

May 4, 2020

Mr. Patric Wruck
Commission Secretary and Manager Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Sir,

**Re: Project No. 1598990
BC Hydro F2020-F2021 Revenue Requirements Application
Edlira GJOSHE – Final Argument**

First, I would like to extend my many thanks and deep appreciation to the Commission for having allowed me to participate in this important regulatory process, representing myself, and more broadly unstructured interests of BC Hydro ratepayers at large.

In accordance with the Commission's timetable as per BCUC Order G-63-20, please find enclosed the Final Argument of MS. GJOSHE, in this matter.

All of which is respectfully submitted.

Sincerely,

Ms. Edlira Gjoshe
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236-788-5293

Excerpts from BCUC Order G-63-20

In consideration of the impact of the global pandemic COVID-19, enclosed please find order G-63-20 amending the regulatory timetable.

In addition, the Panel requests that parties' final arguments include its position and rationale for the following:

1. Whether the Peace Region Electric Supply (PRES) project meets the requirements to be considered a prescribed undertaking under section 18 of the *Clean Energy Act*, pursuant to section 4(2) of the Greenhouse Gas Reduction (Clean Energy) regulation;
2. Whether the Minette Station to LNG Canada Interconnection project meets the requirements of the Transmission Upgrade Exemption Regulation, as amended by B.C. Reg. 160/2018 to exempt the project from Part 3 of the *Utilities Commission Act*; and
3. Whether British Columbia Hydro and Power Authority's investments in electric vehicle charging infrastructure should be included in rate base during the current test period and recovered from ratepayers or be separately tracked and excluded from rate base until the British Columbia Utilities Commission directs otherwise, given the developing landscape of the electric vehicle charging stations market in B.C.

Evidentiary Update Information as the Basis for Test Period Rates and Consideration of New Information (Re: COVID-19)

In its Conclusion of the Final Argument, BC Hydro states¹: “BCUC should find that the Evidentiary Update remains a reasonable basis upon which to base Test Period rates.” I agree with BC Hydro on its *reasonableness*, largely on account of the length of this regulatory process- the fact that we are already in the second year of the Test Period; and on account of the perceivable added strain on BC Hydro’s own employees and activities from dealing with the global-wide disruptions caused by the COVID-19 pandemic.

Notwithstanding the above, in the arguments proceeding its Conclusion, BC Hydro asserts²: “BC Hydro’s regulatory accounts are an efficient means of addressing new developments and changes from the Cost of Energy and finance charge assumptions reflected in the Evidentiary Update. This includes revenue-related developments due to COVID-19 that have occurred since the hearing record closed, and will continue to unfold in the coming months.” This statement suggests that BC Hydro contends that the construct of BC Hydro’s regulatory accounts such as when they were first conceived, did in fact foresee the handling of operational disruptions and/or financial shocks of magnitudes as being witnessed of those arising from the COVID-19 pandemic.

I respectfully submit, that it is highly unlikely that BC Hydro’s regulatory accounts were intended to absorb such shocks as might arise from unprecedented periods of “wholesale” shutdowns of provincial economic activity and the associated financial fallout. Neither, should they be used to such effect, as BC Hydro suggests.

I also respectfully submit, that as rate setting is a prospective process it is probably incumbent upon it to err on the side of caution and consider new information, *if* such information could have an oversized bearing on the decision at hand *where* recent wide-ranging developments have the potential to significantly impact a number of heavy-weight elements of the Revenue Requirements in the second year of the Test Period.

Without doubt, the Commission faces an unenviable conundrum on whether to consider new information on account of both the length of this regulatory process and the challenges that lie ahead. I wish both parties- the Commission well in its determination, and- BC Hydro well on its outcome.

Recommendation: I encourage the Commission to consider new information *if* it so deems appropriate, in its pursuit of the science and *art* of rate setting.

¹ BC Hydro Final Argument, Page 255, Paragraph 600 (Conclusion).

² BC Hydro Final Argument, Page 4.

Commission Jurisdiction on Large Capital Projects

In this section, I revisit some past discussions regarding Commission jurisdiction on BC Hydro's Capital Projects.

In its determination on BC Hydro's F2017-2019 Revenue Requirements Application, the Commission offered³:

"Capital spending directly affects finance charges and amortization, and indirectly affects operating costs. As such, capital spending is one of the largest factors affecting BC Hydro's revenue requirement."

"Notwithstanding BC Hydro's position on when it perceives it necessary to file a CPCN, the Panel retains its legislative mandate under section 45(5), where appropriate. The Panel reviews large planned projects to identify projects that have potentially significant public interest issues requiring further investigation through separate CPCN review processes."

During the Oral Hearing proceedings the Commission signalled similar intent in for reviewing capital projects such as GRR projects, captured, amongst other, in the following exchanges:

THE CHAIRPERSON⁴: "I just want to talk about a couple of other things, your GHG -- greenhouse gas, GRR projects, whether a project falls under the GGR is a legal question, I think is a fair way to phrase it."

MR. O'RILEY⁵: "Yes."

THE CHAIRPERSON⁶: "And if it doesn't, then the costs of recovery are -- you know, don't necessarily come from ratepayers, it would depend upon the regulatory justification for the costs. Now, there are utilities in British Columbia that come to us prior to embarking on a GGR project to have an -- what I guess in essence is an advanced ruling on whether the project would qualify under the GGR and if it does, then of course, our approach is then hands off and the recovery is from ratepayers." But that doesn't seem to be your practice. So I'm interested in why your practice is different and how can we approach this? Because I think, the Commission, we want to review those projects and we would like to confirm that they do qualify for inclusion, but the way that it's structured now you're already part through or possibly finished the project and that then doesn't give you the opportunity to possibly adjust the project if our finding was -- well, no, it

³ Commission Order G-47-19, Page 39 of 118, Section 'Commission determination', Paragraphs 1 and 2.

⁴ Transcript 6, Page 742, Lines 10-13.

⁵ Transcript 6, Page 742, Line 14.

⁶ Transcript 6, Page 742 Lines 16-26 and Page 743 Lines 14.

doesn't but, you know, if you tweak this this and tweak that then it probably would. Doing an after-the-fact review would preclude our ability to do anything like that. I just wondered on your comments on that.”

MR. O'RILEY⁷: “You know, I don't think we'd be adverse. I mean, the idea of an advanced ruling seems to make sense to me. I know it felt like a little bit of talking past each other in this PREZ situation through the IRs, about whether it was or wasn't and I think we could have been more clear in the documentation about that.”

In addition to potential for significant public interest issues, certain planned large transmission projects may pose challenges as it concerns interpretation and/or application of BC Hydro's Tariff Supplement No. 6 (TS6) – a somewhat recently 'latent' but long-standing issue with BC Hydro's major intervener groups, which was last tested in the regulatory realm in 2012, as part of the proceedings for the Dawson Creek-Chetwynd Area Transmission (DCAT) project. The TS6, as it presently stands was written in the 1990's and questions persist as to whether it has stood the test of time.

Recommendation: I urge the Commission Panel to use its legislative mandate, as appropriate, to review upcoming large transmission capital projects such as the Peace Region Electric Supply (PRES) project, the Interconnection project for LNG Canada Phase 2, and the North Montney project, among others, in order to discern potential matters of significant public interest on account of their complexity, magnitude (i.e. cost), and ratepayer risk.

