

**IN THE MATTER OF** the Electrical Power Control Act, 1994, RSNL 1994, Chapter E-5.1 (the “*EPCA*”) and the *Public Utilities Act*, RSNL 1990, Chapter P-47 (the “*Act*”), and regulations thereunder;

**IN THE MATTER OF** Newfoundland and Labrador Hydro’s proposed Network Addition Policy;

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**Requests for Information**  
**by the Labrador Interconnected Group**  
**LAB-PUB-001 to LAB-PUB-012**

**January 6, 2020**

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**Requests for Information Regarding**  
**The Brattle Group Report dated November 19, 2019 on**  
**Hydro's Proposed Network Addition Policy**

**LAB-PUB-1. Re: Brattle Group Report, p. 7 (Fig. 1, third row); and pages 6 and 36;  
Raphals expert report dated April 25, 2019, page 26**

Citation 1 (Brattle Group, page 7, Fig. 1, third row):

Guiding Principle: Policy Differentiation Based on Size

Recommendations: Yes, no specific size recommendation

Citation 2 (Brattle Group, page 6 and page 36):

We recommend that new and requesting load over a size threshold be given a choice to either pay for the necessary network upgrades or choose an interruptible rate. (underlining added)

Citation 3 (Raphals, page 26) :

In its incremental load forecasts, Hydro distinguishes between “rural loads”, “industrial loads” and “data centre loads”. This reflects that fact, discussed earlier, that “data centre” loads differ in many fundamental ways from other types of loads. Indeed, it is because of them that the Board ordered Hydro to develop a Network Addition Policy in the first place. ...

**It is recommended that the NAP apply to industrial and “data centre” loads, but not to other rural loads.**

Preamble:

The Brattle Group report does not address the issue of policy differentiation based on size (or other characteristics) anywhere other than in its summary and recommendations sections.

- a) Is the Brattle Group making a positive recommendation that policy differentiation not be based on any load characteristics other than size (i.e., that all load additions of a similar size should necessarily be treated the same under the NAP), or is it simply declining to opine on this issue at this time?
- b) Does the Brattle Group agree with Mr. Raphals’ recommendation that application of the NAP should be limited to cryptocurrency and industrial customers, while exempting other rural loads? If not, why not?
- c) Is it the Brattle Group’s position that a municipally funded senior centre, for example, that exceeds the size threshold should have to choose between Option A (financial responsibility

for network upgrade costs net of future revenues) and Option B (curtailment during peak periods)?

- d) In each of the five jurisdictions canvassed by the Brattle Group (Alberta, British Columbia, New Brunswick, Ontario, Quebec, and Saskatchewan), do the NAPs protect domestic loads differently from industrial and cryptocurrency loads?

**LAB-PUB-2. Re: Brattle Group Report, p. 10; FERC Order 890, *pro forma* OATT**

Citation 1 (Brattle Group Report, page 10):

NAPs are tailored for specific contexts and frequently differ based on the interconnecting customer's location (e.g., transmission or distribution), customer type (e.g., generation or load), and size or customer end-use. Similarly, NAPs may vary between investments providing benefits to a single region or multiple regions. Thus, providing a benchmark between Hydro's existing and proposed NAPs is challenging and requires identifying similar contexts for comparison. As we understand that new loads are the driving factor to develop a new NAP, we have focused on reviewing Canadian NAPs focused on new load. To provide context on how interconnections, in this case, generator interconnections, are addressed by the FERC, we give an overview of existing policies. Given that Hydro's proposed NAP applies to non-utility generators as well as load, the FERC's generation interconnection policies are applicable to the case of Hydro. (underlining added)

Citation 2 (FERC Order 890 *pro forma* OATT):

**27 Compensation for New Facilities and Redispatch Costs**

Whenever a System Impact Study performed by the Transmission Provider in connection with the provision of Firm Point-To-Point Transmission Service identifies the need for new facilities, the Transmission Customer shall be responsible for such costs to the extent consistent with Commission policy. Whenever a System Impact Study performed by the Transmission Provider identifies capacity constraints that may be relieved by redispatching the Transmission Provider's resources to eliminate such constraints, the Transmission Customer shall be responsible for the redispatch costs to the extent consistent with Commission policy. (underlining added)

...

