



Site C – Top 10 Frequently Asked Questions November 2, 2017

1. Will Site C be on budget? Answer – No.

The British Columbia Utilities Commission (BCUC) now estimates that Site C will cost \$10 billion because of an estimated \$1 billion cost overrun largely to address geotechnical tension cracks in the slopes at the site (\$377 million as of the Deloitte Report and an additional \$610 million now).

BC Hydro's President and Chief Operating Officer, Chris O'Riley, says there is a real risk that costs will go even higher.

Deloitte LLP, the independent advisor to the BCUC, says that the final cost may be as high as \$12 billion, or 45% over budget.

2. Do we need the power from Site C? Answer – No.

Contrary to BC Hydro's submissions, extensive testimony before the BCUC clearly demonstrates that:

- a) demand for electricity will not increase by the up to 40% claimed by BC Hydro;
- b) surplus power from Site C cannot be sold at a profit on the US export market, as claimed by BC Hydro;
- c) energy conservation programs are being scaled back by BC Hydro;
- d) the BCUC has determined that the Canadian Entitlement power (equal to Site C's) is a dependable resource.

Deloitte LLP concluded that BC Hydro has historically overstated forecast vs. actual electricity load growth by 30% on average.

Other key points:

- Site C is not needed for electric vehicles because charging will occur primarily in off-peak hours.
- Demand from the pulp and paper sector is dropping rapidly as the move to digital media continues.
- LNG energy demand will be limited because it is much less costly to burn natural gas to power LNG operations and still meet the climate change targets set for BC LNG.
- If potential LNG projects require electricity from Site C, the price of Site C electricity will need to be deeply discounted with BC ratepayers picking up the difference.
- Alberta has access to much less costly electricity than Site C and so any export of energy or capacity to Alberta will need to be heavily subsidized by BC ratepayers.

3. Is there a less costly alternative to Site C? Answer – Yes.

We will likely need power at some point in the years after 2024 when Site C is projected to come on stream. When we do, a portfolio of wind power is a much less costly alternative to Site C.

International energy expert Robert McCullough estimates that the replacement of Site C with wind power will save BC ratepayers between \$2.0 and \$4.0 Billion.

This is close to a CAN \$1,000 savings for every adult in British Columbia.

Comparison of Alternatives:		Commission Scenarios			
		Site C	Low LF	Medium LF	High LF
Original Cost		\$ 8,775			
Plus, Cost					
Overrun		\$ 610			
Minus, Sunk					
Costs		\$ (2,100)			
Cost of Continuation		\$ 7,285	\$ 1,851	\$ 2,889	\$ 3,441
Termination					
Cost			\$ 1,800	\$ 1,800	\$ 1,800
Actual Cost		\$ 7,285	\$ 3,651	\$ 4,689	\$ 5,241
Termination Dividend			\$ 3,634	\$ 2,596	\$ 2,044

3.1 Does the BCUC report find that the alternative energy portfolio cost is too high? Answer – No.

Not only is the alternative energy portfolio cost lower than that of Site C, Robert McCullough predicts an even lower estimate by using the less expensive option to firm and shape wind – the non-treaty storage available at the Mica Dam.

3.2 Does the BCUC find that there are significant risks with the alternative energy portfolio so we may never see the savings Robert McCullough predicts? Answer – No.

The risks are manageable. Unlike Site C, which is at a high risk of going over budget, the risk that the alternative energy portfolio will come in over budget or under capacity are small.

3.3 Could we benefit from combining Site C with an alternative energy portfolio? Answer – No.

Appendix B to the BCUC final report determines that the Canadian Entitlement is sufficient to eliminate any need for Site C.

The BCUC and Deloitte LLP have also identified alternatives that are the same or lower cost than Site C.

Most importantly, the BCUC has identified the low load forecast as the most likely scenario. The report also points out that the risks are much higher that Site C will not come in on budget than the risk of wind energy benefits not being fully realized.

For example, while the BCUC says there is a risk that wind costs will not be as low as they forecast, the evidence from actual transactions across North America incorporated into the Lazard estimates indicate otherwise.

4. We know that the wind will not always be blowing when we need the power. What will back-up the wind power?

Answer – There are numerous options other than Site C.