Peace Region Electric Supply (PRES) Project:

On “whether the PRES project meets the requirements to be considered a prescribed undertaking under section 18 of the *Clean Energy Act*, pursuant to section 4(2) of the Greenhouse Gas Reduction (Clean Energy) regulation”, I offer no legal opinion. However, I offer the following discussion in the hope that it will help inform Commission deliberations on this matter:

- a) As BC Hydro's Mr. O'Riley mentioned in his testimony⁸, BC Hydro has been working for years with upstream oil and gas customers to take up supply on the PRES line. In Mr. O'Riley's words, despite these efforts, “it's been slower than we would have liked” and that “the market up there is tough for the gas producers *right now* and they have deferred their investments”. In circumstances of slowing customer appetite for service uptake on the PRES line (even prior to the disruptions brought about by

⁷ Transcript 6, Page 743, Lines 15-21.

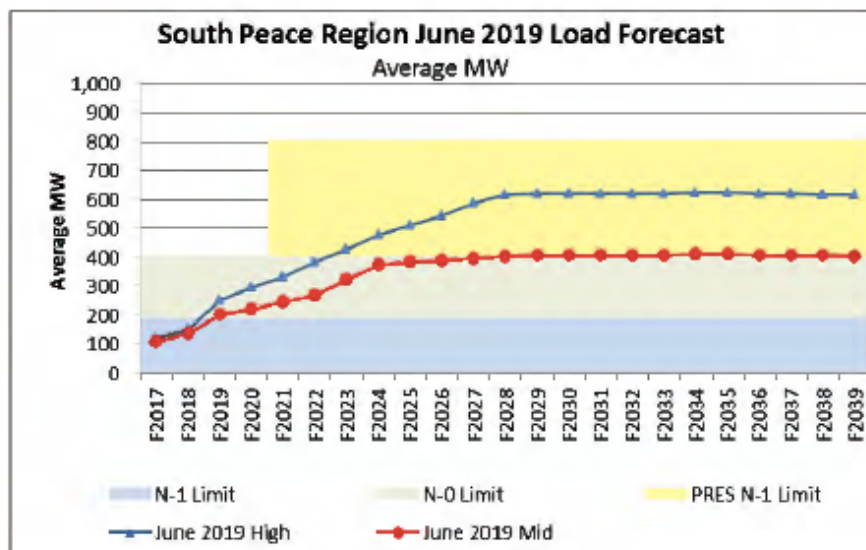
⁸ Transcript Volume 5, Transcript Page 515, Lines 8-19.

the COVID-19 pandemic) it is unclear on what basis BC Hydro ascertains that the PRES project presently meets the *cost-effectiveness* test of a prescribed undertaking.

- b) In Round 2 of Information Requests, Commission staff probed the drivers for the PRES project through IR's BCUC 2.250.1 to BCUC 2.250.8. In response to BCUC IR 2.250.7⁹, BC Hydro explains that one of the two new 230-kV circuits being contemplated as part of the PRES project solution, will increase N-1 reliability to existing oil and gas customers. It is fair to conclude that there would be little or no GHG reduction arising from the component of PRES project spend related to increasing N-1 reliability to existing customer operations. BC Hydro has been *silent* on this component of the PRES project cost estimate for which no discernable or material GHG reductions would arise.
- c) In Round 4 of Information Requests, in response to CEABC 4.59.2¹⁰, BC Hydro provided the following graph of the load forecast for the South Peace region (in the area to be served by PRES), based on average MW forecasts (as opposed to peak MW forecasts).

The figure below provides the requested information from the June 2019 Load Forecast in average annual MW.

Average annual MW was calculated by dividing annual energy (MWh) by the total number of hours in a year (8760). The difference between average MW and peak demand is due to plant load factor.



I observe, that on an average MW basis, the June 2019 Mid load forecast for the entire 20 year period of the forecast, does not surpass the level of

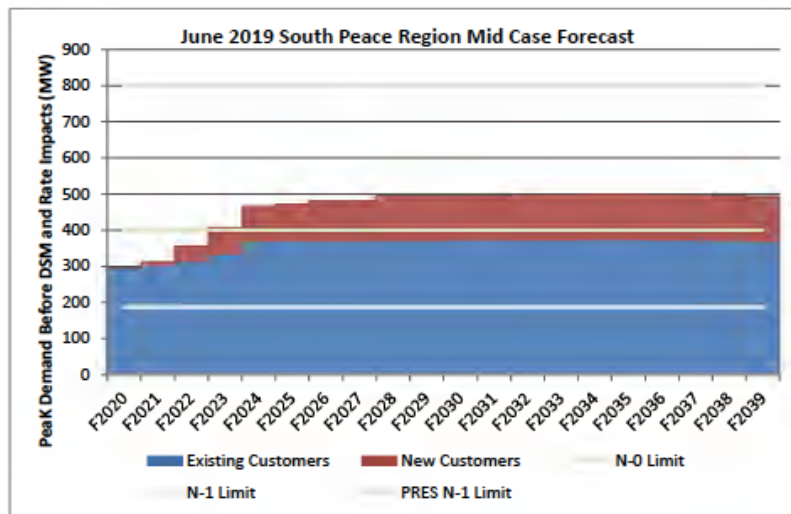
⁹ Exhibit B-12, PDF Page 512.

¹⁰ Exhibit B-23-2, CEABC 4.59.2, PDF Page 6.

South Peace region load that may be sufficiently supplied through the present system capability (i.e. DCAT) on an N-0 basis (approx. 400 MW). As part of BC Hydro's comments to the graph, BC Hydro notes that "some existing plants are decreasing production i.e. both average MW and peak MW demand are decreasing". Further during the Oral Hearing sessions, BC Hydro's Mr. Rich added¹¹: "We're seeing -- it's interesting, *this is a bit of a new phenomena for this year*, but this is the first time where a couple of the producers, the shale gas producers saying: we are temporarily reducing production because of prices." Such a trend of declining electricity consumption from existing natural gas operations will probably continue for the foreseeable future, on account of the more recent collapse in global demand for energy products and related commodity price shocks associated with the COVID-19 pandemic.

- d) In Round 4 of Information Requests, in response to GJOSHE 4.1.4¹² BC Hydro offered the following graph of the South Peace region load forecast based on the June 2019 Mid case:

The figure below shows the existing load (including load growth associated with existing customers) and new customer load growth. The data provided is before adjusting for Demand-Side Management (DSM) savings and rate impacts.



It provides the breakdown of forecasted load as between existing customers and new customer activities. It suggests that of the 600MW of additional capability to be provided by PRES, only a third (approx. 200MW) will be taken up by load growth over the course of the next 20 years, and most of it (approx. 120MW) owing to new customers. Any material under-delivery in natural gas sector investments in the years ahead (mid term) on account of the recent collapse in global demand for

¹¹ Transcript 8B, Page 1314, Lines 1-6.

¹² Exhibit B-23-2, GJOSHE 4.1.4, PDF Page 26.

energy products and related commodity price shocks, will result in an oversized negative impact on PRES project revenue and ratepayer risk.

- e) Section 4(2)(b) of the Greenhouse Gas Reduction Regulation, establishes a prescribed undertaking as one which “the public utility reasonably expects, on the date the public utility decides to carry out the undertaking, that the facility will have an in-service date no later than December 31, 2022”. As the PRES project is still in the planning stages; and, at a time of slowing natural gas customer proclivity for electrification of their processes; and given that the energy sector business sentiment has since, further deteriorated on account of the collapse in global demand for energy products and related commodity price shocks associated with the COVID-19 pandemic, it is unlikely that project drivers for PRES would coalesce in time for a transmission facility to be brought into service before December 31, 2022.