**32.4 Facilities Study Procedures**

When completed, the Facilities Study will include a good faith estimate of (i) the cost of Direct Assignment Facilities to be charged to the Eligible Customer, (ii) the Eligible Customer's appropriate share of the cost of any required Network Upgrades, and (iii) the time required to complete such construction and initiate the requested service. The Eligible Customer shall provide the

Transmission Provider with a letter of credit or other reasonable form of security acceptable to the Transmission Provider equivalent to the costs of new facilities or upgrades consistent with commercial practices as established by the Uniform Commercial Code. The Eligible Customer shall have thirty (30) days to execute a Service Agreement or request the filing of an unexecuted Service Agreement and provide the required letter of credit or other form of security or the request no longer will be a Completed Application and shall be deemed terminated and withdrawn. (underlining added)

- a) Please confirm that FERC has a long-standing transmission pricing policy, referenced in Order 890<sup>1</sup>, which specifically addresses network upgrades driven by transmission customers.
- b) Please confirm that, when network upgrades are required in order for a FERC-jurisdictional utility to provide service to a transmission customer, the customer is required to provide the Transmission Provider with security equivalent to the costs of new facilities or upgrades.
- c) Please explain why Brattle's review made reference to FERC's policy applicable to generator interconnections, but not to that applicable to transmission customers.

**LAB-PUB-3. Re: Brattle Group Report, pages 10 and 19.**

Citation 1 (p. 10):

The network addition policies for load in the six jurisdictions reviewed in Canada most commonly reflect the principle of cost causation, with network upgrades based on a "but-for" analysis, and include provisions for reallocation of costs if new customers join the system. ...

In five of six jurisdictions, customers are explicitly required to pay for some portion of the network upgrades. Importantly, these network upgrade payments are in addition to the standard transmission rates, which generally are treated as a separate stand-alone issue. (underlining added)

Citation 2 (p. 19):

The FERC's generation interconnection policies are developed to ensure open access to the transmission network and to further the goals of wholesale competition and allow generators to compete on an equal playing field. To that end, the FERC has two complementary policies: 1) in addition to the facilities needed for physically interconnecting the generation to the transmission network, interconnecting generation customers are responsible for financing network upgrades, with the financing refunded over a pre-determined time period; and 2) in terms of usage of the transmission network once the generator has been interconnected, transmission customers may be charged the "higher

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<sup>1</sup> E.g., FERC, Order 890, paras. 883 and 884.

of” the embedded cost rate (including network upgrades) or the incremental cost rate based on the required network upgrades.

...

The FERC’s “higher of” policy was outlined in its 1994 Transmission Pricing Policy:

In order to provide new or expanded transmission service, a utility may be required to add expensive transmission assets, which can result in an increase in rolled-in embedded cost rates. To address this possibility, the Commission has allowed a utility to charge transmission-only customers the higher of embedded costs (for the system as expanded) or incremental expansion costs, but not the sum of the two. (underlining added)

- a) Is the « but for » approach referred to above, used by five of the six Canadian jurisdictions surveyed, consistent with FERC’s transmission upgrade policy applicable to new loads?
- b) In the Canadian jurisdictions referred to in Citation 1, does the fact that network upgrade payments are in addition to standard transmission rates conflict with FERC’s « higher of » policy, which prohibits « and » pricing? If not, why not?

#### **LAB-PUB-4. Re: Brattle Group Report, pages 17-18**

Citation :

##### **5. Hydro-Québec (vertically integrated)**

The connection costs calculated by Hydro Québec are based on a system study and include a credit or “allowance” related to anticipated customer revenues on the system. Hydro Québec segregates the connection costs by size but applies the same general approach. Similar to other utilities, Hydro-Québec performs a study to determine the costs required for the customer's upgrades. The customer is responsible for the total costs less an allowance, calculated as a per kW charge(\$363/kW in the most recent report) multiplied by the anticipated demand. For the five years following the interconnection, Hydro Québec monitors the customers to ensure that the actual customer demand is at least the amount used to calculate the allowance.

