August 17, 2017

Commission Secretary
B.C. Utilities Commission
Sixth Floor, 900 Howe Street
Vancouver, BC Canada V6Z 2N3

Attention: Mr. Patrick Wruck

Dear Mr. Wruck:

Re: BCUC – Site C - Inquiry – Order-in-Council 244 – August 2, 2017 – Request for Materials

Introduction

By this letter the Clean Energy Association of B.C. (“CEBC”) is requesting that the British Columbia Utilities Commission (“BCUC”) obtain from BC Hydro pursuant to paragraph 4 of BCUC Order G-120-17 or section 82(2) of the Utilities Commission Act the below described models, contracts and reports pertaining to the Site C project. And subsequently to allow the CEBC and other interested party’s access to them, in accordance with the broad powers established by section 82(2). The CEBC cannot speak on behalf of the BCUC or other interested parties but it assumes that this material, and in the case of the interested parties access to it, would be as valuable to them as to the CEBC. The material is the numeric core of the Site C project and would provide the CEBC and other interested parties with the means to engage in the consultation required by section 3(d) of the Terms of Reference including commenting on the BCUC’s preliminary Site C report, and to file their evidence.

Complete Models

The CEBC requests the BCUC to require BC Hydro, as soon as possible, to provide to the BCUC the complete working versions of the models and/or calculations (“Complete Models”) described immediately below. The CEBC further requests the BCUC to allow interested parties access, as soon as possible, to the Complete Models. If necessary this access could be the subject to confidentiality agreements in order to protect any commercially sensitive information.

This access, and access to the contracts and quarterly reports described in more detail below is necessary to ensure that there is an “open and transparent inquiry for the Site C project” which is the standard established for this inquiry by the Chair & CEO of the BCUC in a News Release dated August 3, 2017. In particular the Complete Models are the numeric roadmap to the Site C project.

Access is requested to:

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1 Order in Council 244, August 2, 2017
2 See Attachment 1
1. The Complete Model for the $7.9 billion Site C project as it existed in September 2014 or in reasonable proximity thereto.

2. The Complete Model that was reviewed by KPMG LLP (“KPMG”) for the purposes of the report it delivered to BC Hydro, dated October 20, 2014 (“KPMG Report”). The scope of KPMG’s was very limited and for example did not include:

   “1. assessing or verifying the commercial risks associated with the Project, nor commenting on the possibility of the financial projections contained in the Financial Model of being achieved

   5. assessing the completeness of the Assumptions or inputs used in the Financial Model”.

3. The Complete Model for the $8.8 billion Site C project as it existed immediately after the date of the B.C. Government News Release dated December 16, 2014.

4. The Complete Model for the $8.8 billion Site C project as it exists today.

5. The Complete Model(s) that were used to calculate the figures shown in Table 24 – Benefit of the Project: Sensitivity Analysis Summary in the Evidentiary Update dated September 13, 2013 that BC Hydro filed in the Site C Joint Review Panel process.

6. The Complete Models (s) that were used to calculate the figures in the Backgrounder entitled “Comparing the Options” ("Backgrounder") i.e. the figure in the table “Site C Cost to Ratepayers (before changes) and the $96/MWh, $85/MWh, $64 to $67/MWh and $110 to $130 /MWh figures on page 3. If any of these figures were calculated by the B.C. Government using its own models, the CEABC requests the BCUC to require the B.C. Government, as soon as possible, to provide the complete models and/or calculations and that interested parties be allowed access to the same. If necessary this access could be subject to confidentiality agreements.

7. The Complete Model(s) that were used to calculate the $630 million cost if there is a one-year delay in the Site C Project.

The availability and access to these models is necessary for the BCUC, CEBC and other interested parties to conduct the necessary due diligence with respect to the following portion of the Site C Terms of Reference:

"Given the energy objectives set out in the Clean Energy Act, what, if any, other portfolios of commercially feasible generating projects and demand-side management initiatives could provide similar benefits (including firming; shaping; storage; grid reliability; and maintenance of reduction of 2016/17 greenhouse gas emission levels) to ratepayers at similar or lower unit energy cost as the Site C project?"

