

I imagine this forum is well represented by those who oppose building the Site C dam as well as those who support its construction. However I am certain that everyone here is determined to achieve these three objectives.

1. Generating a reliable electric power system for domestic and industrial use.
2. Emitting a minimum amount of greenhouse gasses in doing so.
3. Keeping the cost of electricity to the lowest in the world.

And why is our electric energy so inexpensive? Because it's almost 90% Hydro power. China is slightly cheaper for the same reason, but I don't want to live there. Now if you lived in Germany. Their power is only 6% hydro because they have so few rivers to harness. So they are investing heavily in wind, solar & biomass technology and they pay 4 times what we pay for domestic rates.

OK, back to B.C. As you can guess I'm all for continuing to build Site C and other hydro power projects in the future as required. Why?

To reduce greenhouse gasses we have to eliminate burning fossil fuels and we must Electrify everything.

Over the next 50 to 100 years the following events will occur. Not maybe, they will.

1. The population of B.C. will double.
2. All cars, trucks, busses, and trains will be electric.
3. Airplanes will be electric. I just found this out. This weeks news. Zunum Aero of Seattle announced that in 5 years they will have an electric commuter plane in service.
4. All homes will be heated by heat pumps with geothermal assist. No gas or oil furnaces.
5. Natural gas and diesel generating plants will be phased out sooner than later.

This will be done, if need be, by imposing higher carbon taxes and rationing of fossil fuels to emergency responders and marine traffic.

Is 100 years too far ahead to plan our energy strategy? You're right, its not far enough.

In 75 years, when my 4 year old granddaughter is my age all the above electricity demands must be in place and the planning starts now. Our share including Site C should be installed and paid for by us when BC Hydro has a Triple A borrowing rate.

Well, everyone here knows the methods... Hydro, solar, wind, geothermal, biomass, pumped storage, Run of river.

Of the above, Solar farms and wind farms are the most popular choices. Over the last 25 years huge installations have been installed in countries that do not have the luxury of hydro power potential so we have loads of data about their intermittent nature & subsequent inefficiency .

There are two main reasons in my logic.

The Site C dam and an equivalent wind farm will cost about the same to install and a solar farm will cost about 30% more. (Figures from US Energy Information Association) Now Industry uses a term called 'levelized cost of energy'. So Site C will cost \$8.8billion to build. However you have to pay the interest on the money borrowed. That's the levelized cost. \$88/MWh is the most reasonable LCOE that I have seen. I prefer the equivalent 8.8 cents per kilowatt-hour because that's the number we see on our BC hydro bill. It's only a coincidence that it's the same as our step 1 rate.) So for each of the above three power sources, we take out a 30 year bond and they are all paid for. But the wind farm has been beaten to death by vibration over the years and has to be replaced. The blades delaminate (they are made of layers of fibreglass) and the turbine & transmission wear out. The solar panels have degraded in efficiency and need to be replaced. (These are manufacturers recommendations. I didn't make it up. Please confirm this.) However the hydro power plant & dam now has at least 70 more years of service left with just operation and maintenance costs. We are now down to 1 or 2 cents per kwh for O & M. Nearly free electricity for 70 years.

Oh, I said there was two reasons. Every 30 years you have to throw 19 million solar panels and 700 wind turbines in the land fill and manufacture new one. You figure the greenhouse gasses. Is that a good reason to favor hydro power?

But do we need the power now? For those that say energy demands have not increased in the last 10 years. You're right. BC Hydro's Power Smart program has been successful. Demand side management works. But it has its limits with diminishing returns.

Continue to build Site C for a prosperous B.C.