Preamble :

Brattle references Hydro-Québec Distribution’s *Conditions of Service*, but not Hydro-Québec Transmission’s (TransÉnergie’s) Open Access Transmission Tariff, which includes an explicit network addition policy (Attachment J to the Tariff).

a) Please confirm that, while Hydro-Québec is a vertically integrated utility, it operates under a functional separation regime whereby HQ Distribution (“HQD”) and HQ Transmission (HQT, or TransÉnergie) are regulated separately by the Régie de l’énergie, whereas HQ Production remains unregulated.

b) Please confirm that HQ TransÉnergie’s OATT includes an explicit network upgrade policy, set out in Attachment J thereto.

e) Please explain the relationship between HQD’s upgrade policy described in the citation, and HQT’s upgrade policy as set out in the OATT.

**LAB-PUB-5. Re: Brattle Group Report, pages 24-25.**

Citation :

Hydro’s analogous policies for distribution level costs are more nuanced, with consideration of factors such as the primary beneficiary of network upgrades, whether the load is permanent or temporary, and whether the costs of upgrades are supported by anticipated revenues from the customer. As summarized in Figure 5, the distribution policy distinguishes between General Service and Residential Customers. For General Service Customers, load interconnection costs are treated as shared up to the anticipated revenues from a combination of the customer and other potential load growth connected to the upgraded facilities. Interconnection costs above that threshold are directly assigned to the customer and may be refunded if another customer connects within ten years.<sup>60</sup> Concerning upstream effects (i.e., network upgrades), the customer is not required to pay for upgrades previously identified within a five-year plan.<sup>61</sup>

**Figure 5: Summary of Hydro’s Current Transmission and Distribution NAPs**

	Transmission	Distribution Contribution in Aid of Construction (“CIAC”)
Specifically Assigned Assets	<ul style="list-style-type: none"> <li>Costs related to assets that benefit only one customer and are deemed to be “material” resulting from a facilities study</li> <li>Upgrades with “local” impacts may be allocated between multiple requesting customers</li> </ul>	<ul style="list-style-type: none"> <li>Dependent upon whether the load is temporary or permanent and if primary benefits accrue to requesting customer or other ratepayers; Hydro will not consider paying for an investment if the customer will have electric service for at least three years</li> <li>For permanent customers, assets are not treated as specifically assigned; upgrade costs are calculated according to the description in row labelled “Upgrade Cost Required from Customer.”</li> </ul>

Preamble :

Note 60 in The Brattle Group’s Report references Hydro’s CIAC Policies for Domestic and General Service customers.

- a) Please clarify the highlighted passage in the citation from Figure 5, by outlining more precisely The Brattle Group's understanding of how upgrade investments would be treated for loads of less than and more than 3 years;
- b) Please provide copies of the Hydro CIAC Policies for Domestic and General Service customers referred to by The Brattle Group in Note 60, or provide links to these documents on Board or Hydro websites;
- c) Please explain, to the best of The Brattle Group's understanding, how the Distribution and Transmission policies shown in Figure 5 would interact in the case of a new customer for which both distribution and transmission investments would be required in order to provide service.

**LAB-PUB-6. Re: Brattle Group Report, pages 3, 8 and 33, and p. 7 (Fig. 1, last row)**

Citation 1 (page 8) :

Cryptocurrency customers are relatively unique in their demand density (i.e., small facility with high electrical loads) combined with potential impermanence.

Citation 2 (page 3):

The Hydro-Québec, Washington PUDs, and New York rate classes include rate increases relative to similarly-sized customers in non-cryptocurrency rate classes.

