

AHC Response to BCUC Final Report on Site C

On November 1, 2017 the BC Utilities Commission (BCUC) released its Final Report on the BC Hydro (BCH) Site C Project following its Preliminary Report of September 20.

Among its findings, the BCUC Final Report concluded that:

1. The BCH load growth forecast is overly optimistic;
2. Site C is on schedule to meet its November, 2024 completion date, but there are significant schedule risks;
3. The Project cost will likely exceed the BCH budget of \$8.355 billion and will cost at least \$10 billion;
4. There are other alternative portfolios of energy available with equal or lower costs and similar benefits. The BCUC Alternative Portfolio, developed by Commission staff with the assistance of Deloitte LLP, is comprised of wind, solar, geothermal energy sources and batteries. As well there are demand side management (DSM) options that can be utilized and the province could rely to some extent on the Downstream Benefits (DSBs) from the Columbia River Treaty, which are comparable in size and benefits to Site C. In addition there is the non-Treaty storage at Mica that “may have the potential to reduce the PV cost of the illustrative Alternative Portfolio.” And, finally, the Burrard Thermal Electric plant could be reopened for peak power;
5. There are outstanding environmental and First Nations issues that must be addressed if the Project proceeds;
6. Surplus power sales to export markets would entail net financial losses in the near term because of persistent low Mid-C power prices;
7. Suspending the Project is the least attractive option;
8. There will be little difference in ratepayer costs from terminating the Project and proceeding with an Alternative Portfolio of wind, geothermal, solar power and batteries.

The BCUC has generally adopted the arguments taken by Site C opponents, who the BCUC says, have expressed their “beliefs” and their “opinions”. The Allied Hydro Council (AHC) would say, “often without solid factual evidence”. The AHC said in its Technical Session Presentation to the Panel on October 13 that these opponents have relied on one or more of three assertions:

- Future BC power demand will be flat or falling
- Site C capital costs are high and will rise sharply going forward
- Alternatives to Site C are readily available, have equal to or lower costs and have all the same benefits of Site C

The AHC contends that the BCUC have misunderstood or ignored important information and have discounted factual evidence provided by the AHC and a number of other parties who have made submissions to BCUC. At the end of a 187 page Final Report the BCUC states “We have taken no position on which of the termination or completion scenarios has the greatest cost to ratepayers. The illustrative Alternative Portfolio ...has a similar cost to ratepayers as Site C. If Site C finishes further over budget, it will tend to be more costly...”

The AHC' s response to the BCUC Final Report is as follows:

- 1. *The BCH load growth forecast is reasonable, as the AHC August 21, 2017 Site C - Review Submission to the BCUC stated.***
 - a. BCH has electricity demand growing by just 1% per year from 2017 through 2036, a need for the equivalent of 3 Site Cs.
 - b. The growth does not, as many opponents believe, rely in a major way on the development of a LNG industry, 2,662 GWH that is only about 3% of total demand in 2036.
 - c. As Mark Jaccard argued, if BC and Canada are to meet their GHG reduction commitments the BCH resource supply will need to be expanded by the equivalent of 5 Site Cs for that reason alone.
 - d. If electric vehicles continue to grow as rapidly as has been the case, the BCH forecast will prove to be low.
 - e. Even if the *energy* produced by Site C would be surplus to our domestic needs for the first few years of its operation, the facility would operate for a century or more, well into a de-carbonized future when our electricity needs would be significantly greater than today; and in the nearer term, BC Hydro will need Site C's *capacity* by the time the facility comes into operation, largely because of the ongoing need to firm the intermittent energy delivered by run-of-river and other projects owned and operated by Independent Power Producers.

- 2. *BCH does not have a good record in completing projects on schedule.***
 - a. The problem has been and continues to be that BCH has inefficient procurement and project management processes. AHC has argued in its Submission that the problems created can be avoided or reduced by adopting more modern processes, such as those used by the independent power producers (IPPs) and Columbia Power Corporation for its hydropower projects (880 MW in four projects).
 - b. Some problems could be avoided by using the AHC/ CHC labour agreement used by Columbia Power and used by SNC Lavalin on the John Hart Project (on time and on budget despite geological issues). This is not to ignore the geotechnical and other challenges the Site C Project faces but exhibits the commitment of the labour force and management approach to resolving site issues and concerns.

- 3. *As with delivering projects on time, BCH does not have a good record in delivering projects on budget.***
 - a. The AHC argued in its Submission that adopting better procurement/ project management/ labour agreement practices as used by Columbia Power Corporation could reduce the BCH problem.
 - b. The AHC also made the point that while Site C is costly, the cost escalation on the budget from 1980 to the present has averaged just 3% per year. It has not been out of control.
 - c. A very important point goes to the apparent lack of understanding by BCUC with respect to investor project decision making. The Panel says it is inappropriate to consider "sunk costs" in making future project investment decisions. AHC has taken the position that most economists would accept, that the decision to proceed with a project should be based on the relative 'out of pocket costs' going forward. For Site C that is not an investment cost decision of \$8.8 billion, or \$12 billion as the BCUC speculate, but is \$8.8 billion less the sunk cost of \$3 billion, or \$5.8 billion. The \$3 billion does not disappear in this analysis, it just is not relevant to a 'go'/'no go' decision if additional power is

needed. The \$3 billion is an accounting issue, and its cost will either be borne by rate-payers or by the shareholders of BCH (taxpayers).