I submit that:

- i) The demand drivers for PRES are weakening. Given the project’s cost magnitude, this turn of events will only exacerbate a potentially significant public interest issue: *ratepayer risk*.

Please consider further below, as part of my submissions:

- ii) In the present conditions of a domestic energy surplus which is forecast to last into the 2030’s¹³, consideration of transmission projects that have the potential to “pick up” and serve additional domestic load, ought to be generally viewed as a beneficial pursuit.
- iii) The B.C. natural gas industry, like other domestic customers of BC Hydro, is (as a matter of principle) entitled to service, in so far as such service may be provided in a cost effective manner by the public utility. The B.C. natural gas industry has for decades contributed to, and continues to contribute in significant ways to the provincial economy and wellbeing.
- iv) In the process of consideration of transmission projects intended to serve the natural gas industry, we would be well served to adopt a systematic approach to addressing its GHG emissions, given the industry wide footprint of these emissions.
- v) We need to acknowledge that what might start as a transmission project intended to initially serve a singular industry (in this case, the natural gas sector), if built, will almost inevitably over time end up serving a mixed basket of customers; that is, with sufficient passage of time the customer

¹³ Exhibit B1, BC Hydro F2020-F2021 Revenue Requirements Application, PDF Page 1243, Appendix C, Comprehensive Review of BC Hydro – Phase 1 Final Report, Page 3.

base served by most any such project will diversify as additional local economies develop.

- vi) Determinations on transmission projects intended to serve the natural gas industry, ought to include consideration of potentially significant public interest issues and acceptable mitigation of ratepayer risk, if such projects were to be funded (in full or in part) through rates.

- vii) We ought to acknowledge that electrification of future natural gas industry operations, while a desirable policy objective in reducing the industry's greenhouse gas (GHG) footprint might not (solely, on its own) suffice to broadly incentivize electrification of new activities, which themselves are largely dependent on global developments and commodity price dynamics for advancement, and are typically subject to capital investment and/or asset refurbishment cycles (and altogether fortunes) of individual industry players. Mr. O'Riley, in his testimony also touched on this¹⁴, when he offered: "we could go through examples where - for example, customers have access to their own gas that has a very low value and they've got existing infrastructure in place to use that gas for compression or what have you, processing. What I'm telling you is that's a very hard sell and it's not because our people aren't working hard enough at it or BC Hydro's not working hard enough at it. I think the economics should be interesting to the people looking at this and those economics are very difficult."

- viii) During the Oral Hearing sessions, a number of interveners myself included, inquired on those segments or activities of the northeast B.C. natural gas sector that might offer higher-than-average potential for electrification of load and related GHG reductions. In particular, CEABC pointed at¹⁵ straddle plants (or deep-cut processing plants), suggesting that electrification of straddle plants would generally result in higher electrical loads owing to their significantly higher requirements for work energy per unit of MMBtu of natural gas as compared to shallow-cut plants. CEABC also brought up¹⁶ electrification of compression at natural gas pipelines. GJOSHE pointed at¹⁷ a major existing gas storage facility near Aitken Creek in the North Montney region that is outside of the present BC Hydro system reach and might benefit from a transmission system extension into the North Montney region. If indeed, in the near term, customer requests for service in the North Montney and South Peace regions suffer a further slow down, there may be an opportunity for BC Hydro to take *a more deliberate and less fractured approach* with its

¹⁴ Transcript Volume 5, Page 535, Lines 15-24.

¹⁵ Transcript 9, Page 1525, Lines 6-14.

¹⁶ Transcript 9, Page 1530, Lines 16-23.

¹⁷ Transcript 10, Pages 1696 & 1697, Lines 4-26 & Lines 1-20.

electrification and GHG reduction efforts related to the northeast B.C. natural gas sector.

- ix) Much like BC Hydro's own electrical system (with its transmission system backbone), the B.C. natural gas sector has its own infrastructure backbone. From a project revenue and ratepayer risk mitigation perspective, it may be helpful to strategically "fashion" electrical transmission solutions (i.e. their footprint and configuration) around the more enduring and robust elements of the natural gas sector infrastructure including major pipelines, storage facilities, straddle (processing) plants and natural gas liquids (NGL) plants.
- x) Likewise, it may be helpful for BC Hydro to *more proactively* pursue opportunities for electrification of existing natural gas sector operations, where such opportunities would be welcome by an existing or prospective customer (as it may coincide with their asset refurbishment cycles); and, when such a customer may be unable to solely on their own trigger or financially back-stop a transmission system extension. This approach may help mitigate some of the uncertainty usually associated with forecasting of new loads.
- xi) North Montney: While information on the North Montney project is presently scant, it appears this area may provide an early opportunity to remove the logjam of "chicken-and-egg" planning conundrum described by BC Hydro's Mr. Rich in his testimony¹⁸ "where we want to spend some money in advance because of the lead times associated with transmission so that we are ready and available to serve them if and when they make a decision to take service from Hydro".
- xii) It is possible for BC Hydro to design transmission solutions to serve the northeast natural gas sector, by optimizing such solutions to generally access areas of potential customer interest. There are processes that are envisioned by the BC Hydro Open Access Transmission Tariff (OATT) - namely *Open Season* processes – that are designed to allow gauging of broad customer proclivity for future electricity service as it concerns a particular service area, in a systematic way.

Recommendation: I recommend that the Commission review the PRES project, in light of the potential for significant public interest issues on account of the project scope and recent global developments, which may further contribute to slowing demand drivers for the project.

¹⁸ Transcript 9, Page 1519, Lines 1-5.

Minette Station to LNG Canada Interconnection Project

On “whether the Minette Station to LNG Canada Interconnection project meets the requirements of the Transmission Upgrade Exemption Regulation, as amended by B.C. Reg. 160/2018 to exempt the project from Part 3 of the *Utilities Commission Act*”, I offer no legal opinion. However, I provide the following discussion in the hope that it will help inform Commission deliberations on this matter:

Purpose: In being conceived to provide service to LNG Canada Phase 1, the MIN to LNG Canada Interconnection project clearly fits within the definition of a Transmission Upgrade for purposes as defined in the Transmission Upgrade Exemption Regulation¹⁹ (as amended by B.C. Reg. 160/2018 to exempt the project from Part 3 of the *Utilities Commission Act*) - that is “to provide service for... an LNG facility in the vicinity of the District of Kitimat”.

Commission Jurisdiction: The Northwest Substation Upgrade Project (which preceded the MIN to LNG Canada Interconnection project) was subject to a Commission directive²⁰ on BC Hydro’s F2017-F2019 Revenue Requirements Application. As such, it was incumbent upon BC Hydro to better set the stage for the introduction and the justification of the MIN to LNG Canada Interconnection project in its Application, as BC Hydro did concede²¹ in its reply to BCUC IR 1.1.1.

Scope: While the scope of the MIN to LNG Canada Interconnection project was arguably “carved out” from that of the Northwest Substation Upgrade Project, such a move was precipitated by an *essential* change in the LNG customer’s project plans, effectively resulting in the customer’s project proceeding in two phases: LNG Canada Phase 1 and LNG Canada Phase 2; each phase *presumably* with its distinct business drivers, timing and needs. Under these circumstances, I consider it reasonable of BC Hydro to tailor a transmission upgrade project to meet the timing and needs of LNG Canada Phase 1.

