

From: [REDACTED]
To: [Site C Submissions BCUC:EX](#)
Subject: Comments Regarding Site C Dam Economics as compared to Solar Photovoltaic
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August 30, 2017
Site C Comments
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Re Site C Economics as compared to Solar Photovoltaic

The estimated investment cost and energy generated when Site C dam was initiated was for a capital cost of \$9 billion to produce 5,100 GWh of electricity annually, i.e. 5,100,000,000 kWh. **This can be translated to a figure of \$1.76 per kWh installed.** If the currently estimated remaining project cost of the dam (provided there are no budget overruns) is **\$7 billion then the cost per kWh is now \$ 1.37.**

Comparatively, Solar Photovoltaic Power on average can currently be installed in the province of B.C. at approximately \$2.50/W (for a PV system size of 30 kW of capacity, or larger), and if significant financing can be made available (which it has for Site C) then \$2.00/W is attainable today. On average in British Columbia, 1 kW of solar PV capacity installed will produce 1,055 kWh of energy annually. **This equals \$1.90 per kWh installed of Solar Photovoltaic Power.**

Furthermore, there is extremely strong correlation between when the sun shines (between 9 am and 5 pm) and when we require the largest amount of electrical energy (Ontario, which has a time of use rate, charges \$0.18/kWh between 11 am and 5 pm to encourage conservation, and then the rate is cut in half to \$0.087/kWh from 7pm to 7 am¹). So feeding the extra from solar power into the grid would make for a seamless match. In other words, Solar would have the same effect as current energy conservation programs in British Columbia.

Adding to this, that Solar PV can be located in every town, city and district within the Province, the produced power would flow directly to the local community – whereas the power generated at Site C would have to be transmitted on long, expensive hydro transmission lines. Not to mention the thousands of installation jobs and electrical workers that would be employed in every town and community, if local Solar PV power received similar support.

It is a reasonable estimation that the price of Solar PV will further come down to \$1.50 per Watt within less than five to ten years (**That equals \$1.42 per kWh installed**) and potentially down to \$1.00 per Watt in the case of solar farms (**That equals \$0.95 per kWh installed!**).

Solar renewable power can be brought on-line incrementally as needed and if the

provincial government offered interest free loans for the first 5 years of installation. The \$9 billion is an interest free loan for Site C until the dam starts producing power in 8 years from today. (And based on an Accelerated Capital Cost Depreciation of 30% the remaining amount of capital on the books would be down to 60% of the original capital cost). Based on future energy production, the remaining capital could then easily be financed by private lending sources given a currently reasonably estimated internal rate of return of 8% (or by community groups, community bonds, etc). After twenty five years the solar panels might have to be replaced. At that time, a more efficient collector mounted on the existing racking for less than \$0.50 per kWh installed will further improve the attractiveness of the Solar PV investment in the near future – a movement that is already unstoppable today, and that has already gained global traction².

Concluding, I think it is reasonable to assume that the average cost of Solar PV will be lower than the cost of Site C dam, furthermore, the money to finance the new power can be funded through private money and, most importantly, the amount of power that the province requires can be brought on line as needed over time, and sooner than Site C.

Supporting Solar PV Power – amongst many other new clean power resources – is a much better path forward than continuing with the work on Site C Dam.

¹ <https://www.northbayhydro.com/rates-effective-may-1st-2016/>

² [http://www.irena.org/News/Description.aspx?
mnu=cat&PriMenuID=16&CatID=84&News_ID=1486](http://www.irena.org/News/Description.aspx?mnu=cat&PriMenuID=16&CatID=84&News_ID=1486)

Support for this letter has been provided by Richard Siegenthaler of Reconsulting

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Regards,
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