

How do Yukoners use electricity?

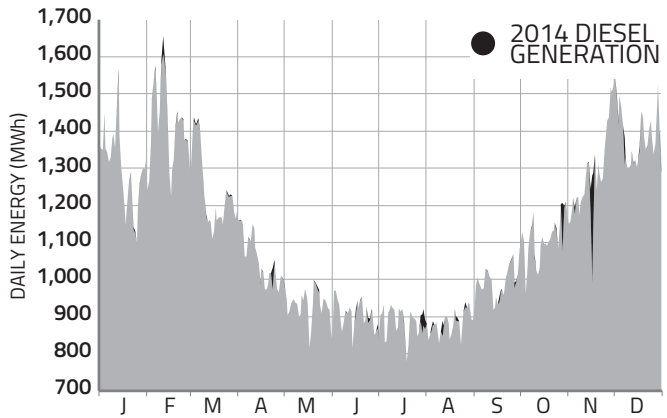
Yukon Energy has started working with Yukoners to chart the course for the territory's electricity future in the short to medium term. The 2016 Resource Plan will cover electricity needs over the next 20 years. To help you get involved in the planning, we have prepared a series of articles that will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

On January 5th of this year just before 6 p.m., Yukoners broke the all-time record in the territory for electricity consumed at any one time... 83.69 megawatts.

Of that amount, 12.4 megawatts was generated using diesel. For every hour that Yukon Energy produces one megawatt with diesel, it costs Yukoners between \$300 and \$350. That means just for that one hour over dinner, Yukoners paid up to \$4,340 for diesel. And the diesels ran for several hours that day. Had the new liquefied natural gas plant been in operation at that time, the cost would have been about 20 percent less.

This snapshot in time illustrates a few of the challenges Yukon Energy faces. First of all, it highlights the fact that power requirements fluctuate depending on the time of day and the time of year. At times in the winter, Yukon Energy must generate power in the order of 80+ megawatts. That's when it must rely on thermal back-up to fill the gap between the amount of renewable energy that's available and the amount of electricity needed to keep the lights (and heat) on. In the summer months, the demand for power drops close to half, and Yukon Energy has an excess of hydro power. We have no place to sell that electricity since we are isolated

Consumption in the past 12 months



from the Northern American grid, currently have no market for this surplus in Yukon, nor do we currently have a way to store this surplus for use in the winter months when we need it.

Even within a 24 hour period, power requirements change. The daily peaks come over the breakfast and dinner hours, as families are cooking, washing dishes, or taking showers.

Yukon Energy must be prepared for those peaks by making sure we have sufficient, reliable power available.

Some Yukoners believe that if it weren't for the mines, there would be enough renewable power in the territory to serve everyone all the time without resorting to thermal sources. That's actually not the case.

Our mining customers only require about 10 percent of the power we produce.

Even with no mines operating, we would still likely have to supplement our hydro with some

diesel or LNG during the coldest times of the year.

We have had a number of Yukoners suggest that there should be time-of-use rates in Yukon, meaning people would be charged more for the power they use during peak times, and less for off-peak times. The argument is that this would help

Our customers



reduce peaks and thus cut down on the amount of non-renewable power Yukon Energy needs to generate. That is something we are currently studying and we hope to have something to report within the next year.

Consumption over 24-hour period

