

# Why so long?

*Yukon Energy has started working with Yukoners to chart the course for the territory's electricity future in the short to medium term. The 2016 Resource Plan will cover electricity needs over the next 20 years. To help you get involved in the planning, we have prepared a series of articles that will provide you with a baseline of knowledge about electricity in our territory. This is the fifth in the series.*

A question that Yukon Energy is often asked is, "Why does it take so long to find and build new energy sources?" We understand why you might be puzzled.

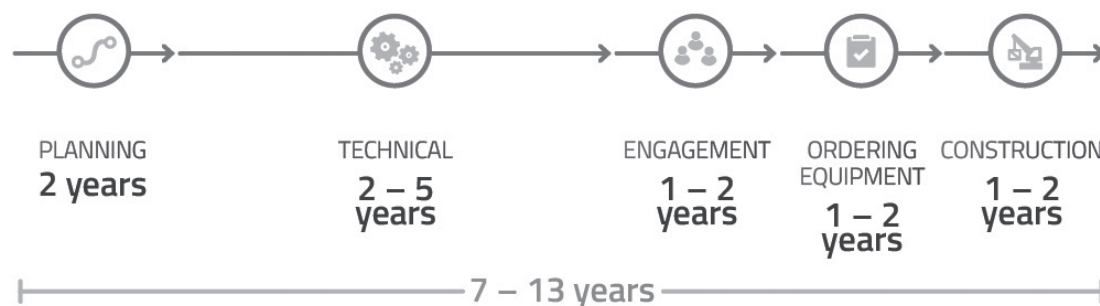
If a school or hospital can be constructed in a couple of building seasons, why should it take a decade or more to build a new dam, or several years to see a wind farm put into place?

To answer that question, it helps to understand the process we must follow:

**1. Planning:** the first step is to identify the need and determine how best to meet that need. How much power will be required? When? What's the most affordable, reliable, and sustainable source of electricity available to us? It's always a challenge to plan now for a scenario that could change several years into the future. This phase alone can take a couple of years.

**2. Technical work:** this involves things such as engineering and research to determine project cost, amount of power that can be generated in both winter and summer, and current environmental and socio-economic conditions and how they might be affected by the project. Depending on the number and type of studies required, this work could take up to five years.

**3. Engaging with Yukoners:** helping you to understand the project, why we feel it is important, and what the effects of the project could be; listening to your concerns and working to address



them. This phase also involves working with Yukon First Nations to reach protocol and/or project agreements. While we can do some of this engagement at the same time the technical work is taking place, this phase could still take a couple of years.

**4. Permitting:** depending on the project, there are a number of reviews, approvals, and/or permits that we need before we can move forward. These could include the Yukon Environmental and Socio-economic Assessment Board, the Yukon Utilities Board and the Yukon Water Board among others. Permitting could take one to two years.

**5. Ordering equipment:** in our business, it's rare to be able to purchase key items "off the shelf". Things such as generators and turbines are usually special ordered and come from half way around the world. We often have to wait one to two years for this equipment to be built and shipped.

**6. Construction:** depending on the project, this could take one to two years.

Since the lead times are so long, it should come as no surprise that Yukon Energy is always looking to the future and is constantly involved in building new projects to meet your needs. In the last dozen or so years, we have

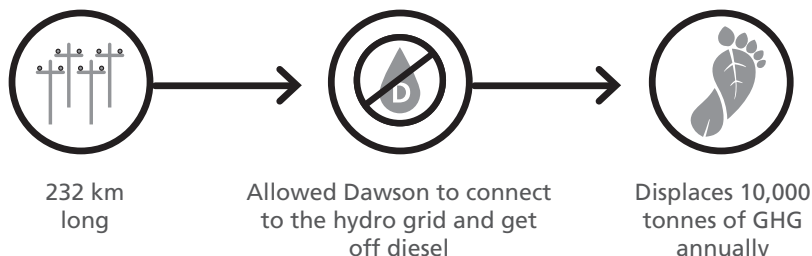
added more than 400 kilometres of new transmission line to the system, about 15 percent more renewable electricity, and have reduced greenhouse gas emissions up to 68,800 tonnes a year.

