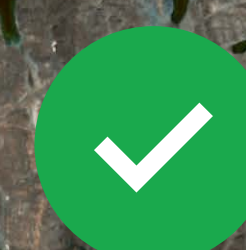




Green Light



01

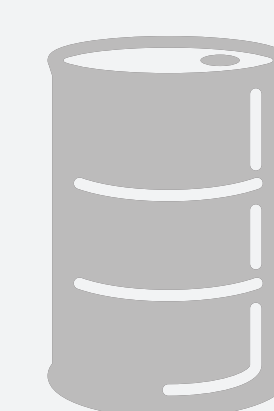
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McKeand River South Hydro

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- [illegible]

Summary

- ✔ Results in the lowest cost of electricity for all options (including diesel)
- ✔ High degree of scalability (we can increase the output as Iqaluit grows)
- ✔ Low to medium technical risks
- ✔ Lowest emissions of all options
- ✔ Few observations of land use compared to other options (lowest reported)
- ✔ Pumped storage can be added in future as Iqaluit grows
- ⚠ Distance to Iqaluit (50km)
- ⚠ Some water storage required
- ⚠ Not previously studied
- ⚠ Requires careful study of caribou migration



100%

Reduction in Diesel
Consumption
for Electricity Generation

σΠΔΛΓΛΓ^α Ⓜ^c • The Bottom Line

McKeand River South Hydro is our top ranked option and offers the best chance at lowering the cost of electricity in Iqaluit. It is in an area that, from land use study, is least-used for hunting and fishing. This option is scalable, and can expand and grow as Iqaluit grows. It is the top-recommended site!

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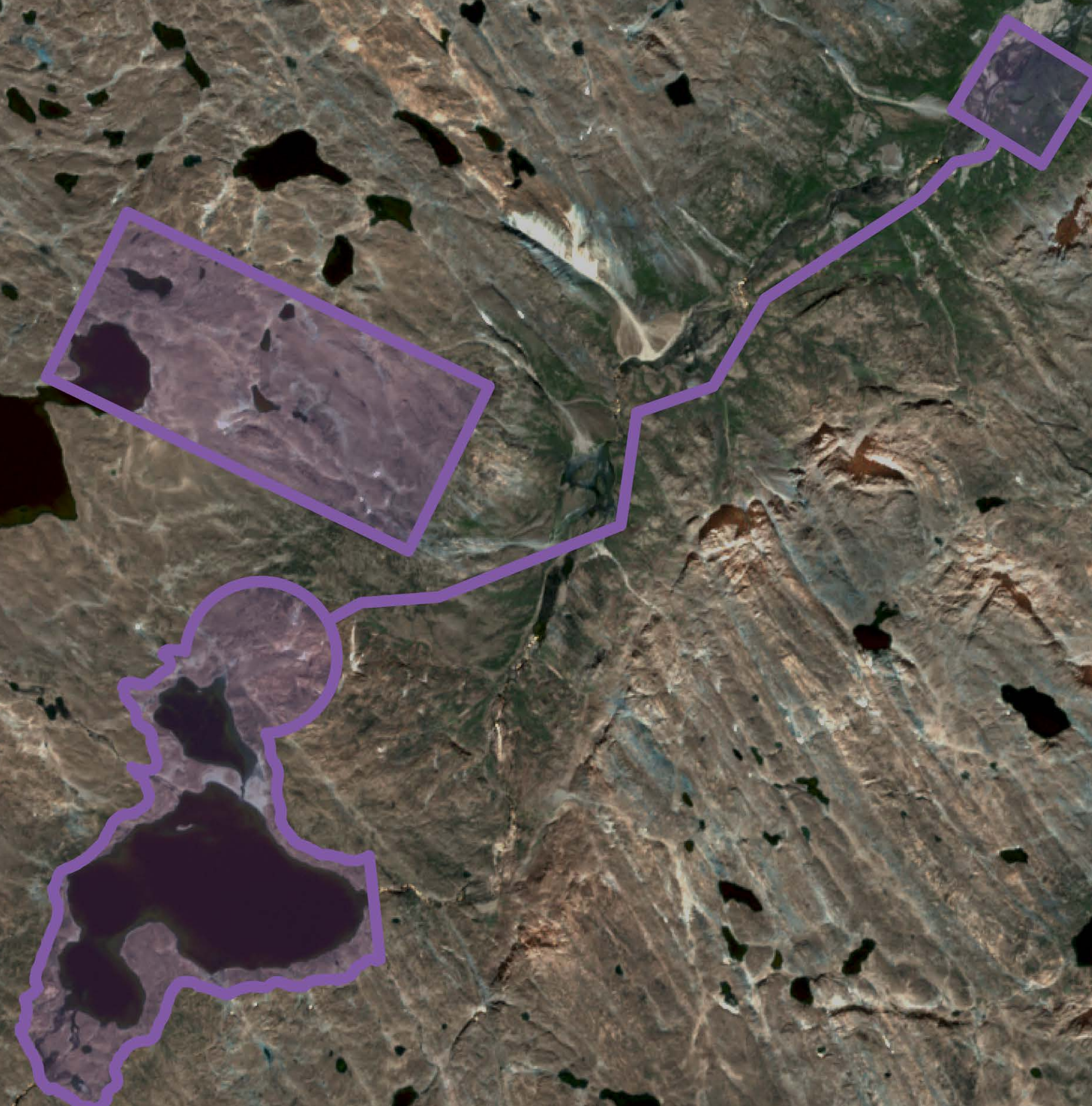
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σΡΔηρLηΓ~μ^c
Overall Rating