The CEBC is concerned that BC Hydro and/or the Government may have made some abnormal adjustments or incorrect inputs and assumptions when calculating the unit energy cost of Site C and alternative portfolios and when comparing the two. This comparison must be on a “level playing field
basis”. For example, in the below table the PV Cost difference between a portfolio without Site C minus with Site C is negligible.

![Table 24 - Benefit of the Project: Sensitivity Analysis Summary](image)

Yet in the Backgrounder, It says:

“When considering the impact on ratepayers, the costs of delivering the electricity must be accounted for. In addition, as IPPs are intermittent, the cost of backing them up with firm energy sources (e.g. natural gas) must be included. Also, IPPs do not have the same ability to store energy and take advantage of high prices on the export market, which reduces trade revenues.

Accounting for all these factors, the final cost to ratepayers is $64 to $67/MWh for Site C and $110 to $130/MWh for IPPs.”

In order to understand how the results of the PV Cost analysis and the unit energy cost are so markedly different with the alternatives being approximately twice as costly as the Site C project according to the figures in the Backgrounder, the CEBC needs access to the above Complete Models to conduct the due diligence necessary to ascertain whether any abnormal or incorrect inputs have been made in the Complete Models. Or whether these models are deficient because they do not contain a line item for a necessary input(s).

To further illustrate the rationale behind this request, it is very important to understand if the unit energy cost identified in the Backgrounder assumes that the energy and capacity from clean generation came into service at the same time as Site C. If it does (as in the case of the block analysis used in BC Hydro’s 2013 Integrated Resource Plan to calculate the adjusted unit energy costs to compare Site C to other renewable sources), clean generation which can be built to match load would be severely disadvantaged. Unlike Site C, the surplus energy and capacity from the clean generation would not have to be sold at whatever price could be obtained in the export market because with the ability to match load, the surplus wouldn’t exist.

With access to the Complete Models the CEBC, the BCUC and other interested parties could determine whether any abnormal adjustments have been made. It is imperative that there be an open and
transparent assessment of, per the Terms of Reference, the: “portfolios of commercially feasible generating projects and demand-side management initiatives” that are the alternatives to Site C.

Contracts and Bids

The CEBC also requests that the BCUC require BC Hydro to provide to the BCUC the complete contracts and contents of the bids (“Contracts”) described below. The CEBC further requests the BCUC to allow interested parties access to the Contracts. If necessary this access could be the subject to confidentiality agreements in order to protect any commercially sensitive information.

The availability and access to the Contracts is necessary so that when the BCUC consults with the CEBC and other interested parties with respect to the following portions of the Site C Terms of Reference, these parties will have completed their due diligence and the consultations will be meaningful:

“(a) the commission must advise on the implications of:

(i) completing the Site C project as currently planned,
(ii) suspending the Site C project while maintaining the option to resume construction until 2024, and
(iii) terminating the construction and remediating the site;

(b) more specifically, the commission must provide responses to the following questions:

(i) After the commission has made an assessment of the authority's expenditures on the Site C project to date, is the Commission of the view that the authority, in respecting the project, currently on time and within the proposed budget of $8.335 billion (which excludes the $440 million project reserve established and held by the province)?

(ii) What are the costs of suspending the Site C project, while maintaining the option to resume construction until 2024, and what are the potential mechanisms to recover those costs?

(iii) What are the costs to the ratepayers of terminating the Site C project and what are the potential mechanisms to recover those costs?”

Access is also required to verify Complete Model inputs and assumptions.

For example, the Contracts need to be examined for any break fees and apportionment of risk such as geotechnical risk. In this respect: “Has a geotechnical baseline been established for site conditions?” If yes: “Who will bear the additional costs if the site conditions are worse than expected?” Another example is the responsibility for delays. BC Hydro has taken on the role of General Contractor for the Site C project with the result that the cause of delays becomes very significant. What are the consequences if the cause of a delay results from BC Hydro's failure to properly manage a contract or to provide information in a timely manner? Are liquidated damages payable? Is additional time given to the contractor to perform? What are the financial consequences if BC Hydro is required to provide this additional time to perform? Have the necessary contingencies been included in the relevant Complete Models?
At the broader level the below table prepared by the CEBC shows that as compared on a $/megawatt basis to other standalone major hydro projects currently under development in Canada, Site C is a low cost outlier. Even as compared to BC Hydro’s John Hart project which is a brownfield redevelopment. This outlier status could be a function in part of how risks have been allocated in the Contracts with BC Hydro taking on risks in order to obtain lower “top line” prices that later significantly increases because of the risk allocation. Access to these contracts will allow the BCUC, CEBC and other interested parties to do the necessary due diligence to assess the level of risk allocation.