Citation 3 (page 33):

Requiring customers to be responsible for the cost[s] their actions and decisions cause ensures that the customer makes correct economic decisions. Under cost causation principles, decisions to connect to Hydro's network or to increase demand are based on whether the value and the benefits the customer receives exceeds the costs that Hydro incurs to provide the connection and the needed upgrades. This calculus is necessary to ensure the proper allocation of scarce economic resources. In this particular case with the emergence of data centers/cryptocurrency mining sites to the region, customers must be exposed to the costs that their decisions impose on the Hydro network. Key characteristics of data centers/cryptocurrency customers are that they have large energy demand requirements, have uncertain permanency given their mobility, lack sunk costs into the local economy, and have the mobility to enter and exit geographic markets that are served by different electricity companies with different tariffs and NAPs. Electricity supply is a crucial input for these customers, and they are vulnerable to the "boom and bust" cycles of global cryptocurrency market conditions and prices. Serving these customer types is risky and requires economically efficient costing and price signals to ensure the attainment of appropriate decision-making and economic efficiency.

A corollary of the cost causation principle, and one that we believe is good regulatory policy, is protecting existing customers from costs that they did not cause and that are caused by new customers. This is sometimes known as a “hold harmless” policy and is the basis of the FERC generation interconnection policy discussed previously. Two other regulatory principles and general regulatory practices that play a role in guiding our overall analysis and recommendation on this topic are the practice—and in most cases requirement—that whatever policy is implemented should not be unduly discriminatory and should not result in significant and dramatic changes in customer rates, i.e., rate stability and prevention of “rate shock”.

The current NAP, as it pertains to directly assigned facilities, is generally consistent with cost causation principles, as the customer causing the facilities that are dedicated to it is responsible for the full costs. As it pertains to network upgrades related to new customer connections, however, or increases in existing customer load, the current NAP fails to reflect cost causation principles. Existing customers who do not cause the network upgrades pay the vast majority of the network upgrade costs, as the cost causer is assigned a relatively small share of the costs, a share that is in proportion to its demand requirement relative to the entire system demand. Existing customers are particularly vulnerable to being responsible for 100% of the network upgrade if the cost-causing customer leaves Hydro’s territory and locates somewhere else or shuts down operations entirely.

Concerning undue discrimination, the current NAP fares well in this regard. While we believe the policy fares poorly in respect of cost causation, the current policy applies to all customer classes equally; there is no special treatment or consideration given for any particular group of customers. As it pertains to rate stability and rate shock considerations, the current NAP fares poorly as the potential impact on customer rates from the increased load growth is significant. Load growth that is “primarily due to the arrival of data centers/cryptocurrency mining sites to the region” is the reason for proposing a new NAP. (underlining added)

Citation 4 (Brattle Group, page 7, Fig. 1, last row):

Guiding Principle: Separate Cryptocurrency Class in NAP

Recommendations: Not at this time, possibly appropriate pending experience with new NAP

- a) Citation 3 makes reference to “undue” discrimination. Where significant distinctions exist between customer groups, does differential treatment necessarily constitute “undue” discrimination?
- b) In the Brattle Group’s view, given the unique characteristics of cryptocurrency customers (Citation 1), does the application to them of certain conditions — such as those described in the Appendices of the Brattle Group’s report and in Citation 2 (“rate increases relative to similarly-sized customers in non-cryptocurrency rate classes”) — necessarily constitute undue discrimination?