In our next article we will tell you about what may be on the horizon for new renewable electricity projects in the territory.

For more in this series, visit [yukonenergy.ca](http://yukonenergy.ca)

2003

## Mayo to Dawson transmission line



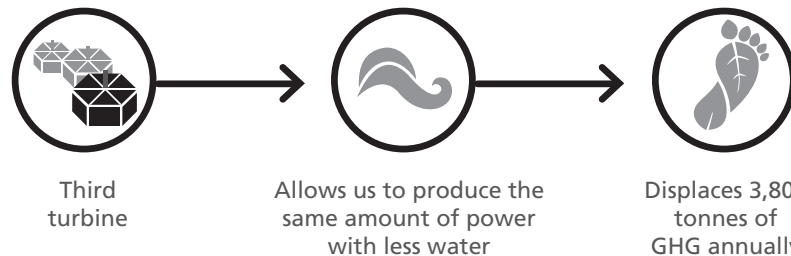
232 km long

Allowed Dawson to connect to the hydro grid and get off diesel

Displaces 10,000 tonnes of GHG annually

2011

## Added third turbine at Aishihik



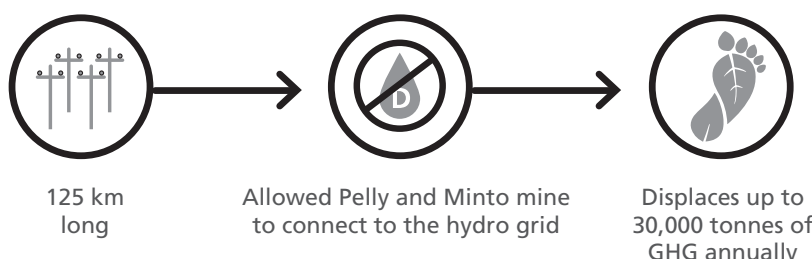
Third turbine

Allows us to produce the same amount of power with less water

Displaces 3,800 tonnes of GHG annually

2008

## Carmacks-Stewart transmission line – Phase 1



125 km long

Allowed Pelly and Minto mine to connect to the hydro grid

Displaces up to 30,000 tonnes of GHG annually

2011

## Added capacity to Mayo B



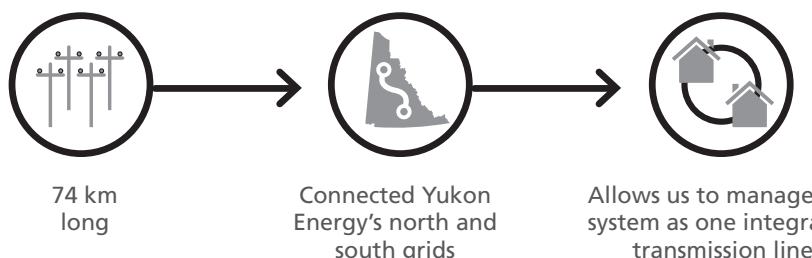
10 MW hydro capacity

Increased capacity without needing a new dam

Displaces up to 25,000 tonnes of GHG annually

2011

## Carmacks-Stewart transmission line – Phase 2



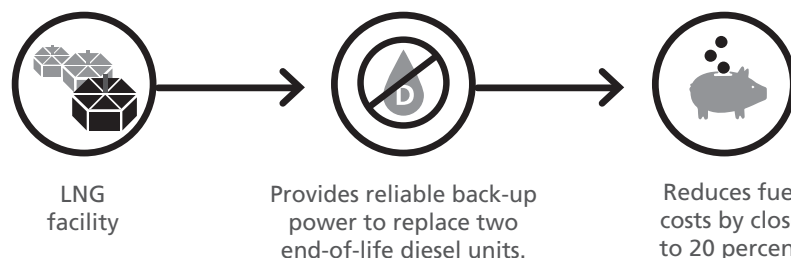
74 km long

Connected Yukon Energy's north and south grids

Allows us to manage our system as one integrated transmission line

2014

## Liquid Natural Gas (LNG) facility



LNG facility

Provides reliable back-up power to replace two end-of-life diesel units.

Reduces fuel costs by close to 20 percent