Complexity: As per BC Hydro²², the MIN to LNG Canada Interconnection project is comprised of two major components: an expansion of the Minette substation (including the addition of a 287 kV shunt capacitor bank); and a double-circuit 287 kV transmission line from the Minette substation to the LNG Canada facility.

¹⁹ Utilities Commission Act, Transmission Upgrade Exemption Regulation, Section 2 (2) (a).

²⁰ Directive 3, BCUC Decision on BC Hydro F2017-F2019 Revenue Requirements Application.

²¹ Exhibit B-5, BCUC IR 1.1.1, Page 4 of 4, Paragraph 3.

²² Exhibit B-5, BCUC IR 1.1.1, Page 4 of 4, Paragraph 3.

Cost: While the cost estimate for the MIN to LNG Canada Interconnection project is not in the public record, BC Hydro suggests in response to Undertaking 43 requested by BCOAPO²³ that the customer (LNG Canada) will provide a \$24M cash payment for the double-circuit 287 kV Minette substation to LNG Canada transmission line and a security towards the Minette substation expansion costs.

Timing: Given its scope and complexity, it is reasonable to expect as suggested by BC Hydro, that the MIN to LNG Canada Interconnection project, can be brought into service before October 1, 2025.

Recommendation: I recommend that the Commission review the MIN to LNG Canada Interconnection project if it deems appropriate to do so; but that its relatively narrow scope, geographical footprint, complexity, and system significance portend well to mitigating potential perceived ratepayer risk arising from the project.

BC Hydro Investments in Electric Vehicle (EV) Charging Infrastructure

In its Order G-63-20, The Commission Panel also requested that “parties’ final arguments include its position and rationale for: Whether British Columbia Hydro and Power Authority’s investments in electric vehicle charging infrastructure should be included in rate base during the current test period and recovered from ratepayers or be separately tracked and excluded from rate base until the British Columbia Utilities Commission directs otherwise, given the developing landscape of the electric vehicle charging stations market in B.C.”

It appears that BC Hydro is at a critical juncture, as it concerns the build out of charging infrastructure for electric vehicles, and further in developing a corporate wide effort in support of EV initiatives. This is best captured in the comments of BC Hydro’s Mr. Kumar during the Oral Hearing sessions²⁴:

MR. KUMAR: “... we are actually in the process of looking at a company-wide EV strategy as we speak, in terms of we know we've able to handle the EV growth in the province historically. We've installed fast-charging stations across the province, but now it's coming to a point where it could really take off and we need to understand how that's going to impact BC Hydro. As I mentioned before, if the EV forecast picks up as we project it to, it could have a significant impact on our distribution system. The benefit is that our load forecast has gone down and we have some tools in terms of managing that or shifting that forecast across the day. So I think

²³ Exhibit B-57, Undertaking 43, Page 2 of 2, Paragraph 1.

²⁴ Transcript 13, Page 2429, Lines 9-16.

there's definitely an imperative in BC Hydro in term of developing that EV strategy...”

As BC Hydro suggests in its Application²⁵, BC Hydro’s EV effort will be informed in large part by the CleanBC Plan and any further commitment to electric vehicle incentives. Until such time as BC Hydro develops its EV forecast, its impacts on the load curve, at the distribution systems’ level, and on other enabling corporate efforts such as rate design, remain un-quantified.

Recommendation: I recommend separate tracking of BC Hydro’s investments in EV charging infrastructure, and their exclusion from rate base in the Test Period, until the BCUC directs otherwise.

Recommendation of InterGroup Consultants on behalf of AMPC

InterGroup Consultants Ltd. (“InterGroup”), on behalf of AMPC, advocates that the BCUC identify the costs of legislated policies even if the BCUC cannot direct associated changes. It also contends that the BCUC should consider and test the prudence and “least cost nature” of all costs that continue to be included in the revenue requirement, including costs associated with government directions²⁶.

BC Hydro submits²⁷ that: “the exercise contemplated by InterGroup is, in effect, an attempt to second-guess legislated government policy. The BCUC, as a creature of statute, derives its mandate from the existing legislation and must operate within that framework”.

In my respectful opinion, the BC Hydro submission contradicts the “spirit” of certain exchanges that took place during the Oral Hearing sessions between the Commission Panel and BC Hydro’s Mr. O’Riley, which in my opinion give credence to the idea put forth by InterGroup:

THE CHAIRPERSON²⁸: “... there was a discussion yesterday of how Hydro, BC Hydro, is often called upon by your shareholder to implement various government policy initiatives. And I don't want to get into which ones you have been or haven't been, but I think we can generally agree that that is the case?”

MR. O'RILEY²⁹: “I would agree.”

²⁵ Exhibit B-1, Chapter 3, Page 3-51, First Bullet Point.

²⁶ Exhibit C11-11, InterGroup Evidence, Recommendations 9 and 10.

²⁷ BC Hydro Final Argument, Page 6.

²⁸ Transcript 6, Page 744, Lines 9-14.

²⁹ Transcript 6, Page 744, Line 15.

THE CHAIRPERSON³⁰: “Yeah. So I'm just wondering, is there a presumption then on BC Hydro's part that any action that you take or any activity that you undertake in order to implement government policy is automatically -- the cost associated with it are automatically recoverable from ratepayers? That there is a regulatory justification?”

MR. O'RILEY³¹: “Yeah, I would not say there's that presumption. So, you know, I think one of the things that -- I think more recently with government, and I won't say it's with this government, just more recently there's been a little more care taken on the question of what should be a ratepayer cost and a shareholder cost, and maybe in the past it was just assumed that everything was a ratepayer cost, right?”

THE CHAIRPERSON³²: “Right.”

MR. O'RILEY³³: “And I think there's more discipline in the company and in government about making that distinction. And I would say in many cases I think there's a fair overlap, right?”

THE CHAIRPERSON³⁴: “... And again, I'm not commenting on whether those costs are appropriate in and of themselves, just the question of whether they are rightly recoverable from ratepayers or not?”

MR. O'RILEY³⁵: “... So, I think we're all alive to that possibility and careful about it, and I think it's an appropriate topic of scrutiny by the Commission when you see things going on.”

THE CHAIRPERSON³⁶: “... costs... that you don't have a line item for them, that they are scattered throughout your budget, and that's the way it is with a lot of other costs of this nature. So, that's challenging then for us, to even know what costs are associated with what policy. And it makes it extremely difficult for us to even know what policies you are implementing, let alone how much those policies cost. So, I appreciate your comment that it's appropriate for us to review it, because I agree with you. But it's difficult for us to do so if we're not even notified about what's going on, especially if it's not a separate budget item, or program item.”

MR. O'RILEY³⁷: “Yeah, I can appreciate.”

³⁰ Transcript 6, Page 744, Lines 16-22.

³¹ Transcript 6, Page 744 Lines 23-26 and Page 745 Lines 1-4.

³² Transcript 6, Page 745, Line 5.

³³ Transcript 6, Page 745, Lines 6-9.

³⁴ Transcript 6, Page 746, Lines 12-15.

³⁵ Transcript 6, Page 747, Lines 8-11.

³⁶ Transcript 6, Page 747 Lines 16-26 and Page 748 Lines 1-3.

³⁷ Transcript 6, Page 748, Line 4.

MR. O'RILEY³⁸: “Yeah, I think that makes sense and I think it's fodder for us to think about how we set these things up in a way that it's possible for you to even see them, right? And then evaluate them. So we'll take that away, for sure.”