- c) The recommendation in Citation 4 states with respect to a cryptocurrency class within the NAP: “Not at this time, possibly appropriate pending experience with new NAP”. Please explain the reasoning underlying this recommendation.
- d) Please confirm that the recommendation in Citation 4 is limited to the possibility of adding a separate cryptocurrency class within the NAP, and does not address the possibility of adding a separate cryptocurrency class in general. In either case, please specify:
  - i. What other conditions would need to be in place before Brattle would recommend a cryptocurrency class within the NAP?
  - ii. What other conditions would need to be in place before Brattle would recommend a cryptocurrency rate class?
  - iii. How long should the Board wait before revisiting this issue?
  - iv. What experience with the new NAP would Brattle be looking for either measure would be appropriate?
- e) In the Brattle Group’s view, does Hydro’s proposed NAP provide sufficient protection to existing customers from risks resulting from serving additional cryptocurrency loads in Labrador?
- f) In the Brattle Group’s view, would adopting The Brattle Group’s recommendations with respect to the NAP provide sufficient protection to existing customers from risks resulting from serving additional cryptocurrency loads in Labrador?
- g) How should the Board:
  - i. determine whether or not the NAP it eventually adopts in fact provides sufficient protection to existing customers from risks resulting from serving additional cryptocurrency loads in Labrador, and
  - ii. in the event that it does not provide sufficient protection, determine what other measures may be appropriate?

**LAB-PUB-7. Re: Brattle Group Report, pages 6 and 35**

Citation 1 (page 6):

We find the approach that all requesting customers must pay an upstream connection charge even if there are no network upgrade costs required and Hydro “banking” the funds until they are needed to be uncommon in our survey of jurisdiction’s NAPs. (underlining added)

Citation 2 (page 35):

Looked at it another way, the Upstream Capacity Charge is not tied to the actual costs that Hydro incurs to upgrade the network charge to accommodate the request of the cost-causing customer. It serves as a form of “banking,” essentially lending Hydro the money until it makes the upgrades. We find this approach uncommon in our review of regulatory jurisdictions, not in line with our view of cost causation principles and complicating the problem needlessly. (underlining added)

Has Brattle identified any regulatory jurisdictions in which new customers are charged a network upgrade cost based on future expansion costs? If so, please identify them.

**LAB-PUB-8. Re: Brattle Group Report, p. 35.**

Citation:

The proposed policy does protect existing customers compared to the current NAP, where all non-dedicated assets are socialized and fully paid by all customers, including those customers not responsible for the costs. The policy helps achieve rate stability and helps prevent rate shock for existing customers who are not responsible for the network upgrades. The policy may, however, lead to unnecessary one-time charges for customers who are not causing network upgrade costs. Further, the funds paid through the Upstream Capacity Charge may not be spent for a long time. We do not believe these charges are consistent with rate stabilization and prevention of rate shock for those customers.

- a) Has Brattle identified any other regulator that allows a utility to assess contributions to pay for transmission investments that will not take place until many years later, if ever? If so, please identify them.
- b) Does Brattle consider a policy that allows a utility to assess contributions to pay for transmission investments that will not take place until many years later, if ever, to be consistent with the basic principles of utility regulation? Please elaborate.
- c) Is Brattle aware of any other system in which new customers that use remaining available capacity in an existing system are assessed a network upgrade charge? If so, please provide details.
- d) Does the Brattle Group agree with Hydro’s approach of basing network upgrade costs on an Expansion cost/kW, based on its Transmission Expansion Plan? If not, why not? If so, please also indicate Brattle’s perspective concerning:
  - The use of P50 vs. P90 load forecasts, and
  - The use of advancement costs vs. total upgrade costs.
- e) Does the Brattle Group consider that Hydro’s proposal adequately addresses the uncertainty in its underlying load forecasts? If so, why? If not, why not?

- f) In the event that the Board does approve the NAP as proposed by Hydro, does the Brattle Group agree with Mr. Raphals' recommendation that the Transmission Expansion Study require explicit and regular approvals by the Board?

**LAB-PUB-9. Re: Raphals Supplemental Report, dated June 21, 2019, pages 2-6.**

Citation 1 (pages 2-3):

FERC is indeed very flexible about some things, but not about others. It is important to be clear which is which.

...

Regarding charges for network upgrades, Order 890 showed no flexibility at all, as seen in paragraphs 870-885, which rejected calls for modification to the iron-clad requirement regarding incremental rates ...