<table>
<thead>
<tr>
<th>Project</th>
<th>Capacity (MW)</th>
<th>Cost ($billions)</th>
<th>Cost ($/MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muskrat Falls, NL*</td>
<td>834</td>
<td>12.7</td>
<td>15,000,000</td>
</tr>
<tr>
<td>Keeyask, MB*</td>
<td>695</td>
<td>8.7</td>
<td>12,500,000</td>
</tr>
<tr>
<td>John Hart, B.C.*</td>
<td>132</td>
<td>1.4</td>
<td>10,600,000</td>
</tr>
<tr>
<td>Site C, B.C.*</td>
<td>1,100</td>
<td>8.8</td>
<td>8,000,000</td>
</tr>
<tr>
<td>Site C, B.C.</td>
<td>1,100</td>
<td>8.335</td>
<td>7,600,000</td>
</tr>
</tbody>
</table>

* Approximate current level of completion: Muskrat Falls (70%); Keeyask (50%); Site C (10%)

Access is requested to the following contracts:

(a) Worker Accommodation (Awarded September 28, 2015).
(b) Main Civil Works (Awarded December 21, 2015).
(c) Site Preparation – North Bank (Awarded July 23, 2015).
(d) Ministry of Transportation and Infrastructure Public Road Improvements (Awarded July 23, 2015).
(e) Turbines and Generators (Awarded April 6, 2016).
(f) Bids for the Generating Station and Spillway Civil Works (RFP issued September 23, 2016).

**Reports Filed with the BCUC**

The CEBC requests that it and other interested parties be given access, with this access if necessary the subject of confidentiality agreements in order to protect any commercially sensitive information, to the complete Site C reports that BC Hydro has filed with the BCUC (“Reports”). This access is required for the same reasons as access to the Contracts – the consultation that the BCUC is required to undertake with the CEBC and other interested parties must be meaningful and verification of assumptions and inputs in the relevant Complete Models.

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8 John Hart Generating Station Replacement cost $1,093 plus seismic upgrade cost of $408.2 million as per BC Hydro’s response to CEBC Information Request 1.17.1 with respect to BC Hydro’s Fiscal 2017-Fiscal 2019 Revenue Requirements Application This response states in part: “At the time of the Certificate of Public Convenience and Necessity filing for the John Hart Generating Station Replacement in 2012, the John Hart Dam Seismic Upgrade was considered a Future Project. The $286 million presented at that time as an upper bound estimate, was also a planning allowance for which there is no defined level of accuracy….The difference in planning cost allowance from 2012 to now is due to the inclusion of a new cost allowance to reflect the finding that previous remedial options at both the Middle Earth fill Dam and North Earth fill Dam are either infeasible, or on their own are insufficient to meet the seismic performance objectives.” The increase from $286 million to $408.2 million is 43%.

9 Terms of Reference 3(b)(i)
Provision of Summaries

The provision of summaries to the CEBC of the Complete Models, Contracts and Reports will not be adequate. In the BCUC’s review (“2006 Review”) of BC Hydro’s 2006 Amended and Restated Long-Term Electricity Purchase Agreement (“LTEPA”) with Alcan, BC Hydro requested that this agreement be kept confidential for reasons of commercial sensitivity. In lieu of the LTEPA, BC Hydro provided what can be broadly described as summary information. Ultimately BC Hydro withdrew its claims of confidentiality. As compared to the summary information, the actual LTEPA provided far more relevant and material information to the CEBC than the summary information. The actual information was an integral part of the CEBC’s submissions and probably others.

Confidentiality

In relation to confidentiality, the CEBC assumes that KPMG was given access to the financial model that was the subject of the KPMG Report pursuant to a confidentiality agreement. Effectively the precedent has been set for similar access for the CEBC and other interested parties.

Geotechnical Risks

As the geotechnical risks associated with the Site C project are critical to its final cost, the CEBC urges the BCUC to contact the World Bank, headquartered in Washington D.C. for the names of consultants that it uses for this type of work. A review of BC Hydro’s geotechnical assumptions by a suitably qualified world renowned expert(s) is essential.