Here are three of the options:

1. BC already has some of the largest reservoirs in North America which can be used to back-up wind. Importantly, BC Hydro's own submissions have made clear that Site C's storage – only 4/10ths of 1% of Williston - is incapable of supporting seasonal operations.
2. We could build geothermal power to back-up wind. The Canadian Geothermal Energy Association (CanGEA) presented convincing evidence to the BCUC that geothermal is a viable low-cost solution.
3. BC will have access to an extra 2.5 million-acre feet (MAF) of backup storage at the Mica dam in 2024 when BC Hydro says we will need more power (this is due to the Columbia River Non-Treaty Storage Agreement ending, putting this storage capability back into the BC Hydro reserve). This is 25 times the backup storage provided by Site C. The opportunity cost of this new energy backup is estimated to cost only \$125 million, a small fraction of the cost of Site C.

Other options include re-activating Burrard Thermal gas generated power for peak power needs, instead of exporting natural gas to other jurisdictions. Amendments to the Clean Energy Act could open up still further options.

5. Do estimated savings from wind power compared to Site C take into account indirect costs, such as getting power to the grid and the cost of maintenance and replacement of wind turbines after 25 years?

Answer – Yes.

The \$2.0 to \$4.0 billion savings estimate prepared by energy expert Robert McCullough takes indirect costs into account. This is an “apples to apples” comparison.

6. Should the BC government still terminate Site C when it means we will have nothing to show for the \$3.9 billion we have spent so far?

Answer – Yes.

Spending another \$8+ billion over the next 7 years is a case of “throwing good money after bad.” It is settled economics that such costs should not be taken into account when making spending decisions. The technical term for this is the “sunk costs fallacy”.

Importantly, even if the \$2.1 billion in sunk costs and \$1.8 billion in termination costs are taken into account, BC ratepayers will still save billions by terminating Site C.

We cannot give the termination dividend (CAN \$1,000 savings for every adult) to British Columbians otherwise.

7. Is the economic case for terminating Site C overwhelming? Answer - Yes.

There are savings in the billions for BC ratepayers from termination of Site C even if:

- The BC Hydro unsupported high load forecast is used
- Sunk costs are included
- Existing storage is reserved for export markets

8. Are there sources of energy other than Site C in British Columbia that could be significantly expanded at lower cost, that are in response to rather than in advance of actual needs, and are less environmentally destructive? Answer - Yes.

There are numerous viable low-cost options, including but not limited to:

- Wind
- Geothermal
- Solar
- Demand Side Management (energy conservation)

9. Are there other non-economic reasons to terminate Site C?

Answer – Yes, numerous reasons.

- Upholding the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) - Site C does not have the consent of First Nations who are most impacted.
- Preserving agricultural land in the Peace Valley that was exempted from a review by the Agricultural Land Commission, and enabling these lands to realize their full agricultural potential.

- Avoiding permanent adverse impacts on the Treaty Rights of West Moberly First Nation.
- Transitioning current Site C workers to other quality job opportunities in growing sectors including renewable energy.
- Avoiding adverse environmental impacts as detailed in the Joint Provincial/Federal Review Panel Report on Site C.
- Avoiding downstream impacts on the sensitive ecosystems and traditional lands of the Mikisew Cree.
- Like other jurisdictions in North America, BC needs to move away from outdated hydroelectric technology and pursue 21st century low cost alternatives, which are deployed when needed such as climate friendly wind, solar, and geothermal.

10. Will British Columbia lose its Triple-A rating by terminating Site C?

Answer – No.

- British Columbia has the highest available credit rating because of its strong financial management, its strong economy, and its record of balanced budgets. These economic fundamentals are not expected to change.
- British Columbia will be able to readily demonstrate to rating agencies that repayment over time of the \$3.9 billion cost of cancelling Site C will not unduly impact financial ratios such as debt to GDP which guide the rating decision.
- By cancelling Site C, British Columbia avoids a much bigger risk to its Triple-A rating – the debt that comes with a project that will likely come in at \$4 to \$7 billion over budget.
- Borrowing under the alternative power generation scenarios will be far less.