Citation 2 (pages 4-6):

In the present case, CAEC and Hydro fail to distinguish between:

- a) Network upgrade policies carried out by a jurisdictional utility applying its own FERC-compliant OATT;
- b) Network upgrades that create benefits in other regions, in particular those governed by RTOs or ISOs; and
- c) Transmission planning procedures.

Case a) is governed by Order 890 and the many following orders that implemented it. Network upgrades are directly assigned to the customer that required them, based on a "but for" analysis, described below. CAEC has not advanced any references indicating that FERC shows flexibility in this regard.

...

Of these three policy areas, a) is the only one which is relevant to Hydro's NAP. While FERC left considerable flexibility and room for regional differences in b) and c), it did not do so in a). It is thus misleading to invoke this supposed flexibility, as it is not relevant to the case at hand.

The "but for" analysis that FERC to this day applies to the question of network upgrades under an OATT is well described in a recent Order concerning the Southwest Power Pool (SPP). ...

When such an upgrade subsequently allows the provision of service to a new customer which would not have been possible "but for" the upgrade, SPP's

OATT provides revenue credits to the party to whom the upgrade was directly assigned:

3. ...The directly-assigned network upgrade costs are recoverable, with interest, from customers taking new transmission service that could not have been provided “but for” the Creditable Upgrade in the form of credit payment obligations, until the amount owed to the upgrade sponsor (i.e., the transmission customer or generator interconnection customer) that was directly assigned the costs of the Creditable Upgrade is zero.<sup>3</sup> (underlining added)

Thus, at each step, the “but for” analysis is critical. The full costs of the upgrade are directly assigned to the new customer if they would not have been required “but for” its service request. And, to avoid the free rider problem and the disincentive that would result from making the party that moves first shoulder the full cost of the upgrade, future users will be obliged to reimburse the first mover for a share of those costs, if it would not have been possible to provide service to the future user “but for” the upgrade directly assigned to the first mover. This is FERC’s solution — within the framework of an OATT for network upgrades which do not raise inter-regional issues — to the concern raised by CAEC on page 4 of the Memorandum, where it wrote:

To summarize, the notion of *beneficiary pays*-based cost allocation generally improves upon the comparatively rough justice associated with load-ratio share or various notions of *the load that triggered the investment pays the full freight*-basis of cost allocation when applied in cases where benefits accrue broadly across many loads.

(underlining added)

- a) Does the Brattle Group agree with Mr. Raphals’ assessment of FERC’s flexibility with regard to network upgrade policies carried out by a jurisdictional utility applying its own FERC-compliant OATT? If not, why not?
- b) Does the Brattle Group agree with Mr. Raphals’ view, expressed in Citation 2, that FERC addresses the « free rider » problem by using “but for” analysis to determine which future users should contribute to reimbursing the first mover? If not, why not?
- c) In the Brattle Group’s opinion, should the Board apply the approach described in Citation 2 to ensure that future customers that benefit from a transmission upgrade paid for by a new customer also contribute to its costs? If so, how does it suggest that such an approach be integrated into the NAP? If not, why not?

### **LAB-PUB-10.Re: Brattle Group Report, pages 36-37.**

Citation:

We have four recommendations concerning the proposed NAP:

1. We recommend modifying the NAP to more completely reflect the

goal of cost causation. We recommend that new and requesting load over a size threshold be given a choice to either pay for the necessary network upgrades or choose an interruptible rate. Specifically, we recommend the following high-level choices:

- Option A: Be financially responsible for the network upgrades that exceed the customers' anticipated revenues over some fixed period and providing security equal to the anticipated revenues;

or

- Option B: Adopt an interruptible rate, which avoids those transmission costs. This choice requires assessing the appropriate level of curtailability/interruptibility to ensure that existing customers do not experience any reduction in the current reliability level.

Preamble:

Recommendations 2 through 4 apply only to customers that choose "Option A" from Recommendation 1.