I respectfully disagree with BC Hydro's argument, and fully support the exercise contemplated by InterGroup Consultants Ltd., not as an attempt to second-guess legislated government policy (as asserted by BC Hydro), but as a prudence test on all costs that continue to be included in BC Hydro's revenue requirement. As well, the recommended exercise or findings thereof, might provide *valuable incremental feedback loops* to forward provincial policy undertakings.

Recommendation: I urge the Commission to consider and implement InterGroup's recommendation “to identify the costs of legislated policies even if the BCUC cannot direct associated changes, so as to ascertain the “least cost nature” of all costs that continue to be included in the revenue requirement, including costs associated with government directions³⁹.

Demand Side Management (DSM)

Over the past 20 fiscal years, BC Hydro has spent considerable effort in developing and sustaining a robust corporate DSM capability aiming to promote energy efficiency in B.C., curb domestic load growth (centred around the provincial regions of Lower Mainland and Vancouver Island) and in the process defer the need for new generation resources needed to serve this load. For an illustration of the cost magnitude of this effort, please see below the amended BC Hydro response to GJOSHE IR 2.16.2⁴⁰, which suggests that BC Hydro's DSM portfolio expenditures over this timeframe have equalled (an estimated average of) roughly 12.5% of BC Hydro's Sustaining Capital expenditures. This figure represents, in my opinion, a significant “chunk” of BC Hydro corporate resources dedicated to its DSM effort, which is planned to seemingly continue at a largely unfettered (albeit with some moderation) pace during the Test Period.

³⁸ Transcript 6, Page 749, Lines 6-10.

³⁹ Exhibit C11-11, InterGroup Evidence, Recommendations 9 and 10.

⁴⁰ Exhibit B-57, Page 3 of 3,

Correction

The table referenced in Gjoshe IR 2.16.2 reflects the expenditures for DSM programs only. The following table provides the values for the total DSM Portfolio.

(Million)		
Fiscal Year	Sustaining Capital Expenditures	Total DSM Portfolio Expenditures
Actuals		
2002	333	20
2003	367	48
2004	375	64
2005	331	73
2006	363	91
2007	428	47
2008	557	65
2009	664	101
2010	948	130
2011	865	131
2012	956	177
2013	1,009	150
2014	979	120
2015	1,005	125
2016	1,136	145
2017	1,158	97
2018	1,190	82
2019	965	104
2020 Plan	978	91
2021 Plan	1,093	89

Of note, the DSM Total Portfolio spend included in the table above does not include BC Hydro’s own operational expenditures related to the delivery of its DSM effort.

During the Oral Hearing sessions, a number of interveners explored several factors involved in the evaluation of the cost-effectiveness of BC Hydro’s DSM programs, including the utility cost test, the total resource cost test, and the Long Run Marginal Cost (LRMC). I focus on a few excerpts from a line of questioning on behalf of BCOAPO:

Mr. QUAIL⁴¹: “BC Hydro states that it uses a utility cost test and total resource cost test to evaluate the cost effectiveness of its DSM programs, is that right?”

⁴¹ Transcript 14, Page 2755, Lines 22-24.

MS. HANLON⁴²: “That’s correct. We actually – for internal decision making we rely probably more on the utility cost test, but, yes, that’s correct, we look at both.”

MR. QUAIL⁴³: “Okay. And the utility cost test compares the utility benefit of a DSM initiative as measured by the export value of the freed up electricity with the costs incurred by BC Hydro from the DSM initiative, is that right?”

MS. HANLON⁴⁴: “We do compare, the benefit is -- or we compare against the market price of electricity, that’s correct.”

MR. QUAIL⁴⁵: “This test does not capture the full financial implications of DSM for the utility, specifically it does not capture the revenue loss due to the reduction in customer consumption, is that right?”

MR. HOBSON⁴⁶: “So if what you are getting at is that you could have an upward pressure on rates still, part of the conversation I had earlier on the erosion of the consumption, then that would be correct.”

MR. QUAIL⁴⁷: “And put perhaps a little differently, while the utility class test may capture the impact on utility revenue requirements, it does not capture the impact on rates, because it is not recognized that the lower amount of sales over which the revenue requirement has to be recovered, is that fair?”

MR. HOBSON⁴⁸: “Yes.”

MR. QUAIL⁴⁹: “And can you confirm that with the value of the freed-up energy measured by the export price, DSM will have a negative financial impact on the utility because the loss in domestic sales revenues will exceed the value of increased export sales. Is that not so?”

MR. HOBSON⁵⁰: “Yeah, I would look at it in terms of the negative impact on the utility. So again bringing it back to if we’re going to have an upward pressure on rates as a result, I think what you described is part of what

⁴² Transcript 14, Page 2755 Lines 25-26 & Page 2756 Lines 1-2.

⁴³ Transcript 14, Page 2756, Lines 3-7.

⁴⁴ Transcript 14, Page 2756, Lines 8-10.

⁴⁵ Transcript 14, Page 2756, Lines 14-18.

⁴⁶ Transcript 14, Page 2756, Lines 20-23.

⁴⁷ Transcript 14, Page 2756 Lines 24-26 & Page 2757 Lines 1-3.

⁴⁸ Transcript 14, Page 2757, Line 4.

⁴⁹ Transcript 14, Page 2757, Lines 6-11.

⁵⁰ Transcript 14, Page 2757, Lines 19-23.

leads to that upward pressure.”

MR. QUAIL⁵¹: “And in the total resource cost test, Hydro compares the costs incurred by both utility and the customer with the benefit as measured by the avoided long-run marginal cost of new supply. Is that not correct?”

MR. HOBSON⁵²: “Yes. And being part of the intent of that measure is to provide a resource base comparative of supply and demand side resources.”

MR. QUAIL⁵³: “The impact of DSM is to affect export trade, not the development of new resources. It's not avoiding new resources it developed in the short to medium term?”

MR. HOBSON⁵⁴: “From a generation perspective for energy?”

MR. QUAIL⁵⁵: “Yes.”

MR. HOBSON⁵⁶: “I would agree with that within the time frame. And I guess that is the piece that would get looked at within the next integrated resource plan.”

It is evident from the above exchange, that BC Hydro concedes that there are negative financial impacts on BC Hydro from its DSM undertakings, on account of its utility cost test for DSM initiatives, which disregards revenue and rate impacts arising from the decline in customer consumption brought about by these initiatives. Further, one could argue that in the short and medium term, DSM (at a system level) affects export trade rather than the deferral of new generation resources, more evidently so in conditions of domestic energy surplus.

Also as part of questioning on behalf of BCOAPO, MR. QUAIL explored the “divergent” nature of the dynamics between BC Hydro’s conservation efforts on one hand and electrification, on the other. Here are a few excerpts:

MR. QUAIL⁵⁷: “On one hand BC Hydro is required to pursue conservation measures whose function is to lower the load curve over time. On the other time, the societal requirements of electrification has the impact of

⁵¹ Transcript 14, Page 2760, Lines 6-10.

⁵² Transcript 14, Page 2760, Lines 11-13.

⁵³ Transcript 14, Page 2760, Lines 20-23.

⁵⁴ Transcript 14, Page 2760, Lines 24-25.

⁵⁵ Transcript 14, Page 2760, Line 26.

⁵⁶ Transcript 14, Page 2761, Lines 1-3.