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For more information, read about this option in your handout or online.



02

Jaynes Inlet Hydro + Wind

[illegible]

- ✔ Low to Medium Technical Risks (Cold Climate & Geotechnical)
- ✔ Low Resource Risk (Availability + Reliability)
- ✔ Previously supported by the Community (2013) for further study
- ✔ Low risk associated with reliability
- ✔ Low capital cost for high output; potential to lower electricity rates
- ✔ Pumped storage can be added in future as Iqaluit grows
- ✘ Longest transmission corridor among alternatives which is cause for concern for the marine environment
- ✘ Area used for harvesting beluga, seal, narwhal, clams and hunting caribou (an important habitat for caribou)
- ✘ Site used for collecting drinking water from river and ice
- ✘ Cabins in the area
- ✘ Lower potential growth compared to top ranked option



99.5%

Reduction in Diesel
Consumption
for Electricity Generation

σΠΔΛΓΛΓ^α Ⓜ • The Bottom Line

This is a recommended option with high energy output and low risks, with some room for growth. It is possible to explore adding a pumped storage component to the project in the future to increase its output. This site's coastal location, its overland or submarine transmission request suggest it could have higher impact on hunting, fishing and recreation activities compared to McKean South, but it is still a strong option.

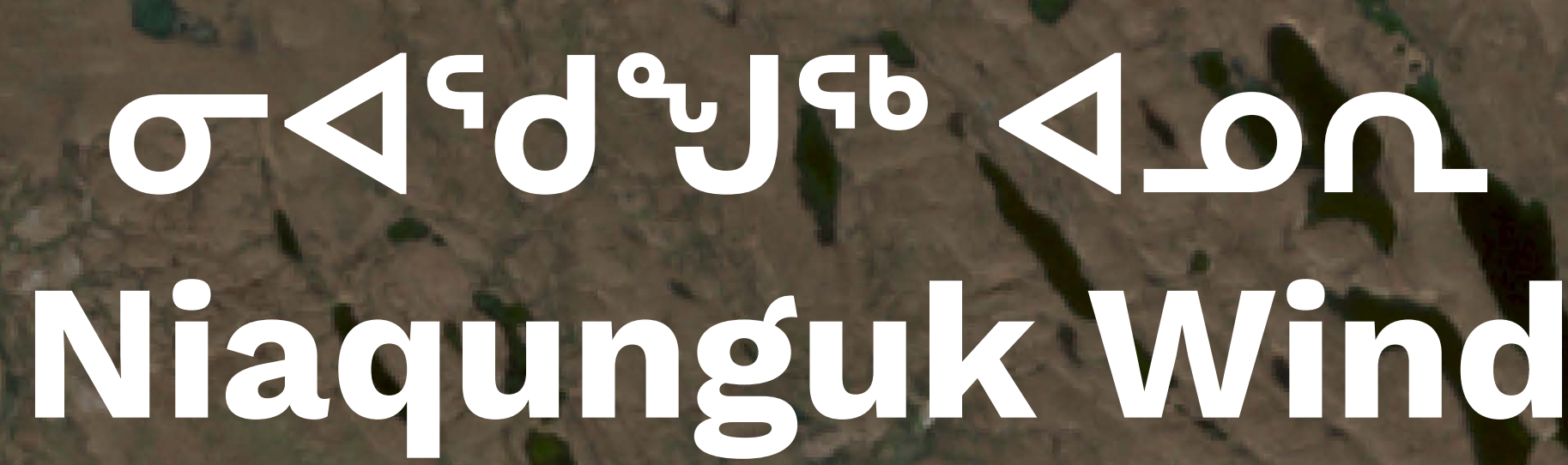
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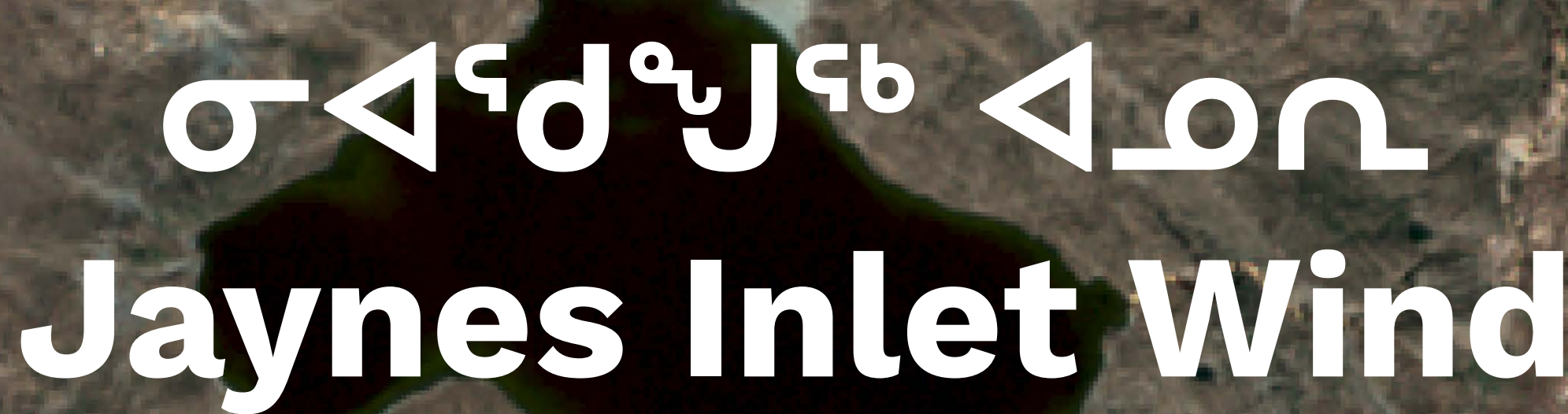
