

THE AMISK HYDROELECTRIC PROJECT

A cost-effective source of renewable energy



About

- » The Amisk Hydroelectric Project (Amisk) is a 370 MW run-of-river hydroelectric project proposed to be located on the Peace River approximately 15 km upstream of the Highway 2 Bridge at Dunvegan, Alberta.
- » The project would generate approximately 2,588 GWh per year of electricity, which is enough to supply roughly 350,000 Alberta residences.

Putting the Environment First

- » The proposed design incorporates fish ladders to allow migratory fish passage and various options are being evaluated for boat transportation around the dam structure including boat lock, portage system, and boat launches upstream and downstream of the dam.
- » To generate the equivalent amount of electricity as the Amisk project with utility scale solar generation would require over 4,000 hectares of land.



Renewable Energy

- » The project would also displace approximately 1.2 million tonnes per year of CO₂, which is equivalent to taking roughly 230,000 Alberta vehicles off the road.
- » Amisk represents a cost-effective source of renewable electricity to replace a portion of the roughly 4,000 MW of coal-fired generation to be retired over the next 15 years in Alberta
- » Importantly, it is also a source of baseload electricity which can be relied on at all times of the day similarly to coal-fired generation. The Amisk project would increase hydroelectric generation in Alberta by roughly 76%.


Dependable Renewable Electricity in the Years Ahead

- » Amisk will allow for an expansion in the type and quality of the recreational opportunities in the area and will create significant revenue and jobs for the region and the province in the years to come.
- » The Amisk project would increase hydroelectric generation in Alberta by roughly 76%, supplying Alberta with dependable volumes of renewable electricity as coal-fired generation in the province is eliminated by 2030



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Where would the electricity generated by the Project go?

Electricity generated by the Project will be supplied to the Alberta electricity grid via an approximately 25 km transmission connection. The Alberta electricity grid supplies industrial, commercial and residential consumers with electricity. There is currently a generation shortfall in the northwest region of Alberta with a peak demand of approximately 1,111 MW and generation capacity of approximately 943 MW according to the Alberta Electric System Operator (AESO). The AESO forecasts that peak demand in the region will increase by approximately 332 MW to 1,443 by 2024.

What happens to recreational areas upstream of the dam (i.e. Pratt's Landing, Carter's Camp and Many Islands)?

Early indications are the Pratt's Landing and Carter's Camp campgrounds will be impacted by the headpond and will need to be relocated or reconfigured. Possible relocation and reconfiguration options are being evaluated. At this time the Project is not expected to affect the recreation value of the Many Islands area. AHP commits to creating equivalent or greater recreational opportunities to those lost as a result of the Project.

How will the Project affect the ice regime of the Peace River, including the Shaftesbury Crossing?

Potential changes to the ice regime are currently being evaluated. It is expected that the total combined duration of ferry and ice bridge operations at Shaftesbury Crossing will be reduced. AHP commits to providing compensation to mitigate negative impacts to users of the Shaftesbury Crossing to the extent they are expected to occur as a result of changes to the ice regime precipitated by the Project.

How will the Dunvegan West Wildland Provincial Park be affected?

Initial calculations indicate that approximately 300 hectares of the Park will need to be re-designated due to Project needs and the forecasted extent of the impoundment.

AHP agrees to work with the Province towards compensation for lost park land.

What roads and upgrade to roads are needed to construct and access the dam site?

Permanent road access from both sides of the river escarpment to the dam site will be required for dam construction, operations, and maintenance. Potential alignments of dam site access roads are being evaluated to determine the best option given the river escarpment characteristics. Existing county road interconnections and upgrade requirements for access from major highways to the river will be evaluated and discussed with municipal and provincial transportation authorities.

Will vehicle transportation be possible across the dam?

The dam is not designed to allow for vehicle transportation across the river.

How will boat passage occur?

AHP is currently evaluating boat passage options. Options being considered include a boat lock, a portage system and a combination of boat launches.

Will private land be lost and, if so, what compensation can be expected?

Some private land will be impacted by the Project. AHP commits to compensating landowners for this impact based on the specific extent of the impact to each individual owner.

What will be the impact on water temperature and subsequently on fish?

The Williston Reservoir behind the W.A.C. Bennett Dam in British Columbia has caused water temperatures in the Peace River to be warmer in the winter and colder in the summer. The change in temperatures and other factors like sediment load and flow regime have allowed cold water fish species to extend their distributions downstream and cool water fish species to be "pushed" downstream. Site C Dam will extend this effect farther downstream. The Amisk Project is not expected to substantively change the Peace River water temperature because the headpond is not large enough. As such, the Amisk Project is not expected to affect the Peace River fish community due to the influence on water temperature.

Will the Project create erosion and stability issues along the banks of the river?

The geologic conditions found upstream throughout the headpond area have been found to be favourable with respect to stability, as attributes that have led to large-scale erosion upstream and downstream are not found along the headpond area. Further studies are required to determine what impact the impoundment of the headpond may have on normal slope processes including weathering, erosion, and slumping, however, those processes are not expected to impact dam stability. At the dam site, any slopes found to be unstable will be stabilized by common geotechnical practices e.g. use of wire mesh, shotcrete, retaining walls, consolidation grouting, etc. The geological mapping and geotechnical investigation will help to determine the best method to stabilize the banks and establish the design characteristics of the abutments. Access roads to the headworks will be designed and constructed to manage slope stability and erosion.

Will the Project change the flow of the river?

The Project will have minimal effect on the flow of the river. A majority of the flow is regulated by BC Hydro's operation of the W.A.C. Bennett Dam. Unregulated flows from tributaries below the proposed Site C project to the proposed Project headworks will not be regulated by the Project.

When would the Project be constructed?

It is anticipated that after the regulatory process is completed the earliest the dam could be completed would be 2027 after a 5-year construction period.

With fishways and fish friendly turbines what will be the impact of the fish moving upstream and downstream of the dam?

Potential fish passage options are currently being evaluated. Preliminary analysis indicates that upstream fish passage using fishways and downstream fish passage using best available fish friendly turbines would provide potentially viable mitigation for direct effects on fish populations.

What happens to wildlife and habitat along upstream areas that will be inundated by the headpond?

AHP understands that there will be an impact on wildlife and habitat. Wildlife and habitat studies are currently being carried out to understand the extent of the impact