Deadlines

The CEBC understands that the BCUC must carefully review the requests that CEBC has made in this letter but the timeframe for filing evidence is August 30, 2017 and the CEBC would appreciated receiving a response as promptly as possible.

All of which is respectfully submitted.

Yours truly,

David Austin on behalf of the Clean Energy Association of B.C.

DAA/lmd

Encl.

cc: potential interested parties
BC Hydro

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11 2006 Review, Exhibit B1-A
12 2006 Review, Exhibit B-3, page 2
13 2006 Review, Exhibit A-4, Reasons for Decision, page 1
NEWS RELEASE – BCUC Initiates Site C Inquiry Following Government Direction
August 3, 2017

Vancouver – The British Columbia Utilities Commission (BCUC) has initiated an inquiry into BC Hydro’s Site C project, as directed by the Provincial Government in an Order-in-Council (OIC) on August 2, 2017.

The scope of the inquiry is set out in the government’s Terms of Reference for the OIC, which is available on the BCUC’s Site C Inquiry webpage: http://www.bcuc.com/Sitecinquiry.html. The BCUC has been directed to examine the impact on BC Hydro ratepayers associated with continuing, suspending or terminating the Site C project.

The inquiry will be handled in two phases. In the first phase, the BCUC will gather information and produce a preliminary report. Next week, parties will be invited to submit data and analysis within the scope of the Terms of Reference, to be considered for inclusion in the preliminary report. The deadline to submit data and analysis is August 30, 2017. Updates on the process for phase one will be posted on the BCUC’s Site C Inquiry webpage.

In the second phase, the BCUC will seek public input on the preliminary report developed from the first phase. The BCUC will issue the preliminary report, addressing the specific issues set forth in the Terms of Reference, by September 20, 2017, and a final report by November 1, 2017. We will invite comments on the preliminary report from all interested parties before issuing the final report. We will conduct open houses around the province to provide people with the opportunity to comment. Interested parties can also make submissions on the BCUC’s website.

More details on the logistics of the inquiry and how you can participate can be found on the BCUC’s Site C Inquiry webpage.

“We are committed to an open and transparent inquiry of the Site C project,” says David Morton, Chair & CEO of the BCUC, “and I encourage British Columbians to participate.”

BC Hydro received approval from the provincial government to begin construction on Site C, an $8.8 billion project to construct a third dam and generating station on the Peace River in northeast BC, in December 2014. Site C is an exempt project under the Clean Energy Act, which means that the BCUC previously had no jurisdiction over the project. However, under section 5 of the Utilities Commission Act, the Lieutenant Governor in Council can set terms of reference and direct the BCUC to inquire into any matter.

The BCUC is a regulatory agency responsible for oversight of energy utilities and compulsory auto insurance in the province of British Columbia. It is the BCUC’s role to balance the interests of customers with the interests of the businesses we regulate. The BCUC carries out fair and transparent reviews of matters within its jurisdiction and considers public input where public interest is impacted.

CONTACT INFORMATION:
Erica Hamilton
Director, Communications
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Email: erica.hamilton@bcuc.com
Website: http://www.bcuc.com
Site C to provide more than 100 years of affordable, reliable clean power

VICTORIA – Premier Christy Clark announced today the Province has approved the Site C Clean Energy Project, concluding it will provide British Columbia with the most affordable, reliable clean power for over 100 years.

“Affordable, reliable, clean electricity is the backbone of British Columbia’s economy. Site C will support our quality of life for decades to come and will enable continued investment and a growing economy,” said Premier Clark.

B.C.’s population and economy are growing, and the demand for power is expected to increase by 40% over the next 20 years. Site C will be required even with BC Hydro’s ambitious Power Smart programs that are targeted to meet 78% of future electricity growth.

“British Columbia has the third-lowest electricity rates in North America and we need to meet our future needs in a way that keeps rates down,” said Bill Bennett, Minister of Energy and Mines. “It’s clear that to keep rates low, we must choose the option of building Site C.”

