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The Final Report of the British Columbia Utilities Commission Inquiry into Site C

On November 1, 2017, the BC Utilities Commission issued the Final Report in its Site C Inquiry. The Inquiry had been ordered by the new provincial government less than three months earlier. It compressed into mere weeks an analysis that would normally take many months of extensive information-gathering and careful analysis.

The BCUC was not asked to advise government whether the project should be completed or abandoned. Its mandate was to analyze the purely economic dimensions of the question, from the standpoint of Hydro ratepayers over the coming years and decades. The Commission was not asked to examine the more political dimensions of the governments' dilemma – such as environmental or First Nations issues and concerns. Those dimensions remain where they properly belong, in the lap of the government which is aiming to make the final decision within a month or so.

BCUC Verdict on Site C: a Statistical Tie

A common public "takeaway" from the Report has been that it cast a dark cloud of doubt over the project; or even that it spells doom for the Site C facility, in favour of small-scale intermittent generation resources like wind power. That perception is a misreading of what the Commission has said. In fact, the Report indicated a close call, in terms of ratepayer value, between the option of completing and terminating Site C. The Commission examined the economics of Site C in comparison with a hypothetical "alternative portfolio" – a shopping-list of other potential ways to provide the energy and capacity our system will need, and concluded:

> *. . . the cost to ratepayers of Site C and the Illustrative Alternative Portfolio are virtually equivalent, within the uncertainty inherent in the assumptions.*
>
> BCUC Site C Final Report, p. 185

The Commission found what may be called a "statistical tie". The key phrase, however, is the final part of this passage: "*the uncertainty inherent in the assumptions*." Prominent BC

energy economist, Simon Fraser University's Dr. Marvin Shaffer explains in this study some of the ways the assumptions applied to the Site C project, on one hand, and the basket of "alternative portfolio" resources, on the other, seriously under-state the advantages of Site C, while also under-stating the costs, risks and disadvantages of the alternative portfolio.

Even with this analytical "thumb on the scale" (which we do not suggest was deliberate) the best the alternative portfolio could come up with was the assignment of roughly equivalent value to the completion of the project.

System Planning

Planning and designing an electrical grid like the BC Hydro system is an enormously complex undertaking. Reconciling the competing imperatives of reliability, affordability and environmental stewardship forces difficult trade-offs and careful priorization of societal objectives and values. Wishful thinking will not provide us with easy solutions. For example, extensive reliance on wind power might be kinder to the environment in many ways, (though like all sources of supply it has its own set of adverse impacts), but it would also mean back-up is required when the wind stops blowing. The system needs "capacity" resources that are "dispatchable" – that can be switched on as needed, regardless of wind or sun conditions. While Germany, for instance, is often lauded for increasing its reliance on wind generation, this has forced it to burn more coal to fill the holes, so to speak, when the wind resource is not available.

The real world of system planning forces hard choices upon us, especially when we are forced to respond to the damage inflicted on the Earth's climate by our reliance on fossil fuels. Fortunately, BC does not need to burn coal to supplement intermittent electrical generation. Our large "heritage" hydroelectric dams built decades ago have furnished us with capacity to fill the holes in run-of-river and wind power – to the point where we will run short of that kind of dispatchable capacity in a few years: run-of-river is like a capacity "sponge" and has seriously drained the benefits of our heritage dams.

That's a large part of the reason why Site C is on the table.

Load Forecasting

Planning our electrical system depends on not only what kind of future we *expect*, but even more important what kind of future we *hope for*. Slowing and arresting the damage fossil fuels have done to our climate will depend on an enormous investment in electrical generation based on renewable and sustainable resources.

The BCUC's analysis that grades Site C and its hypothetical alternatives as cost-equivalents rests above all on its prediction that our demand for electricity will remain relatively flat

for years to come. It assumes *no* major policy changes or progress in replacing hydrocarbons with electrons:

> ***Given the uncertainty, the Panel finds additional load requirements from potential***
> ***electrification initiatives should not be included in BC Hydro's load forecast for the purpose of resource planning****. Although available information indicates that the effects of electrification on BC Hydro's load forecast could potentially be significant, the timing and extent of those increases remain highly uncertain*.
>
> BCUC Site C Final Report, p. 81, bold in original

This is a wager that we will fail to meet the challenge of climate change.

Tackling climate change will mean harnessing every reasonable resource that gives us electricity without greenhouse gas emissions. If BC has viable wind resources, and geothermal potential, we can be certain that they will be developed. But it's not an "either-or" proposition. We cannot maximize our reliance on intermittent sustainable resources like wind and solar unless we also develop dispatchable generation resources to fill the holes.

$4 Billion Tab for a Scrapped Project

It was a blunder for the previous government to force BC Hydro to proceed with Site C without a proper review by the BCUC. Had a full analysis been undertaken before any contracts were signed or holes dug, it is unlikely that the project would have gotten a green light. Not because it would not be a valuable addition to the electrical system, but because there may have been better options available in the short to medium term.

