blade length, noise, etc.) must be in line with what we submit in our application. **To maintain flexibility, we plan to apply for a permit that reflects the maximum size and quantity of wind turbines, so the final turbine selection could be smaller in size and have a smaller overall footprint than what is permitted.** The technology selected must meet or be below the permissible ranges for noise and shadow flicker and all other impacts.

As per *AUC Rule 007*, we must submit a final project update at least 90 days prior to the start of construction that includes our selected wind turbine technology.

Proposed Project Schedule

Based on current timelines and pending the receipt of all regulatory and permitting approvals, construction of Halkirk 2 Wind may begin in Q3 2023 with commercial operations (COD) targeted in Q4 2024.

Activity	Timing ¹
Stakeholder engagement and consultation	Throughout development
Alberta Environment & Parks Renewable Energy Project Submission Application	Q2 2022
Alberta Utilities Commission Amendment Application	Late Q4 2022
Alberta Electric System Operator Interconnect	Throughout Development
Anticipated AUC Amendment Permit Approval	Q2/Q3 2023
Paintearth County Development Permits	Q2/Q3 2023
Target for construction to begin	Q3 2023
Access Road Construction	Q3 2023
Turbine Foundation Construction	Q2 2024
Collector Line Installation	Q2-Q3 2024
Goldeye Substation Construction	Q2-Q3 2024
Turbine Delivery	Q3-Q4 2024
Turbine Assembly	Q3-Q4 2024
Commissioning	Q3-Q4 2024
Commercial Operations (COD)	Q4 2024

¹ Anticipated schedule, pending regulatory approval.

Join us Halkirk 2 Wind Project Information Sharing Sessions

When

Wednesday, June 8 from 4 - 7 pm
Thursday, June 9 from 9 am - noon

Where

Halkirk Community Hall

Join us to learn more and ask questions directly to the project team.

To learn more about the AUC application and approval process, please consult the enclosed public involvement brochure, which is also available at www.auc.ab.ca

Noise

Wind turbines produce sound from air flow and mechanical sources:

- *Air flow: sound generated as air passes over and between the blades and when the blades pass by the tower.*
- *Mechanical: sound generated by equipment such as the gearbox and generator, which are located inside the nacelle.*

Golder has completed noise modelling for the project in accordance with *AUC Rule 012 – Noise Control* in preparation for the Noise Impact Assessment (NIA). Noise modelling is based on the Vestas V150 4.3 MW wind turbine. Noise modelling accounts for the hub height, noise emissions and quantity/location of wind

turbines. Any changes in turbine technology will require an updated NIA and compliance with *AUC Rule 012*.

AUC Rule 012 requires that potential noise impacts be assessed at receptors corresponding to dwellings located within 1.5 km of the Project. The NIA evaluates project compliance by comparing cumulative sound levels to permissible sound levels (PSLs) applicable at receptors.

The revised project design (layout and turbine model) remains compliant with AUC Rule 012 at all receptors. Please refer to the enclosed noise/shadow flicker map for details.