- a) Would Brattle agree that it is in fact making a single primary recommendation; namely, "that new and requesting load over a size threshold be given a choice to either pay for the necessary network upgrades or choose an interruptible rate", and that the remaining recommendations provide additional detail regarding this primary recommendation? If not, please explain how Recommendations 2-4 could be implemented if Recommendation 1 is not retained by the Board.
- b) Is the Brattle Group's recommendation to modify "the NAP to more completely reflect the goal of cost causation" limited to the addition of the choice between Option A and Option B (Recommendation #1), and the additional recommendations for those that choose Option A (Recommendations #2 through #4)? More specifically, please indicate whether the Brattle Group also recommends adopting, modifying or eliminating each of the following elements of Hydro's NAP as described in sections IV.B. and V.A. of the Brattle Group report:
  - i. The "banking" implicit in Hydro's proposed Upstream Capacity Charge;
  - ii. The revenue-based investment credit, offered to industrial customers only; and
  - iii. The benefit for reductions to expected unserved energy (EUE), based on the approximate cost of projected gas turbine fuel use.
- c) For Option B, how would Brattle recommend addressing a situation where the level of curtailability/interruptibility required to ensure that existing customers do not experience any reduction in the current reliability level changes over time? Assume, for example, that at the time the new customer comes on line, curtailment over 300 hours per year is sufficient to avoid the need for new transmission resources, but that, ten years later, the peak period has broadened such that, without curtailment, available transmission capacity would be exceeded during 310 hours. Should the curtailment requirements be reassessed periodically, or set in stone when the customer is first accepted for service?

- d) Is the Brattle Group explicitly recommending that the choice between Option A and Option B be mandatory for all loads “over a size threshold”, or is it open to the possibility that this choice should only be required of certain categories of loads?
- e) Does the term “network upgrades” in Brattle Group Recommendation #1 (choose between Option A and Option B) refer only to the transmission system, or might it also include upgrade costs related to the distribution system, above and beyond any such costs that could be directly assigned to the new customer? If the former, how does the Brattle Group propose that existing customers be protected from additional distribution system costs resulting from a new customer?
- f) Please indicate the types of customers covered by the network upgrade policies described in section III of the Brattle Group report, for each of the six Canadian jurisdictions and the US federal jurisdiction surveyed, distinguishing between: transmission (wheeling) customers, industrial customers taking service at transmission vs. distribution voltages, cryptocurrency customers and other retail customers.

**LAB-PUB-11.Re: Brattle Group Report, page 36.**

Citation:

Option A: Be financially responsible for the network upgrades that exceed the customers’ anticipated revenues over some fixed period and providing security equal to the anticipated revenues

Preamble:

The following alternate wording for Option A may more clearly express the Brattle Group’s proposal:

Be Taking financially responsible liability for the costs of network upgrades that exceed ~~the customers’~~ Hydro’s anticipated revenues from the new customer for transmission service over some fixed period, and providing security equal to the anticipated revenues.

Does the Brattle Group agree with the proposed alternate wording?

**LAB-PUB-12.Re: Brattle Group Report, page 37.**

Citation:

4. For customers that select Option A, these customers paying for network upgrades should be eligible for additional refunds as additional customers join the system over a pre-determined time horizon. This permits sharing among new customers of network upgrade costs. (underlining added)

Please elaborate on the proposed treatment of refunds in relation to additional customers that join the system over a pre-determined time horizon. In particular :

- a) Does the term “additional customers” in the citation refer specifically to new customers that rely directly upon the network upgrade, or to all new customers? If the former, please explain how it is proposed to determine which elements of the network upgrade are relied upon by which new customer. If the latter, is the Brattle Group proposing that customers that required a network upgrade in Labrador West obtain refunds from new customers based on Labrador East, and vice versa? If not, please explain how the proposed system would function.
- b) Is the Brattle Group proposing that the “additional customers” also be required to make capital contributions to the cost of prior network upgrades without which it would not have been possible to provide service to them? Or is it simply proposing that the customer that funded the network upgrade obtain refunds based on the regular transmission tariffs paid by the new customers? Please explain.