⁵⁷ Transcript 14, Page 2763 Lines 22-26 & Page 2764 Line 1.

raising the same load curve for different purposes, is that not correct?”

MR. HOBSON⁵⁸: “Correct.”

MR. QUAIL⁵⁹: “And to some extent at that level, there could be a conflict between furthering the objectives of conservation and the objective of electrification.”

MR. HOBSON⁶⁰: “You're asking me if there could be a conflict in that?”

MR. QUAIL⁶¹: “Yes.”

MR. HOBSON⁶²: “There could be in that they go in opposite directions and you could make decisions to choose one over the other, I suppose, or you could choose you to do both.”

MR. QUAIL⁶³: “And I'll also put it to you that in time of what's expected to be fairly sustained surplus energy position for BC Hydro, is an excellent moment to be leaning hard on electrification as opposed to DSM or conservation to the extent that those two may be in conflict. Does that not make emanent sense?”

MR. HOBSON⁶⁴: “I think there's drivers for both, within the time frame that we are in as well... So I think they can look like they can be moving in opposite directions and they can also look like they are complementary strategies.”

MR. QUAIL⁶⁵: “So the residential inclining block and industrial stepped rates are two rates that are designed simply as blunt instruments, one might say, to discourage incremental consumption of electricity by the ratepayer.”

MR. HOBSON⁶⁶: “Yeah. think they would fit in as an example of what I just outlined.”

⁵⁸ Transcript 14, Page 2764, Line 2.

⁵⁹ Transcript 14, Page 2764, Lines 3-5.

⁶⁰ Transcript 14, Page 2764, Lines 6-7.

⁶¹ Transcript 14, Page 2764, Line 8.

⁶² Transcript 14, Page 2764, Lines 9-12.

⁶³ Transcript 14, Page 2764, Lines 15-20.

⁶⁴ Transcript 14, Page 2764 Lines 21-22 and Page 2765 Lines 4-6.

⁶⁵ Transcript 14, Page 2765, Lines 19-23.

⁶⁶ Transcript 14, Page 2765, Lines 24-25.

MR. QUAIL⁶⁷: “Okay. And perhaps an example of conflict between electrification and conservation to the extent that those can arise.

MR. HOBSON⁶⁸: “Yes. I think that higher price signal, as much as it encourages efficiency, can have the opposite effect in terms of encouraging someone to adopt electricity in replace of gas, as an example.”

MR. QUAIL⁶⁹: “To the extent that there's potential conflict between the objectives of conservation and electrification, which one does Hydro give greater priority to?”

MR. HOBSON⁷⁰: “Well, I think that's going to be something that's also going to be informed and probably emerge out of the comprehensive review... But if you're talking about decisions in terms of how we progress with either of those in the longer term, then I think we would look to the guidance that comes from the comprehensive review and you would also likely look to the guidance that comes from the integrated resource plan.”

What is not explicit in the above exchange is that consideration of priority for either conservation or electrification is bound to arise on account of *scarcity of resources* alone. By BC Hydro's Mr. O'Riley's admission in his Opening Statement⁷¹: “...affordability is of great concern to us, and I know to all of you.”

It is my submission that, the new circumstances of declining provincial load growth, a domestic energy surplus that is forecast to last well into the 2030's⁷², and the “divergent” nature of dynamics between BC Hydro's conservation and electrification efforts, dictate a new “take” on the nature and scope of BC Hydro's DSM efforts going forward.

It is also my respectful submission that the time for “broad” and “unbridled” (in the face of changing circumstances) BC Hydro-funded DSM provisions, may be behind us.

Recommendation: I urge the Commission to recommend a “re-think” of BC Hydro's DSM philosophy as part of BC Hydro's 2021 Integrated Resource Plan (IRP) processes.

⁶⁷ Transcript 14, Page 2765 Line 26 and Page 2766 Lines 1-2.

⁶⁸ Transcript 14, Page 2766, Lines 3-6.

⁶⁹ Transcript 14, Page 2770, Lines 2-5.

⁷⁰ Transcript 14, Page 2770 Lines 7-9 and Lines 17-22.

⁷¹ Exhibit B-30, Page 3 of 5, Paragraph 2.

⁷² Exhibit B1, BC Hydro F2020-F2021 Revenue Requirements Application, PDF Page 1243, Appendix C, Comprehensive Review of BC Hydro – Phase 1 Final Report, Page 3.

BC Hydro Performance (Holdback) Pay

On the issue of performance pay, which is included in BC Hydro's Test Period Operational Costs, I would like to touch on three elements of BC Hydro's corporate performance, namely: Leadership, Financial Performance, and Rate Competitiveness. These elements inform the performance scorecards on the basis of which performance or "holdback" pay is awarded to members of the BC Hydro Executive Leadership Team and the Board of Directors.

Leadership: Throughout the proceedings and during the Oral Hearings, past decisions were deliberated on, and I would like to highlight an aspect of those deliberations, arising from a line of questioning by CEABC concerning BC Hydro IPP purchases pursuant to the Clean Energy Act, as per the conclusions reached by the Zapped⁷³ report:

MR. AUSTIN⁷⁴: "And, Mr. O'Riley, as I understand your testimony yesterday, you agreed with the conclusions of Zapped, and as I understand that, these conclusions are as follows: BC Hydro bought too much energy and energy with the wrong profile; BC Hydro paid too much for the energy it bought; and BC Hydro undertook these actions at the direction of the government. Is my recollection correct?"

MR. O'RILEY: "I do agree and that is correct."

MR. O'RILEY⁷⁵: And the consequence of that was very quickly after the Clean Energy Act was implemented BC Hydro entered into \$30 billion of contracts at, what we know now in hindsight and admittedly in hindsight, was the absolute top of the market in terms of IPP production.

MR. O'RILEY⁷⁶: "The requirements for the clean power call and the subsequent requirements for the northwest transmission line were driven by government direction. So it's difficult for me to anticipate what would have caused that direction to change."

MR. O'RILEY⁷⁷: "And what he's trying to do is assess the financial regret we face today looking back at the results of those processes. And I think that is the point of the report is to learn from the exercise and avoid the situation in the future."

⁷³ Exhibit C9-16.

⁷⁴ Transcript 6, Page 589, Lines 4-12.

⁷⁵ Transcript 6, Page 597, Lines 1-6.

⁷⁶ Transcript 6, Page 598, Lines 3-17.

⁷⁷ Transcript 6, Page 593, Lines 7-11.

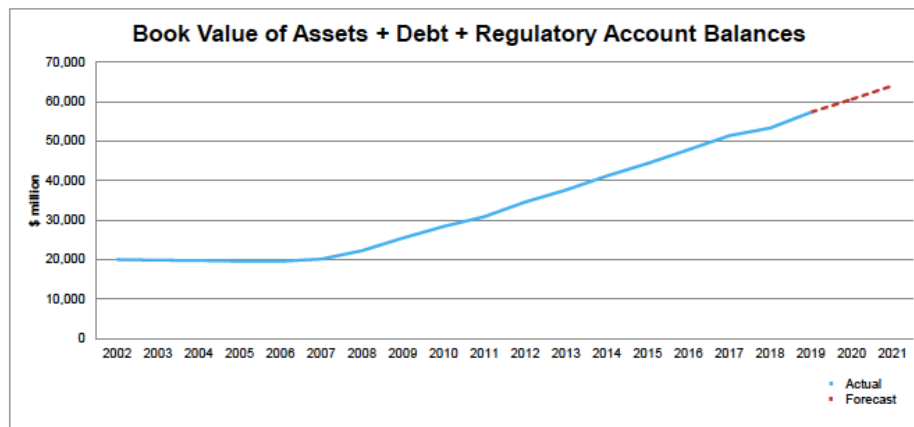
Conclusion: As it concerns leadership, It seems, over the last decade or so- BC Hydro has been at worst, complacent and at best, on the receiving end of Provincial policy. Either way, it seems, there has been little room for *leadership* on the part of BC Hydro’s leadership team.

