# drought conditions last year means more electricity generated using natural gas and diesel this spring

HYDRO PLAYS A KEY ROLE IN YUKON'S ELECTRICITY MIX.

HISTORICALLY, WE'VE GENERATED OVER 90% OF THE ELECTRICITY IN YUKON USING WATER.

## CURRENT SITUATION – LESS AVAILABLE WATER

Running a hydro operation means being at the mercy of available water. We have three hydroelectric generation facilities—one in Whitehorse, one in Mayo and one in Aishihik.

Drought conditions and low snow pack levels across much of Yukon in 2019 resulted in lower than normal levels at all three of our hydro reservoirs this spring.

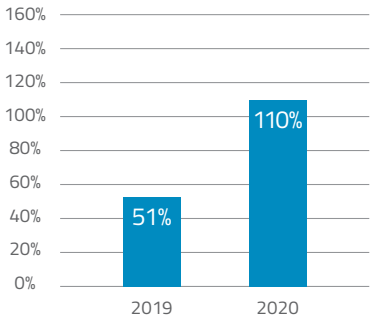
Colder-than-normal temperatures between January and April this year also caused inflows to our hydro reservoirs to be lower than normal for this time of year, and more hydro power to be needed earlier in the year.

The result—less water available this spring to generate electricity compared to normal years.

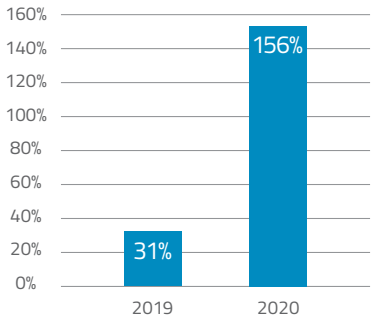
## 2019 and 2020 snow pack levels

Snow pack levels in one year influence the amount of water available for power generation the following year.

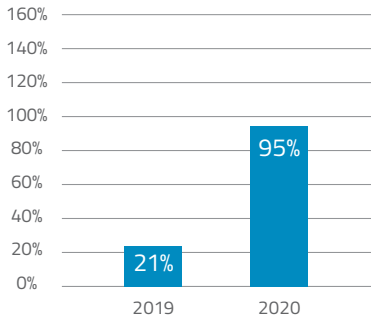
### WHITEHORSE RESERVOIR
% OF NORMAL SNOW PACKS LEVELS




### MAYO RESERVOIR
% OF NORMAL SNOW PACKS LEVELS




### AISHIHIK RESERVOIR
% OF NORMAL SNOW PACKS LEVELS




**Source:** Yukon Government Snow Survey Bulletin and Water Supply Forecasts, April 2019 and April 2020



yukon energy

## WHAT IT MEANS – MORE LNG AND DIESEL

With less water available to generate electricity this spring, we'll need to use liquefied natural gas and diesel to generate the power Yukoners need and that hydro can't produce on its own.

This spring, we also expect to use more diesel than normal to compensate for one of our three natural gas generators being out-of-service. It is currently under repair after a piece of equipment failed over the Easter weekend.

We expect we will need to generate about 16.5 gigawatt hours of electricity using thermal resources in April and early May. That's around the same amount of electricity 16,500 Yukon homes would use in a month, or about 3% of the total amount of power we will likely need to generate this year. We will generate about 72% (or 12 GWh) of the 16.5 GWh needed using LNG, and the remaining 28% (or 4.5 GWh) using diesel.

We recognize that our diesel generators are louder than our natural gas and hydro generation units. Because of this, we are installing noise monitors in Riverdale, and are continuously assessing water levels and inflows into the hydro reservoirs so we can limit the use of the diesel units.

## THE CHALLENGE – YUKON'S ISOLATED GRID

Operating an isolated power system means we can only rely on ourselves to generate the electricity Yukoners need 365 days a year. We do not have the option of buying electricity from other provinces. This means that when local renewable sources of electricity are not available to meet the demand, we must use reliable fuel sources like LNG and diesel to fill the gap.

## HOW YOU CAN HELP – CONSERVE ELECTRICITY

With every simple conservation choice, we reduce the need to use LNG and diesel. Make simple choices—turn off the lights when you leave a room, take a five-minute shower instead of 10, or use LEDs instead of incandescent lights. In addition to helping the environment, these simple acts also save you money each month by lowering your power bill. Electricity conservation makes your life better—in real and everyday ways.

## THE FUTURE – MORE THAN 97% RENEWABLE BY 2030

We are committed to securing a reliable mix of affordable, reliable and sustainable electricity sources today to enable Yukon's prosperity in the future.

Earlier this year, we released a draft of our 10-Year Renewable Electricity Plan. This plan outlines the portfolio of key projects and partnerships needed by 2030 to address the substantial demand for renewable electricity in Yukon.

We already have a number of new supply projects in place or under development. These include:

- demand-side management programs;
- hydro uprates and storage enhancements;
- battery storage;
- micro-generation;
- electricity purchases from Independent Power Producers; and
- the replacement of end-of-life thermal generation.

The addition of a new pumped storage facility on Moon Lake, sourcing renewable electricity from the planned Atlin hydro expansion, and expanding and upgrading the transmission network in the Southern lakes region will also add the dependable renewable capacity that our territory urgently needs.

*Aerial view of the Whitehorse Dam.*
*Photo credit: Archbould Photography*