Common Noise

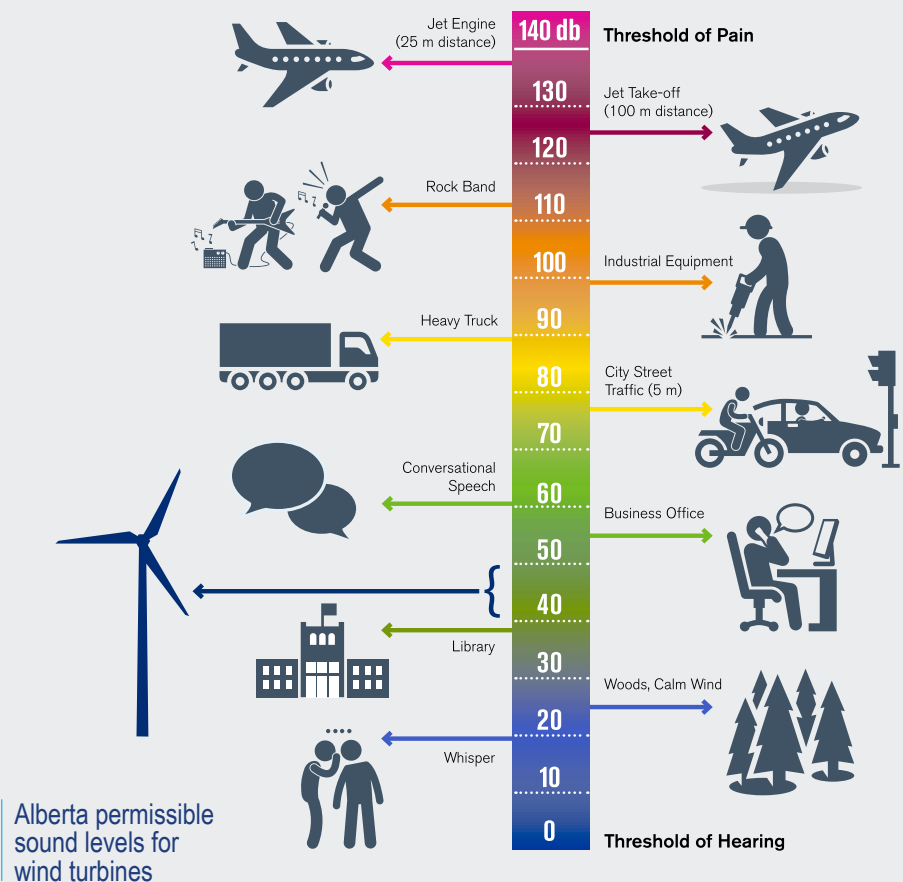
AUC Rule 012 permissible sound levels (PSLs) at occupied dwellings in the project area are:

 **40 dBA Leq**
AT NIGHTTIME

 **50 dBA Leq**
AT DAYTIME

dBA = A-weighted decibel level
Leq = Equivalent continuous sound level

For comparison, 40 dBA is the sound level one would expect to measure in a quiet office or living room.



Shadow Flicker

Shadow flicker only occurs when turbines are operating under specific sun/sky conditions (e.g., clear sky, low angle sunlight – sunrise, sunset). Shadow flicker results from brief reductions in light caused by the rotating blades of the turbine casting shadows on receptors, on the ground, and on stationary objects such as a window at a residence.

Golder has conducted a shadow flicker assessment for the project, which predicts and evaluates shadow flicker at 68 receptors corresponding to dwellings within 1.5 km of the project (the same receptors considered in the NIA). Shadow flicker modelling makes use of project design data (i.e., location, hub height, and rotor diameter for project wind turbines), on-site wind data (i.e., historical wind roses for the project area), publicly available terrain data, and publicly available sunshine statistics.

The assessment predicts potential for shadow flicker at specific receptors. See the noise/shadow flicker map for details. The AUC does not set shadow flicker thresholds or limits.



Supporting Your Community

We're committed to being a good neighbour and supporting the community. Halkirk 2 Wind will provide an estimated \$56 million in tax revenue to the County of Paintearth over an approximate 30-year life of the project, create 5-7 permanent positions for operations and maintenance and support local community projects and initiatives. There will also be contract opportunities for local businesses in snow clearing, road maintenance, fencing, reclamation, etc.

During the 12–14-month construction period, the project will support 200+ construction jobs and spinoff benefits for lodging, restaurants, etc. Capital Power will also be seeking to involve local contractors and suppliers.

Wind Energy and Health



Alberta has been home to commercial wind power development since 1993, longer than any other province in Canada. In Alberta there's more than 2,200 MW of installed wind generation capacity and the industry is poised for continued growth.

Despite the long-standing and successful history of wind power in the world, including Alberta, a small number of people have raised concerns that wind turbines could negatively affect human health.

Health effects associated with wind turbines is a subject that scientists, medical experts, and government agencies around the world have looked at carefully. Of the studies and research conducted around the world, one of the most comprehensive was done by Health Canada. The study found no evidence to support a link between exposure to wind turbines and any of the self-reported illnesses.

Reference: Health Canada, “Wind Turbine Noise & Health Study: Summary of Results.” More information from the Health Canada study is available at www.canada.ca.

The project will adhere to all applicable rules and regulations for setbacks including Paintearth County's Land Use Bylaw and AUC Rule 012: Noise Control, which will mitigate any adverse impacts on the health of local residents.

Collector Substation

As part of the Halkirk 2 Wind project, Capital Power is also applying to amend the existing approval (Permit and Licence 22563-D03-2018) for the Goldeye 620S collector substation.