Financial Performance: During the rounds of Information Requests, I inquired on an aspect of BC Hydro’s corporate performance related to the pace of growth of its assets, debt and regulatory accounts, juxtaposed against its domestic load growth over the last two decades. The following graphs were prepared by BC Hydro, in response to GJOSHE 2.13.4⁷⁸ and GJOSHE 2.13.6⁷⁹.

2.13.4 Please provide a line graph of “Book Value of Assets + Debt + Regulatory Account Balances” for the F2002-F2021 period. Please use forecasts for F2020-F2021.

RESPONSE:

Please refer to BC Hydro’s response to GJOSHE IR 2.13.3 for the data used to generate the line graph below.



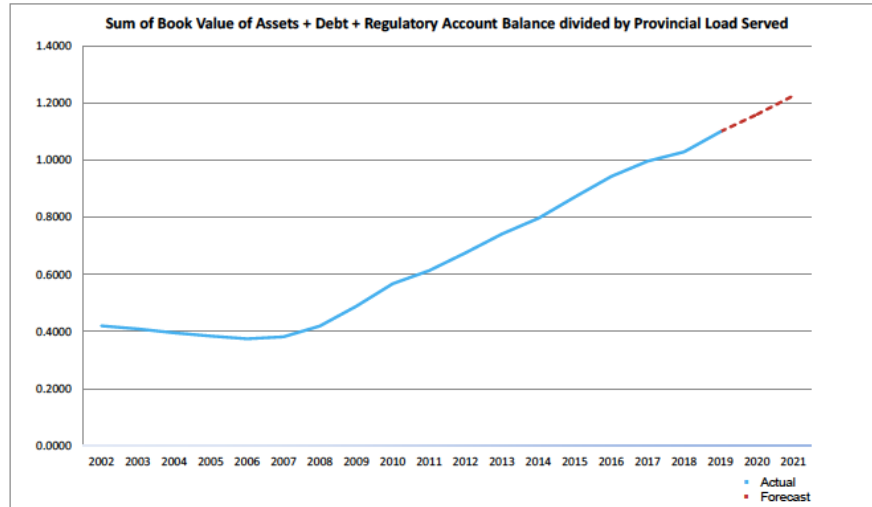
⁷⁸ Exhibit B-13

⁷⁹ Exhibit B-13

2.13.6 Please provide a line graph of “Book Value of Assets + Debt + Regulatory Account Balances’ divided by provincial load served (in GWh) during each fiscal year for the F2002-F2021 period. Please use forecasts for F2020-2021.

RESPONSE:

Please refer to BC Hydro’s response to GJOSHE IR 2.13.5 for the data used to generate the line graph below.



Conclusion: The conclusion one arrives at from reading the above charts, is that it now takes BC Hydro *three times as many resources* (in the form of assets, debt and regulatory account balances) to supply “the same old GWh” of domestic load, as it used to one and a half to two decades ago. One can argue on this basis, that the overall efficiency of BC Hydro’s domestic service provision has declined dramatically over this period.

Rate Competitiveness: In Round 1 of Information Requests, I inquired on the competitiveness of BC Hydro rates as compared to other jurisdictions in Canada and more broadly North America; and not just status-quo comparisons, but such as focused on the pace of growth of BC Hydro rates, to arrive at whether BC Hydro has gained or relinquished any competitive advantage in this regard as compared to other jurisdictions. Here are some excerpts from BC Hydro response to GJOSHE 1.16.2⁸⁰:

“To answer this question, BC Hydro compared the average bills of the 21 participating utilities between 2007 and 2018 for residential customers consuming 1,000 KWh per month and then calculated an annual growth rate. BC Hydro does not have copies of Hydro-Quebec’s reports prior to 2007 and Hydro-Quebec has not yet published comparisons for 2019 to

⁸⁰ Exhibit B-6.

2021.”

“BC Hydro’s average annual growth rate from 2007 to 2018 for the average bill of a residential customer consuming 1,000 KWh per month was 5.04 per cent. The average annual growth rate on this measure, amongst all other participating utilities, was 2.61 per cent.”

“While BC Hydro’s average annual growth rate on this measure is higher than the average of the other participating utilities, BC Hydro’s average residential bills were third lowest and within the first quartile in 2018, which is similar to 2007 when BC Hydro’s average residential bills were second lowest. BC Hydro was able to maintain its relative position amongst participating utilities, despite having rate increases from 2007 to 2018 that were higher than the average of other participating utilities, because our average residential bills in 2007 were considerably lower than the average residential bills of the other participants, except for Manitoba Hydro.”

By BC Hydro’s own admission, its “rate increases were higher than the average of the other participating utilities”. By BC Hydro’s own calculation, the pace of growth of BC Hydro rates has been *almost double (5.04% vs. the average 2.61%) the average pace of rate increases of the other participating utilities.*

During the Oral Hearing sessions, I further probed on BC Hydro’s claim that BC Hydro continues to be in the top quartile ranking as it concerns its rates, *whether fully on account of its own actions or partly on those of the government*, by inquiring into the role that the \$1.1B write-off of the rate smoothing regulatory account, had in BC Hydro achieving its rankings: Here are a few excerpts from that exchange:

MS GJOSHE⁸¹: “The write-off of the rate smoothing regulatory account contributes to a reduction in BC Hydro’s forecast overall regulatory account balance at the end of Fiscal 2019 by 24 percent, from 4.7 billion to 3.6 billion. Lowering the overall regulatory account balance means lowering the amount that would otherwise be recovered from ratepayers, reducing pressure on rates.”

MS GJOSHE⁸²: “Is it fair to say that this is largely a government action?”

Mr. LAYTON⁸³: “It is fair, that came out of the comprehensive review phase 1.”

⁸¹ Transcript 8A, Page 1107, Lines 19-26.

⁸² Transcript 8A, Page 1108, Lines 1-2.

⁸³ Transcript 8A, Page 1108, Lines 3-4.

MS. GJOSHE⁸⁴: “Thank you for that, Mr. Layton. Notwithstanding the merits of it, is it fair to say that it contributes to BC Hydro achieving top quartile rankings in the benchmarking efforts study?”

MR. LAYTON⁸⁵: “Yes, I think that and many other factors that contribute to overall budgets and rates, but absolutely it's fair to say that having lower rates that was enabled in part by this write-off absolutely contributes to our place in the survey, yes.”

MR. LAYTON⁸⁶: “If the rate smoothing regulatory account had not been written off, then we would be recovering it between now and Fiscal '24 and that would result in higher rates than otherwise would be the case.”

COMMISSIONER FUNG⁸⁷: “If I can just follow up on one aspect of what you just said. Ms. Gjoshe referred to the connection between your rankings and the service plan targets. So what I want to understand is your ranking relevant to whether or not an individual executive or director meets a service plan targets, in the sense that it affects their compensation or holdback?”