4. *The BCUC's assertion that alternative energy portfolios to Site C will have similar benefits and will be equal to or lower cost than Site C has little technical basis of support.*

- a. There are currently no commercial solar power facilities in BC, although as the AHC noted, there are some in Ontario
- b. While there are a few small geothermal power resources in BC, there are no power facilities; battery technology has been improving but as Deloitte say, "...battery storage is not a commercially feasible technology at the present time.... there is increasing evidence that energy storage will eventually mature into a commercially viable grid-scale resource over the time of the forecast to 2040."
- c. The other storage alternative, pumped storage, has never been used in BC.
- d. Burrard Thermal does not operate because the Province some years back determined that burning natural gas to produce power was not environmentally acceptable.
- e. If it was acceptable, the most cost efficient alternative to Site C would be a CCGT plant that can generate electricity at a unit energy cost (UEC) of \$70/MWh and has 95% availability.
- f. The BCUC Alternative Portfolio is not reliable or realistic, and its costs far less certain than Site C. It does not take into consideration the start over implications of financing, permitting and construction schedule required for alternative energy by 2024.
- g. In its Preliminary Report, the BCUC states that DSBs should not be relied on in the place of Site C. It has reversed this position in the Final Report and consider DSBs a viable option. The AHC contend that the DSBs are not reliable because the Columbia River Treaty can be revoked by the US, and that country under its current Administration is now on a path of revoking a number of international agreements. DSBs are imports, contrary to BC energy policy, and their cost, the UEC, is at least equivalent to Site C power as the AHC Submission demonstrates. DSBs are not free.
- h. The fact that there is some non-Treaty storage at Mica does not change this conclusion. When there was post-Treaty discussions a few years back about the use of Columbia River dam storage for enhancing power generation in BC there was strong environmental opposition to that idea in the Columbia Basin.
- i. The AHC, when asked by the BCUC to support its argument that Site C has lower costs than alternatives, did so in a submission to BCUC on October 16 titled "Replacing Site C With Wind Or Hydro Power". It shows that to replace Site C with wind power would require 17 new wind plants at a capital cost of \$4.1 billion, with a UEC of \$104.40/MWh, using the Deloitte data. For hydropower plants 34 new facilities would be required, at a capital cost of \$7.5 billion, with a UEC of \$131.60/MWh. These compare to Site C with a remaining capital cost of \$5.8 billion, allowing for the \$3 billion of sunk cost, with a UEC of \$105.63/MWh. And, the BCUC Alternative Portfolio, with unproven battery storage, does not provide the storage and dispatchability that Site C would have, which are major benefits.

5. *Environmental and First Nations concerns are critical.*

- a. BCH has gone through exhaustive environmental permitting processes as well as First Nations consultations. But more could be done to gain local and First Nations support.
- b. One approach, which has proven very successful in the Kootenay Region, was developed in the 1990s. That was the Columbia Power Corporation/Columbia Basin Trust (CPC/CBT) ownership/project development model. CPC/CBT were provided with a

cash endowment of \$500 million over 10 years to develop run-of-river hydropower projects. CPC/CBT acquired the rights to develop four power plants and did so. The projects they developed have 880 MW of capacity, second in scale to BCH in BC. All of the projects were delivered on time and on budget. CPC/CBT sell power to BCH and Fortis BC. The CBT uses its share of earnings for Columbia Basin programs and investment. This could be done at Site C by establishing the “NE BC Power Company” owned locally with a long-term power sales agreement with BCH.

- c. Site C has already withstood one First Nations court challenge and no Canadian law or Supreme Court decision gives First Nations a veto over resource project developments, although there is a requirement for consultation and accommodation. AHC believes that the CBT model ensures equitable distribution of control and benefits.

6. *The BCUC has accepted the argument that surplus Site C power exports to Alberta or the US cannot be attractive.*

- a. Most of the BCUC’s attention is focused on the US, the Mid-C market. As the AHC Submission and Technical Session presentation pointed out, the current and recent past Mid-C power prices do not reflect the cost of generating power, they simply indicate that US governments chose to encourage wind power with subsidies and favorable power sales agreements. Wind plants generate when they can and utilities must ‘take or pay’, this often results in oversupply from hydro power plants, which is dumped on the market driving down prices. So until this problem is dealt with Mid-C is not a viable market for long term BC power supplies.
- b. Alberta and Alaska may be and should be considered for profitable sales opportunities, not for distress Site C sales.

7. *AHC agrees with the BCUC that the suspension and possible re-start of the Site C Project should not be given serious consideration.*

8. *The AHC Submission and its follow-up notes to the BCUC demonstrate that; when valid data is used, when a generally accepted levelized cost analysis is used, when valid consideration is given to sunk costs, and when availability and storage benefits are considered, the Site C UEC and capital cost are more attractive than alternative portfolios.*

The AHC contends that the Province of British Columbia should proceed with the completion of the Site C Project in the public and ratepayer’s interest with the above noted adjustments to the BCH procurement approach and overall project management.

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In consultation with Sivertson and Associates Consulting Ltd.