That, unfortunately, was billions of dollars ago – billions that one way or the other BC residents, schools, hospitals and business will have to pay for. The question now is not whether Site C was the best idea at the time. The question is whether it is a better idea to see it through, for all of its difficulties, or to blow the whistle, take it all apart, restore the site to its natural state, eat more than $2 billion in already-spent or "sunk" costs, hitting ratepayers with a bill totalling about $4 billion in return for *nothing* – a re-planted landscape – and then having to go shopping for other ways to meet our energy and capacity needs. And all of those other ways have their own risks, costs and uncertainties.

That $4 billion of thrown-away cost, if we scrap the project, changes the question fundamentally. Let's put the number in perspective: BC Hydro's entire annual cost of operating and servicing its debt is about $4.5 billion. The dead loss flowing from scrapping the Site C project would almost equal an entire year's budget for the Crown corporation.

Think *four* Smart Meter programs . . . except that Smart Meters actually do something very useful for us. Whether or not they were the wisest place to invest $1 billion of ratepayer money, they measure our electricity consumption. A restored Site C landscape means we have obtained zero value from that huge investment.

The "Sunk Cost" Hot Potato

At page 163 of the Report, the BCUC muses about whether or not BC Hydro would be able to recover its sunk costs from ratepayers if the project is terminated. There is a general regulatory law principle that utilities cannot recover expenditures that were not "prudently" incurred. There is no legal basis to even speculate that BC Hydro could not pass on to ratepayers the cost of scrapping the project, including its thrown-away sunk cost. That's because the decision to proceed with Site C was not made by BC Hydro, but by government. Hydro was ordered to build it, the budget was approved by Cabinet, and the entire undertaking was exempted from oversight or review by the Utilities Commission. Only government, not the BCUC, could deprive the utility of the right to recover the billions squandered by starting and then abandoning the dam in mid-stride.

And of course if BC Hydro were ordered to stop the project and prevented from recovering the lost billions from its customers, the cost would all fall onto the shoulders of the taxpayers – who are the same people along with the FortisBC electricity customers in the interior who had nothing at all to do with it.

Continue vs. Demolish – the Options Hit Ratepayers Very Differently

If we finish off the dam, the $2 billion-plus in sunk costs will form part of the total investment in the facility, and will be amortized into rates over a long period, roughly corresponding to the expected useful life of the plant – conservatively 70 years.

If we call a halt, the $4 billion-plus in sunk costs plus the costs of stopping and remediating become a dead loss that has to be collected as well, but the time-frame over which it will me amortized in our Hydro bills would be far shorter. We can expect ratepayers to continue to pay for a facility that they still use decades from now, but it would be contrary to well-established regulatory law principle to force them to continue to foot the bill for a project abandoned and written off two or three generations earlier.

The guiding rule is that ratepayers living 60 years from now should not be bailing out those alive today. In "utility-speak" that would violate what is known as "intergenerational equity."

In the Commission's Report, they suggest time-frames for amortizing the loss flowing from abandonment as long as 70 years. With all due respect, that would be an astonishing

proposition. Ten or (at the outside) twenty years' amortization of a dead loss like this would be in accordance with law and principle.

How long you spread the payments out makes a huge difference in the rate impact – just like the difference between financing a car loan over, say, one year or four. The shorter the amortization, the steeper the monthly hit.

Suggesting that the amortization of the dead loss flowing from abandonment might be stretched as long as that for financing a completed dam may sound even-handed, but actually is another thumb on the scale that makes the options look more equal in their rate impact than they really are.

Public vs. Private Power

Killing Site C would mean that we are thrown deeper into the clutches of private-sector "Independent Power Producers" for decades to come. Dr. Shaffer explains that they are a more expensive source of electricity than BC Hydro because of their far higher cost of borrowing and raising capital. The BCUC compares the cost of the options on the hypothetical footing that future wind and solar would all be built by BC Hydro. This ignores the built-in higher cost of IPPs, and ignores an important built-in financial advantage that the public utility holds for its ratepayers.

Much is said (and generally over-stated) about when we will really need Site C's output for domestic electricity demand. Essentially, the argument is that if even if the dam is a good idea, we're building it too early. "Too early" is mainly about when we think we will do what is needed to combat climate change; but in any event, everyone (including the BCUC) agrees that halting the project for now and resuming in a few years is the worst option of all.

Let's put the issue in its proper perspective: Site C would provide valuable capacity and energy for a century or so. System planning is a long game. And as Dr. Shaffer demonstrates, critics and the BCUC have under-stated the value of the project's output even from the get-go.

The Choice

Is it worth eating billions that will have to be collected through our Hydro bills to demolish the project and start over with a search for alternatives? That is what the issue boils down to. We say that when it comes to the economic dimensions of the issue, it's not a close call at all.

Finishing the project is the hands-down winner.