We are proposing to move the location of the substation to reduce the overall impact of the generator and interconnection facilities on the community. As shown on the enclosed map, the substation is proposed to be located in the southwest corner of SW 12-40-15-W4, approximately 1,800 m north and 350 m east of the previous approved location at NE 35-39-15-W4M. The substation site will be approximately 75m by 80m or 1.5 acres with an enclosed chain-link fence securing the area. The planned in-service date of the substation is Q3 2024.

Capital Power will be submitting a separate amendment application to the AUC to amend the location of the project's substation in conjunction with its facility amendment application later this year.

Purpose of a Collector Substation

Electricity generated by each of the wind turbines is channeled via an underground network of medium-voltage (34.5 kV) electrical cables called a collection system to the Goldeye substation where the electricity will be converted to 240 kV and connected to Alberta's Interconnected Electric System ("AIES").

Equipment within a Collector Substation

The substation will mainly consist of electrical equipment, including:

- One 240/34.5 kV, 167 megavolt-ampere (MVA) main power transformer
- One 240 kV outdoor circuit breaker
- Up to 6 34.5 kV outdoor collector circuit breakers
- Metering, disconnect switches, capacitor bank and other associated electrical equipment
- A small protection and control building located inside the substation; and
- Communication system back to Tincobra 972S substation

Contact us

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be held in writing, in person or virtually through web-conference software.

AUC eFiling System

The eFiling System is the online tool that the AUC uses to manage applications and submissions in its proceeding-based review. The eFiling System gives access to all public documents associated with an application. The system is also used to submit your concerns and provide input to the AUC and can be used to monitor related proceeding filings. Those who do not have access to the internet can send submissions, evidence and other material by mail and the AUC will upload the submission on their behalf.

Step 5: Consultation and negotiation (if applicable)



The AUC supports efforts to reach a mutually agreeable outcome among the applicant and affected parties. The AUC encourages the applicant and those who have filed a statement of intent to participate to continue to attempt to resolve any outstanding issues. If all concerns can be satisfactorily resolved this may eliminate the need for a formal hearing. However, if there continues to be unresolved issues, those matters will typically be addressed in an AUC hearing.

Step 6: The public hearing process



The AUC will issue a notice of hearing if a person with standing continues to have legitimate unresolved concerns with the application. The notice of hearing will provide a hearing date and location, or specify if the hearing will be held in writing or virtually. When the AUC holds a public hearing, registered parties are given the opportunity to express their views directly to a panel of Commission members. Any member of the public can listen to an in-person or virtual oral hearing. An oral public hearing operates similar to a court proceeding.

Participants in a hearing can either represent themselves or be represented by a lawyer. In addition, participants may hire experts to assist in preparing and presenting evidence to support their position.

Cost assistance



A person determined by the AUC to have standing or a local intervener can apply for reimbursement of reasonable costs. Those who hire a lawyer or technical experts must be aware that while reimbursement for the costs of legal and technical assistance is available under AUC Rule 009: *Rules on Local Intervener Costs*, recovery of costs is subject to the AUC’s assessment of the value of the contribution provided by the lawyer and technical experts in assisting the AUC to understand the specifics of the case. It is also subject to the AUC’s published scale of costs.

People with similar interests and positions are expected and encouraged to work together to ensure that expenditures for legal or technical assistance are minimized and costs are not duplicated.

Step 7: The decision



The AUC’s goal is to issue its written decision no more than 90 days after the close of record. The AUC can approve, or deny an application and can also make its approval conditional upon terms or conditions. AUC decisions are publicly available through the AUC website at www.auc.ab.ca.

Step 8: Opportunity to appeal



An applicant or participant in a proceeding may formally ask the Court of Appeal of Alberta for permission to appeal an AUC decision. An application for permission to appeal must be filed within 30 days from the date the decision is issued.

An applicant or participant in a proceeding can also ask the AUC to review its decision. An application to review a decision must be filed within 60 days from the date the decision is issued and satisfy the limited grounds described in AUC Rule 016: *Review of Commission Decisions*.

Step 9: Construction, operation and compliance



An applicant that receives approval to build and operate a facility from the AUC is expected to follow through on any commitments it has made to parties and must adhere to any conditions that were set out in that approval. If concerns about compliance with approval conditions and post-construction operations cannot be resolved with the applicant, they can be brought to the AUC’s attention for consideration. The AUC has significant compliance and enforcement powers for all approved applications. Additional information is available on the AUC website.