For more information, read about this option in your handout or online.

7/10

Overall Rating



For more information, read about this option in your handout or online.



Overall Rating



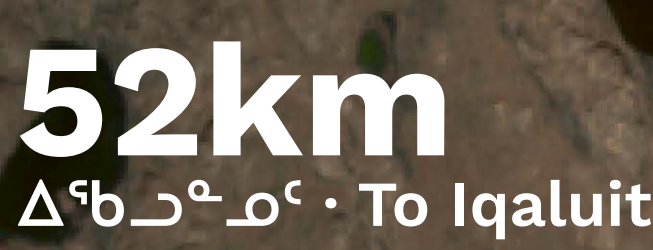
Overall Rating



Overall Rating



σΡΔΛΡΛΓΓ~δ^c
Overall Rating







12

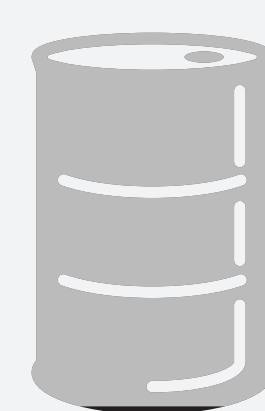
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Cantley Bay Hydro

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- [illegible]

Summary

- ✔ 100% of energy demand met by renewables
- ✔ Lowest site access issues
- ✔ Minimal intrusions on protected areas
- ✔ Very low CO2 emissions
- ✔ Median cold climate risk
- ✔ Low risk associated with reliability
- ⚠ Longer development time (6 years)
- ⚠ This area is used for harvesting seal and caribou. Lots of harvesting activities near mouth of river
- ⚠ Cabins in the area and used a hub for a range of Inuit land such as community gatherings and harvesting ceremonies including celebration of a youths' first hunt
- ⚠ Cultural sites – including campsites used by Tuniit and row of inukshuk
- ✖ Highest geotechnical risk
- ✖ Will break up a large amount of land used for animal habitats. Caribou calving grounds and Seal den area



99.8%

Reduction in Diesel
Consumption
for Electricity Generation

σΠΔΛΛΓΛΓ^α Ⓜ • The Bottom Line

Cantley Bay Hydro would be a very large dam. We would not recommend this site because of the loss of animal habitat and the high geotechnical risk.

