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BY EMAIL AND COURIER

March 15, 2018

Ms. Cheryl Blundon
Director Corporate Services & Board Secretary
Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2
email: cblundon@pub.nl.ca

**Re: Newfoundland and Labrador Hydro ("NLH") 2018 Capital Budget Application
Revised Information pursuant to Board Order P.U. 43 (2017)**

Dear Ms. Blundon:

On February 16, 2018, IOC filed for intervenor status and stated its concerns about the filing by NLH on January 29 of the revised information pursuant to Order P.U. 43 (2017) with regards to the Muskrat Falls to Happy Valley transmission line ("**MFA-HVY line**").

On March 2, 2018, the Board granted intervenor status to IOC and the Labrador Interconnected Group ("**LIG**") considering the material impacts of the project on Labrador rates and their unique perspectives on the issues raised by NLH's application.

On March 6, 2018, NLH filed a number of responses to questions raised by the Board and LIG, many of whom were reiterated on March 13.

On March 9, 2018, the Board set an expedited schedule to address the application, later amended on March 14, at the request of LIG and IOC.

IOC hereby files its written comments with regards to the MFA-HVY line.

I. Impacts on Labrador rates

As stated in its intervention, the MFA-HVY line materially impacts the Labrador Industrial Transmission rate. Should the approval be refused or simply delayed, it is IOC's position, as more explicitly detailed in its comments filed February 16, 2018 on the NLH 2018 Approval of Industrial Customer 2018 Interim Rates application, that the current Labrador Industrial Transmission rate would remain unchanged¹.

¹ [www.pub.nf.ca/applications/NLH2018InterimRates/correspondance/From IOC - Comments - 2018-02-16.PDF](http://www.pub.nf.ca/applications/NLH2018InterimRates/correspondance/From%20IOC%20-%20Comments%20-%202018-02-16.PDF)

The Board accepted this argument²:

“In relation to the Labrador Industrial Transmission rate the Board notes that the proposed rate is 18% higher than current rates and results in a regulated billing impact of 13%. Further, the financial impact on IOC, the largest customer using this rate, is estimated to be \$618,156. The Board believes that the proposed increase in the Labrador Industrial Transmission rate is so high as to raise concerns in relation to rate shock. While Hydro suggested that the Board consider that regulated costs account for only 12% of IOC’s total forecast 2018 billings, the Board does not believe that it is appropriate to include unregulated energy charges in the rate impact analysis. The Board has no oversight of these charges and has no information as to whether these charges have recently changed or will change in the future.

Further, while Hydro submitted that the proposed rates are supported on the basis that the rates were designed to recover 70% of the increase in the 2018 cost of service similar to the proposals for the Island Industrial customers, the largest driver of the proposed increase in costs is the Muskrat Falls to Happy Valley-Goose Bay Interconnection project. This project has not yet been approved by the Board and has been contentious in both the general rate application and in the capital budget application. If this project does not proceed in 2018 the Board believes that the proposed Labrador Industrial Transmission rate may not be justified based on the costs on the Labrador Interconnected system. The Board also notes that, given that IOC uses 99.9% of the service provided under this rate and there is no opportunity for new customers to avail of this rate without a further Order of the Board, there are no concerns in relation to intergenerational equity. In the circumstances the Board finds that approval of the proposed Labrador Industrial Transmission rate has not been justified.” (Our emphasis)

II. Justification: load growth

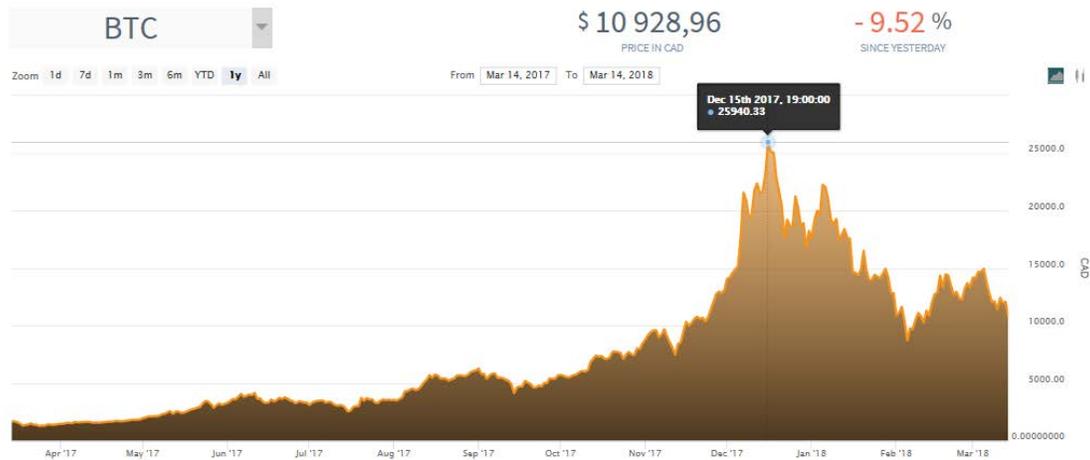
NLH’s justification of the MFA-HVY line was essentially driven, at first, by expectations of load growth, itself fueled by a conversion to electricity of equipment by the Department of National Defense (“DND”) and cryptocurrency miners often mistaken for data centers.