The Alberta Utilities Commission is an independent, quasi-judicial agency of the government of Alberta that ensures the delivery of Alberta’s utility services take place in a manner that is fair, responsible and in the public interest.

We are committed to ensuring that Albertans whose rights may be directly and adversely affected by a utility development project are informed of the application and have the opportunity to have their concerns heard, understood and considered.



Contact us

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

Eau Claire Tower
1400, 600 Third Avenue S.W.
Calgary, Alberta T2P 0G5



Participating in the AUC's independent review process to consider facility applications

www.auc.ab.ca

The AUC regulatory review process to consider facility applications for utility projects



The AUC uses an established process to review social, economic and environmental impacts of facility projects to decide if approval of a project is in the public interest.

The AUC considers applications requesting approval of the need for transmission development and facilities applications seeking approval to construct, operate, alter and decommission electric and natural gas facilities. Applications, as specified in AUC Rule 007, are required for:

- The need for transmission upgrades.
- The route and location of transmission facilities.
- The siting of power plants.
- The construction of a battery storage system.
- The designation of an industrial system.
- The need for and siting of natural gas utility pipelines.

Sometimes the Alberta Electric System Operator's needs identification document application is considered together with a facility application in a single proceeding; sometimes separate proceedings are held to consider each application.

Application review process



Step 1: Public consultation prior to applying to the AUC

Step 2: Application filed to the AUC

Step 3: Public notice

Step 4: Public submissions to the AUC

Step 5: Consultation and negotiation

Step 6: The public hearing process

Step 7: The decision

Step 8: Opportunity to appeal

Step 9: Construction, operation and compliance

Application review process

Step 1: Public consultation prior to applying to the AUC



An applicant seeking approval of a proposed utility development project is required to engage in a participant involvement program prior to filing an application with the AUC. The public involvement program involves consultation with persons whose rights may be directly and adversely affected by the proposed project so that concerns may be raised, addressed and, if possible, resolved.

The application guidelines and requirements for facility applications can be found in AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*.

Potentially affected parties are strongly encouraged to participate in the public consultation, also called a participant involvement program. Early, active and ongoing discussions with an applicant may lead to greater influence on project planning and what is submitted to the AUC for approval.

Step 2: Application filed to the AUC



When the applicant has concluded its consultation with potentially affected parties and the participant involvement requirements have been completed, the applicant files its application through the AUC online public filing system, called the eFiling System.


AUC staff members review each application submitted to verify that all of the application requirements in Rule 007 have been met before an application is deemed complete. If all of the required information is not provided, the application may be closed or missing information will be requested of the applicant. Rule 007 specifies, among other requirements, that applicants must submit the results of a public involvement program in its application that includes information about how applicants consulted and notified stakeholders and Indigenous groups and identifies any unresolved objections and concerns about the project.

Step 3: Public notice



When the AUC receives an application it is assigned a proceeding number and the AUC generally mails a notice of application directly to those who live, operate a business or occupy land in the project area who may be directly and adversely affected if the AUC approves the application. The notice initiates the opportunity for formal intervention in the proceeding to consider an application or applications. The notice of application will also set out important dates and information about where to find the application and other items being considered. The five-digit eFiling System proceeding number in the notice is the most efficient way to find information about a proposed project through the AUC website.

Step 4: Public submissions to the AUC



Prior to the submission deadline provided in the notice, formal submissions of outstanding concerns and unresolved objections about a project may be submitted to the AUC. To submit a concern, participants will need to register to participate in the proceeding, which involves providing a brief written statement called a statement of intent to participate. Submissions are filed electronically through the eFiling System. The information filed becomes part of the public record and is an important part of the process to ensure that outstanding concerns are heard, understood and considered.

The AUC uses the information gathered through statement of intent to participate submissions to decide whether to hold a hearing on the application(s). The AUC must hold a hearing if a concerned person can demonstrate that they have rights that may be directly or adversely affected by the AUC's decision on the application. Such a person is said to have standing before the AUC. If the AUC decides to hold a hearing, the AUC will provide further opportunities for participants with standing to ask the applicant questions on the public record and present their position on the application either in writing or in person. Hearings may