Over the first 50 years of Site C’s project life, ratepayers will save an average of $650 to $900 million each year, compared to alternatives - this amounts to average annual savings of approximately six to eight per cent for the typical household. The project will generate a century of low-cost power, providing enough electricity for about 450,000 homes per year – an eight-per-cent increase in supply to BC Hydro’s system in 2024.

As the third project on the Peace River, the firm energy it provides will support the development of more independent power projects (IPPs) by backing-up intermittent resources, such as wind. IPPs currently provide 25% of B.C.’s electricity and will continue to play a vital role in meeting the province’s energy needs.

“Site C is essential to keeping the lights on while maintaining low rates for our customers,” said Jessica McDonald, president and CEO of BC Hydro. “This project will build on the success of our existing hydroelectric system and benefit British Columbians for generations to come.”

The capital-cost estimate for the project has been updated to $8.335 billion, and government has also established a project reserve of an additional $440 million to account for events outside of BC Hydro’s control that could occur over an eight-year construction period, such as higher than forecast inflation or interest rates, for a total of up to $8.775 billion. The reserve is subject to provincial Treasury Board approval.

The project, which has undergone a thorough and independent multi-year environmental assessment process, will start construction in summer 2015 and will provide approximately
10,000 direct construction jobs.

“Today’s announcement is a historic milestone and we look forward to building this important provincial project,” said Susan Yurkovich, executive vice-president responsible for Site C. “We will continue to work with First Nations, communities and landowners to ensure that we deliver on our commitments and realize the many benefits of this project.”

To view backgrounders, please visit:

- Comparing the Options: http://www.newsroom.gov.bc.ca/downloads/Comparing_the_Options.pdf
- About Site C: http://www.newsroom.gov.bc.ca/downloads/About_Site_C.pdf
- Labour Requirements for Site C and LNG: http://www.newsroom.gov.bc.ca/downloads/Site_C_and_LNG.pdf

Media Contact:
Media Relations
Ministry of Energy and Mines
250 952-0628

Connect with the Province of B.C. at: www.gov.bc.ca/connect
BACKGROUNDER
COMPARING THE OPTIONS

Site C provides the lowest cost electricity compared to alternatives and will deliver significant benefits for ratepayers.

Hydroelectric Dams are Cost Effective

Large hydro projects are cost-effective because after an upfront capital cost, they have low operating costs for more than 100 years and their costs to ratepayers decrease over time.

Today, the cost of electricity produced by B.C. Hydro’s large hydroelectric facilities is far lower than the rate that residential customers pay for their power. BC Hydro’s large hydroelectric facilities offset the costs of other more expensive new generation in the system.

Site C will provide more than a century of the same affordable, reliable and clean electricity that the W.A.C. Bennett, Peace Canyon, Mica and Revelstoke dams provide today, and will help keep overall electricity costs down and rates low.

Site C - Significant Ratepayer Benefits

Like BC Hydro’s other large hydroelectric facilities, the cost advantages of Site C will grow over time, resulting in significant benefits to ratepayers, compared to alternatives.

Over the first 50 years of Site C’s project life, ratepayers will save an average of $650 to $900 million each year, compared to a portfolio of Independent Power Projects (IPPs) backed up by natural gas. This amounts to average annual savings of approximately 6 to 8 per cent for the typical household, compared to alternatives.
Over the long-term, as the capital costs of the project are paid down, the annual ratepayer savings will continue to increase each year for more than 100 years.

Impact on Ratepayers

The cost to ratepayers of the energy produced by a project depends on the capital costs as well as the ongoing operating costs and expected service life.

The cost to ratepayers for Site C reflects changes implemented as part of the government’s 10 Year Plan for BC Hydro, as well as the updated capital cost estimate.