It appears from the evidence that NLH has not yet secured the load of the DND as its project has not yet received its final investment decision. It also appears that the remaining prospective load growth comes from a highly contentious category of customers, namely cryptocurrency miners.

This new demand from cryptocurrency miners is volatile³ and may not last as their market is in constant evolution as computers must be regularly replaced with more performing models and as their income varies with the value of the cryptocurrencies. As illustrated below, the value of the Bitcoin, the most famous of them, varied from 3,542.95 \$ on July 28, 2017 when NLH’s application was filed, to 25,940.33 \$ when it reached its peak on December 15, 2017 back to 12,474.37 on March 12 and finally 10,928.96 \$ today, a mere two days later.

² Board Order P.U. 7 (2018), page 6, lines 13 to 34.

³ Response LAB-NLH-007, page 1, line 21.



<https://coinsquare.io/markets/bitcoin> (March 14, 2018)

Faced with a new problem that emerged recently and may go as quickly as it came, IOC strongly believes that NLH should be tasked to find a shorter term solution that addresses this new reality. As a community of customers and utility, we otherwise take the risk of paying for the next 40 years for 19.1 m\$ of stranded costs⁴.

For IOC alone, building the MFA-HVY line without additional customers imposes a burden of 900,000\$ per year for the next 40 years, potentially in pure waste. Compared to the mere 60,000\$ contribution by such new customers to a 1.6m\$ per year increase to NLH's revenue requirement⁵, it is obvious that this rationale cannot be accepted.

Even the *de minimis* argument of NLH, in response to question d) of LAB-NLH-024 should be dismissed. The 60,000\$ is not the incremental cost to incumbent customers. It is 1.6m\$. The 60,000\$ is simply at the margin of this significant cost to Labrador customers, large and small.

III. Justification: reliability

In its recent additional information to the Board, NLH's stated focus moved from growth to reliability.

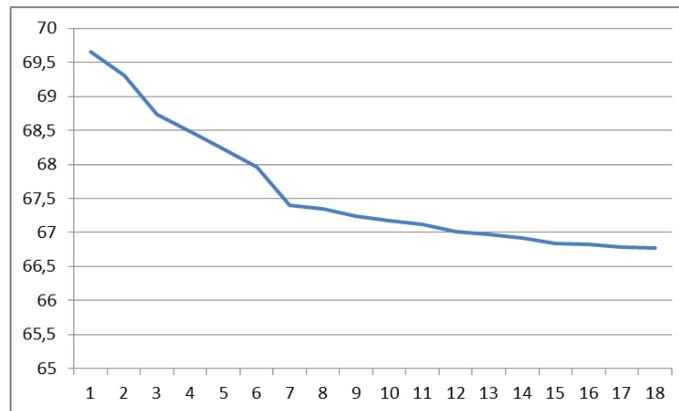
NLH takes the position that it must serve the very fine peak load of the system in all circumstances. This position does not give adequate weight to alternatives, including to the marginal cost of serving the last MW. While it is an adequate goal to improve service continuity to Happy Valley, it cannot be inferred that the current investment addresses it.

According to NLH's response LAB-NLH-008, this short duration peak serviced by L1302 on the Labrador East system lasts less than 10 hours per year. Looking at peak demand for the

⁴ Response LAB-NLH-024, page 2, line 4.

⁵ Response LAB-NLH-024, page 1, line 21.

last two years – most representative of the current customer base⁶ – we observe a sharp decline of about 3 MW in the first hours of the load duration curve⁷.