[illegible]

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For more information, read about this option in your handout or online.

4/10

σΠΔΛΥΓΩμ Overall Rating



13

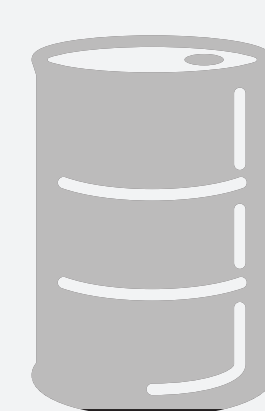
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McKeand River North Hydro

[illegible]

- [illegible]

Summary

- ✓ 99% of energy demand met by renewables
- ✓ 2nd Highest average energy (electric, thermal, industrial)
- ✓ Median cold climate risk
- ✓ Low risk associated with reliability.
- ✓ Minimal intrusions on protected areas
- ✓ Few observations of land use compared to other options
- ✗ Highest site access issues
- ✗ Longest transmission line length required increasing risk of outage
- ✗ Longest development time
- ✗ Highest geotechnical risk
- ✗ High environmental impact: Will create a very large reservoirs following dam construction that will wipe out land habitat for the already struggling caribou population in the area during the calving season
- ✗ High capital cost; electricity would cost more than diesel



98.8%

Reduction in Diesel
Consumption
for Electricity Generation

σΠΔΛΛΓ^α Ⓞ • The Bottom Line

McKeand River North Hydro is more expensive than Iqaluit's diesel system and electricity costs would increase. It has a high geotechnical risk and a significant loss of animal habitat. We would not recommend this option.

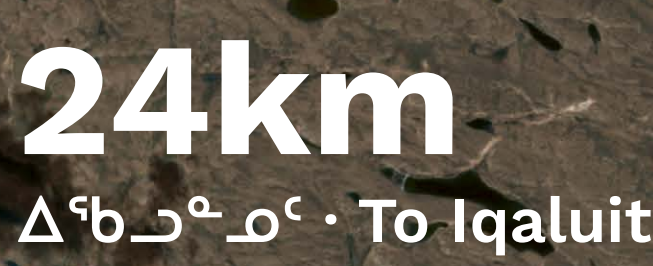
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For more information, read about this option in your handout or online.

2.2/10 **σΡΔΛΡΛΓΛΛ**
Overall Rating

Overall Rating





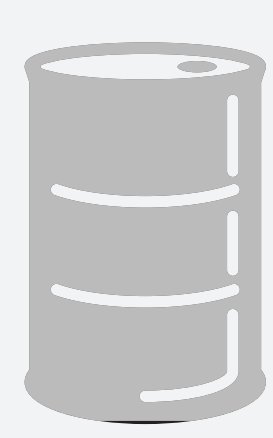
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Armshow River Hydro



Armshow South Hydro

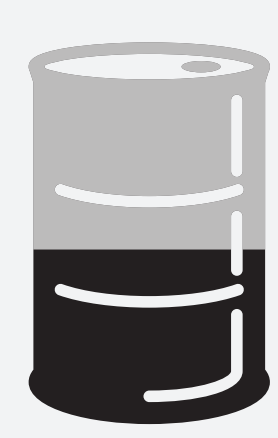


Armshow Lake Wind



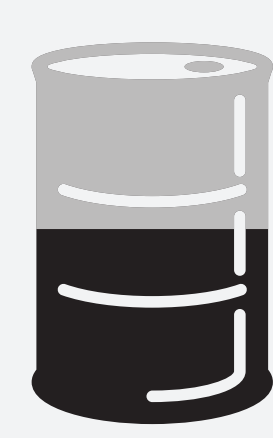
99.3%

Reduction in Diesel
Consumption
for Electricity Generation



56%

Reduction in Diesel
Consumption
for Electricity Generation



51.5%

Reduction in Diesel
Consumption
for Electricity Generation

5.1/10

Overall Rating

4.5/10

Overall Rating

0.9/10

Overall Rating

Q. Δ. 965C

- [illegible]

Summary

- ✓ 99% of energy demand met by renewables
- ✓ Low to Medium technical risks (cold climate + Geotech)
- ✓ Low constructability risk
- ✓ Large MW capacity
- ✗ Heavy land and resource use year-round by Iqalungmiut
- ✗ Will affect the migration of arctic char. This is an important char habitat and fishing area
- ✗ Will break up a large amount of land used for animal habitats. This is an important migratory corridor for many animals
- ✗ Site used for harvesting various species (beluga, bowhead, clam seaweed, ptarmigan, caribou and berry harvesting).
- ✗ Will affect waterways leading to Iqaluit, including areas used to teach fishing to younger generations
- ✗ Health and Safety risk rated “medium”

