Dear [Name]:

Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act (File # NR-29-2019)

On March 4, 2019, the Department of Natural Resources received your request for access to the following records/information:

CD Howe study Information Note from January 2019.

I am pleased to inform you that a decision has been made by the Department of Natural Resources, confirmed by the Deputy Minister, to provide access to the requested records. The records are attached.

Please be advised that you may ask the Information and Privacy Commissioner to review the processing of your access request, as set out in section 42 of the Access to Information and Protection of Privacy Act (the Act). A request to the Commissioner must be made in writing within 15 business days of the date of this letter or within a longer period that may be allowed by the Commissioner.

The address and contact information of the Information and Privacy Commissioner is as follows:

Office of the Information and Privacy Commissioner
2 Canada Drive
P. O. Box 13004, Stn. A
St. John’s, NL. A1B 3V8

Telephone: (709) 729-6309
Toll-Free: 1-877-729-6309
Facsimile: (709) 729-6500

P.O. Box 8700, St. John's, NL, Canada A1B 4J6 t 709.729-1466
You may also appeal directly to the Supreme Court Trial Division within 15 business days after you receive the decision of the public body, pursuant to section 52 of the Act.

Please be advised that this letter will be published following a 72 hour period after it is sent electronically to you or five business days in the case where records are mailed to you. It is the goal to have the letter posted to the Office of Public Engagement's website within one business day following the applicable period of time.

If you have any questions, please feel free to contact me at 709-729-0463 or rhynes@gov.nl.ca.

Sincerely,

Rod Hynes

Rod Hynes
ATIPP Coordinator
Title: C.D. Howe's January 17, 2019 study on comparison of major Canadian hydroelectricity projects

Issue: To summarize C.D. Howe Institute's study "Damned if You Do: How Sunk Costs are Dragging Canadian Ratepayers Underwater" on comparison of costs of three Canadian mega hydroelectricity projects relative to the alternatives.

Background and Current Status:
- The C.D. Howe Institute (CD Howe) is an independent not-for-profit research institute. In addition to other functions, it provides a periodic analysis of, and commentary on, current public policy issues.

- CD Howe's study examines the cost-effectiveness of three large-scale hydroelectricity projects presently underway to see if it makes financial sense to finish construction, versus cancelling the projects and going for an alternative using the Combined Cycle Gas Turbine (CCGT). The projects include Site C on the Peace River (Site C) in northern British Columbia, Keeyask on the Nelson River in Manitoba (Keeyask), and Muskrat Falls (MFP) on the Churchill River in Labrador.

- Site C, owned and operated by British Columbia Hydro, will include a dam and a 1,132 MW hydroelectric generating station with total expenditures to date amounting to $2.1 billion, approximately 25 percent of the original budget as of December 2017. However, latest estimates place projected total costs at $10.7 billion with an expected completion date of 2024 up from $7.9 billion and 2020, respectively, as initially forecasted in 2010.

- Manitoba Hydro is developing the Keeyask, a 695-MW hydroelectric generating station. Since construction commenced in July 2014, expenditures have totaled $4.2 billion. However, the latest projected total costs are some $8.7 billion, with a completion date of August 2021, compared to $5.6 billion and 2019, respectively, as forecasted in 2011.

- The Muskrat Falls project will include an 824-MW hydroelectric generating facility and associated transmission lines connecting Muskrat Falls to both Churchill Falls and the Island. CD Howe states that Nalcor's June 2017 project update says the projected total cost of the project is $12.7 billion, with the project expected to generate first power by 2019, compared to $6.2 billion and 2017, respectively, as predicted in 2012.

- The analysis suggested that the CCGT was not a viable option for Newfoundland and Labrador as an alternative to finishing the MFP. The author concludes that present economics would favor cancelling Site C and Keeyask and replacing the respective capacity with equivalent dispatchable CCGT generation capacity. The report further concludes that the MFP is too far advanced to cancel based on relative economics and that finishing the MFP is the best option from an economic perspective.

- The study cites Nalcor's CEO as saying that termination costs for the Muskrat Falls project were so high and consequences so painful that such an undertaking was not even worth considering. The study has calculated the cancellation cost of the MFP to be $1.7 billion based on the estimated average cancellation cost per kW of Site C and Keeyask.
• The study notes that policymakers often justify proceeding with uneconomic projects due to the significant amount of money that has already been spent and politics make the decision to cancel (or defer) a project more difficult as some politicians perceive project terminations as an admission of failure. The study argues that the decision whether to proceed with a project should be determined by the yet-to-be-spent costs, instead of costs already spent.

• To determine whether the decision to continue construction of the above-mentioned projects is rational, the study calculated the go-forward cost for each of the three projects presented below. The Go Forward costs were compared with alternative approaches to meeting current electricity needs of each province.

<table>
<thead>
<tr>
<th></th>
<th>Site C</th>
<th>Keeyask</th>
<th>Muskrat Falls</th>
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<tbody>
<tr>
<td>Current budget</td>
<td>10.7</td>
<td>8.7</td>
<td>12.7</td>
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<tr>
<td>Current Expenditures</td>
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<td>8.2</td>
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<tr>
<td>Go forward costs</td>
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<td>4.5</td>
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<td>Date of assessment</td>
<td>Dec 31, 2017</td>
<td>Dec 31, 2017</td>
<td>Feb 28, 2018</td>
</tr>
</tbody>
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Analysis:
• CD Howe notes that the North American Power sector is changing rapidly: demand is slowing, storage is gradually becoming economic and decentralized power grids are becoming more feasible. Large-scale, centralized, long lead-time investments like hydro stations run the risk of becoming stranded assets that are no longer able to recover their costs. The study suggests smaller builds so that provincial utilities can better tailor future investments. Allowing utilities to spread the investment across the grid may also enhance reliability.

• The study notes that North American power markets are evolving: load growth has fallen and low cost natural gas has substantially reduced wholesale power prices, making US export markets likely to be significantly less lucrative in the future.

• The study warns that limiting the role of independent regulators results in false expediency. CD Howe recommends that institutional independence must be strengthened and notes that regulators are often bypassed in large investment decisions. According to the institute, it is critical that Canadian provinces develop a commitment to well-resourced, independent and empowered regulators.

Action to be taken:
• No action required.


Approved by: NOT APPROVED

January 23, 2019