We understand from the record that the investment is to be triggered by the addition of a 7.6 MW coincident peak⁸ mostly from cryptocurrency miners to a system that can support a maximum load of 77 MW⁹. Then, if the peaks that may provoke a voltage collapse last a few hours per year, is a long term solution necessary¹⁰?

Even the new data centers customers did not show sign of concern over the current continuity of service¹¹.

IV. Recommendations

IOC recommends the Board to reject the NLH 2018 Capital Budget application relating to the MFA-HVY line for the time being.

NLH probably put the question best in its response to LAB-NLH-034:

“The issue [...] is one of a balance between reliability (i.e. unavailability and expected unserved energy) and the impact on rates (i.e. how much are the customers willing to pay to improve reliability)¹².”

As appears from comments filed, the customers clearly expressed the view that they are unwilling to pay for it.

Labrador customers seek to benefit from a sustainable economic growth in Labrador as well as an adequate continuity of service. The proposed MFA-HVY line fails to meet both objectives.

⁶ Attachment 1 – Responses to the Board, March 6, 2018, question 2, page 2, table 1.

⁷ Data from the NLH Excel spreadsheet attached to response LAB-NLH-008 from January 2016 to February 2018 inclusive, sorted by demand. X axis in hours, Y axis in MW. See also LAB-NLH-008, page 6, Table 1 indicating a leak load exceeding 67 MW declining to 1.5 hours in 2016-2017.

⁸ Response LAB-NLH-001, page 2, line 4.

⁹ Attachment 2 – Responses to the LIG, March 6, 2018, question 9, pages 3-4.

¹⁰ Attachment 2 – Responses to the LIG, March 6, 2018, questions 5, 6, 7 and 8, pages 2-3.

¹¹ Response LAB-NLH-017, page 1, line 6.

¹² LAB-NLH-034, page 1, line 23.

Cryptocurrency miners that do not pay for network additions would receive undue benefits from incumbent customers. They would receive an exceedingly large subsidy.

IOC is not against reliability, to the contrary, but this project is too expensive. Reliability will improve in the future when sustainable growth from new customers paying for the burden they impose on the system comes along.

Must NLH be equipped to address this new market? Yes and the Board has a role to play. The Board must first adopt a new Network Addition Policy, an issue before it in the pending NLH 2017 GRA¹³.

Meanwhile, NLH and the Board have in section 54 of the *Public Utilities Act*¹⁴ the tools required to protect all Labrador customers from the irreparable harm caused by the proposed MFA-HVY line.

“Duty of power company to supply electrical energy

54. [...]

(2) The power company before taking steps to supply the energy, and before supplying the energy or making a connection, or as a condition of the power company continuing to supply it, may require the owner or occupier to give reasonable security for the repayment of the costs of making the connection when those costs exceed \$50, and for the payment of the proper tolls for electrical energy and the rent of instruments.

(3) In the event of the power company and the owner or occupier failing to agree upon the nature or amount of the security to be given within 14 days from the date upon which the owner or occupier requires the power company to supply electrical energy, the amount of the security and the manner in which it shall be given shall, upon the application of either party, be determined by the board, and the board may make an order for security under this section for other matters that under the circumstances the board may consider just and equitable.

(4) The board may, for good cause and after hearing the interested parties, relieve a power company from the statutory obligation to supply electrical energy upon the terms and conditions that the board may consider appropriate and in the public interest.” (Our emphasis)

As mentioned by NLH, the application to approve the capital budget for the MFA-HVY line does raise policy issues¹⁵ including the need for equitable treatment of customers, including incumbent customers.

Rejecting the application and the MFA-HVY line in its current design, or postponing or conditioning its approval on an adequate Network Addition Policy does not imply that cryptocurrency miners will be discriminated. It only means that they will be asked to pay their

¹³ In addition to NLH’s response LAB-NLH-005, page 2, line 11, this issue is also before the Board in the NLH 2017 GRA.

¹⁴ Response LAB-NLH-028, page 1, line 11.

¹⁵ Response LAB-NLH-029.

fair share of the transmission system, or provide sufficient revenues to warrant investments in the transmission system to their benefit.

In fact, none of them have expressed any concern to NLH for doing so.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'B. Pepin', with a long horizontal stroke extending to the right.

Benoit Pepin
Director Energy, North America
Rio Tinto Aluminium
Counsel for IOC