<table>
<thead>
<tr>
<th>Site C Cost to Ratepayers (before changes)</th>
<th>$83 / MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under the 10 Year Plan, the amount of net income that BC Hydro is required to earn each year will now be tied to inflation and will no longer increase when new assets like Site C are added to the system.</td>
<td>- $26 / MWh</td>
</tr>
<tr>
<td>The 10 Year Plan also reduced water rental charges for BC Hydro.</td>
<td>- $1 / MWh</td>
</tr>
<tr>
<td>The capital cost estimate for Site C has been updated from $7.9 billion to $8.335 billion.</td>
<td>+ $2.25 / MWh</td>
</tr>
<tr>
<td>Government has established a project reserve of an additional $440 million to account for events outside of BC Hydro’s control that could occur over an eight-year construction period, such as higher than forecast inflation or interest rates. The reserve will be managed by the provincial Treasury Board.</td>
<td>+ $2.50 / MWh (if fully utilized)</td>
</tr>
<tr>
<td>Updated Site C Cost to Ratepayers</td>
<td>$58 - $61 / MWh</td>
</tr>
</tbody>
</table>
BC Hydro’s Integrated Resource Plan, approved in November 2013, calculated a cost to ratepayers for IPPs of $96 / MWh. Government also conducted extensive consultations with the independent power industry to ensure its analysis reflected recent advances in technology and efficiency. Following these consultations, government adopted a cost of $85 / MWh for IPPs in its analysis.

When considering the impact on ratepayers, the costs of delivering the electricity must be accounted for. In addition, as IPPs are intermittent, the cost of backing them up with firm energy sources (e.g., natural gas) must be included. Also, IPPs do not have the same ability to store energy and take advantage of high prices on the export market, which reduces trade revenues.

Accounting for all of these factors, the final cost to ratepayers is $64 to $67 / MWh for Site C and $110 to $130 / MWh for IPPs.

Contact: Jake Jacobs
Media Relations
Ministry of Energy and Mines and Responsible for Core Review
250 952-0628

Connect with the Province of B.C. at: www.gov.bc.ca/connect
1 year delay of Site C dam project would cost $630 million says BC Hydro

NDP wants to send the project to the province's utilities commission to review its economic viability

The Canadian Press Posted: Jun 07, 2017 11:56 AM PT Last Updated: Jun 07, 2017 11:56 AM PT

The president of BC Hydro says a one-year delay in the Site C hydroelectric dam project would cost $630 million, with construction in limbo as the NDP is poised to form a minority government in British Columbia in the coming weeks.

The NDP, which has signed a deal with the Green party to bring down Premier Christy Clark's Liberal government, wants to send the project in northeastern B.C. to the province's utilities commission to review its economic viability.

At a briefing on Wednesday, hydro president Jessica McDonald echoed previous claims by Clark on the cost of delaying, and said bids for contracts for the realignment of a highway are set to go out June 15 and a bridge construction tender is scheduled to be issued at the beginning of July.

McDonald says two homes—one owned by local farmers and the other a rental property—are in the direct path of the $8.8-billion dam.

NDP Leader John Horgan recently wrote to McDonald asking that the Crown corporation suspend the evictions for the two homes and urging it not to sign any new contracts for the project until a new government has gained the confidence of the legislature after last month's election.

On Tuesday, Clark sent letters to Horgan and Green Leader Andrew Weaver telling them the evictions are necessary as part of the road and bridge construction projects that are needed to divert a river in September 2019.

Weaver attended Wednesday's briefing in Victoria, a day after he and Horgan replied to Clark's letters questioning her claim that any delay could postpone the diversion by a year and cost taxpayers $600 million.

In April, 2017, a 120,000 signature petition opposing the construction of the Site C dam was delivered to the federal government. (Glen Kugelstadt/CBC)
The premier has asked Horgan and Weaver to reply by Saturday on whether they still want to put the evictions on hold. She says a decision to proceed must be made by June 15 in order to maintain the river diversion schedule.

In his reply, Horgan writes he was surprised to receive the letter from Clark.

"In it, you made unsupported claims about additional costs associated with asking BC Hydro not to sign major contracts until a new government takes office," he says.

"If you are truly concerned about this timeline, there is a simple solution: recall the legislature immediately and face a confidence vote so British Columbians can get the new government they voted for."

But Clark says the project is likely to progress past the "point of no return" before a review can be completed.

Clark didn't define what she meant, nor did she explain how she reached the $600-million figure in her letter. Her press secretary Stephen Smart referred questions to BC Hydro, which declined to answer them on Tuesday.

In his letter, Weaver says he requires access to supporting evidence, including signed contracts, the project schedule and potential alternative project timelines before he can comment on what Clark "asserts" are delays to the dam's construction.

"Your government is turning a significant capital project that potentially poses massive economic risks to British Columbians into a political debate rather than one informed by evidence and supported by independent analysis."