σΠΔΛΛΓΛΓ^α Ⓜ^c • The Bottom Line

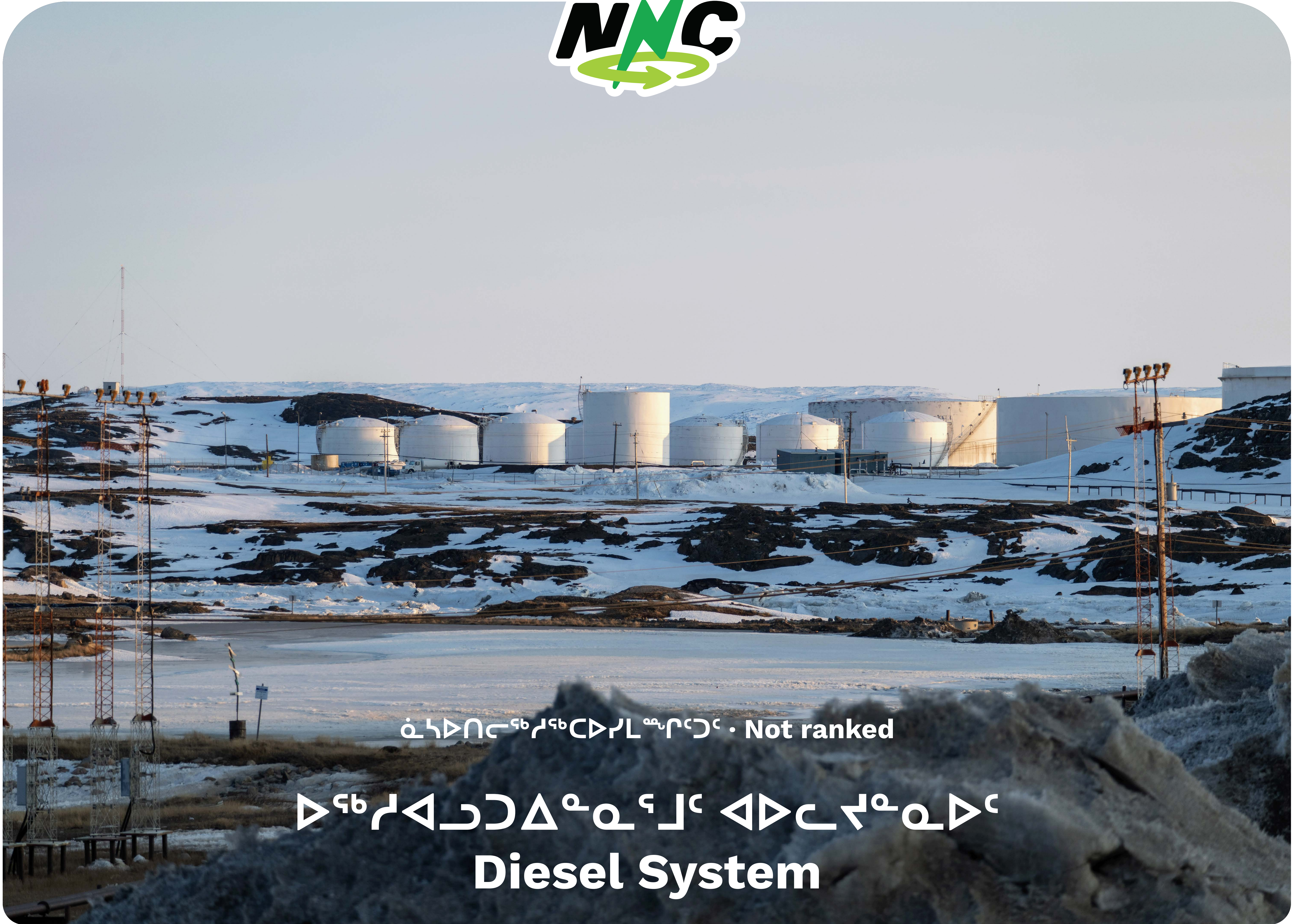
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The last time renewable energy was explored for Iqaluit, this site was rejected due to its importance for hunting, fishing, recreation and animal habitat. We hear you. All options in this area are not recommended.



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For more information, read about this option in your handout or online.



Diesel System

For more information, read about this option in your handout or online.