MR. WONG⁸⁸: “The service plan has several metrics, one being the ranking on the Hydro Quebec study. So the result of that will have an impact on the variable component payout for sure... So yes.”

COMMISSIONER FUNG⁸⁹: “So that is part of your corporate scorecard?”

MR. WONG⁹⁰: “That is part of the corporate scorecard, yes.”

Conclusion: Over the last decade, BC Hydro has lost ground on its rate competitiveness as compared to the other 20 jurisdictions that it benchmarks itself against, by managing to raise its rates at almost twice the average pace of other jurisdictions. At this speed, it is only a matter of time... and owing partly to recent action on the part of government in writing off \$1.1B from BC Hydro's rate smoothing regulatory account, that BC Hydro keeps a *semblance* of top quartile performance with regard to its rates.

Based of the above discussion, I respectfully submit that BC Hydro corporate performance has progressively deteriorated in the areas of Leadership, Financial

⁸⁴ Transcript 8A, Page 1108, Lines 18-21.

⁸⁵ Transcript 8A, Page 1108, Lines 22-26.

⁸⁶ Transcript 8A, Page 1112, Lines 2-5.

⁸⁷ Transcript 8A, Page 1113, Lines 1-8.

⁸⁸ Transcript 8A, Page 1113, Lines 11-15.

⁸⁹ Transcript 8A, Page 1113, Lines 16-17.

⁹⁰ Transcript 8A, Page 1113, Lines 18-19.

Performance and Rate Competitiveness.

Recommendation: I recommend that the Commission exclude from BC Hydro's Revenue Requirements for F2020 and F2021, and accordingly reject the recovery in rates in the Test Period of that component of BC Hydro's planned Performance Pay (i.e. holdback) for members of its Executive Leadership Team and the Board of Directors, that is a function of the corporate scorecard.

BC Hydro's Electricity Rate Comparisons – Annual Report

In the Oral Hearing proceedings, I led a line of questioning regarding the format of the Rate Competitiveness report, which BC Hydro prepares annually in adherence with the Province of B.C.'s Rate Comparison Regulation as per Ministerial Order N167. BC Hydro's annual reports are based on information taken from Hydro Quebec's "Comparisons of Electricity Prices in Major North American Cities" (which are also published every year). I include below a few excerpts from the exchange:

MS. GJOSHE⁹¹: "You may want to go to table 9 for example, and it says that, "Bill calculations exclude taxes and levies, and include deferral account rate rider."

MS. FRASER⁹²: "Correct."

MS. GJOSHE⁹³: "I was wondering if you could shed some light... as to whether the thought behind excluding the taxes in the calculation is a requirement of that particular Ministerial order or how that Ministerial order is interpreted?"

MS. FRASER⁹⁴: "My understanding is that it's not a requirement of the Ministerial order, it is the way that we do the calculations on it."

MS. GJOSHE⁹⁵: "Is that how BC Hydro interprets it or is it perhaps a component of how Hydro Quebec itself conducts the study?"

MS. FRASER⁹⁶: "I believe it's a component of how Hydro Quebec conducts the study, but I can check that for you."

⁹¹ Transcript 8A, Page 1101 Lines 24-26 and Page 1102 Line 1.

⁹² Transcript 8A, Page 1102, Line 2.

⁹³ Transcript 8A, Page 1102, Lines 5-8.

⁹⁴ Transcript 8A, Page 1102, Lines 9-11.

⁹⁵ Transcript 8A, Page 1102, Lines 13-16.

⁹⁶ Transcript 8A, Page 1102, Lines 18-20.

MS. FRASER⁹⁷: "... I'm just reading our annual report to the Minister, and it's the Hydro Quebec report that excludes taxes and nonutility levies, and so therefore that's why it's excluded in our report to the Minister."

MS. GJOSHE⁹⁸: "As a residential customer I receive a bill from BC Hydro bimonthly and there is a GST component to the bill and there is a provincial tax component to the bill. I presume that's the case for commercial and industrial customers as well?"

MR. LAYTON⁹⁹: "Sorry, Ms. Gjoshe, just one clarification if I may? The government has removed PST from electricity bills. So the GST will appear but not the PST."

THE CHAIRPERSON¹⁰⁰: "For clarity, from all customers' bills, correct?"

MR. LAYTON¹⁰¹: "Yes."

THE CHAIRPERSON¹⁰²: "All classes."

MR. LAYTON¹⁰³: "I'm quite sure of that, yes."

MS. GJOSHE¹⁰⁴: "But that's specific to the electricity bills, right? To the industry as opposed to other industrial activities in the province?"

MR. LAYTON¹⁰⁵: "Yes."

MS. GJOSHE¹⁰⁶: "That aside, it's fair to presume that how the experience is felt from the customers and how they deem a jurisdiction to fair in terms of their ability to locate or relocate to B.C. would include the tax component."

MS. FRASER¹⁰⁷: "Yes. As I said before, customers would look at a number of different factors including taxes in the jurisdiction that they're

⁹⁷ Transcript 8A, Page 1107, Lines 6-10.

⁹⁸ Transcript 8A, Page 1103 Line 26 and Page 1104 Lines 1-4.

⁹⁹ Transcript 8A, Page 1104, Lines 9-12.

¹⁰⁰ Transcript 8A, Page 1104, Lines 13-14.

¹⁰¹ Transcript 8A, Page 1104, Line 15.

¹⁰² Transcript 8A, Page 1104, Line 16.

¹⁰³ Transcript 8A, Page 1104, Line 19.

¹⁰⁴ Transcript 8A, Page 1104, Lines 21-23.

¹⁰⁵ Transcript 8A, Page 1104, Line 24.

¹⁰⁶ Transcript 8A, Page 1105, Lines 1-5.

¹⁰⁷ Transcript 8A, Page 1105, Lines 6-8.

looking at.”

As per above exchange and elsewhere in this document (see section “BC Hydro Performance (Holdback) Pay”, BC Hydro electricity rate comparisons inform a number of BC Hydro processes:

- a) Reports to the Minister pursuant to Ministerial Order N167;
- b) The corporate scorecard, which itself feeds into performance evaluations and performance pay provisions for BC Hydro executives and directors;
- c) *Potentially*, load forecasting processes, to the extent that jurisdictional comparisons of rate competitiveness may feed (either quantitatively or qualitatively) into BC Hydro’s account formation estimates.

Also, as per the above exchange, presently BC Hydro reporting of comparative bill calculations does not include taxes or nonutility levies.

Recommendation: That the Commission consider directing BC Hydro to update the format of the BC Hydro Rate Competitiveness report for its future reporting needs to *include* the following *rate comparison sensitivities*:

- 1) Rates including GST (where applicable for Canadian jurisdictions or any comparable tax for US jurisdictions); GST is presently charged to BC Hydro electricity bills;
- 2) Rates including GST and applicable provincial or state taxes (PST in B.C. and any comparable tax or nonutility levy applicable to other Canadian or US jurisdictions). PST is presently not charged to BC Hydro electricity bills.

BC Hydro’s Load Forecast and the Non-Heritage Deferral Account

Owing to a history of over forecasting its domestic energy needs, BC Hydro’s load forecasting function has, over the last decade or so, significantly contributed to BC Hydro’s regulatory account balances.

Pursuant to Undertaking No. 25 (Exhibit B-51), BC Hydro confirms that just over \$1B has accrued to the BC Hydro Non-Heritage Deferral Account, associated with the “under delivery” of domestic load as compared to forecasted demand. This figure is included in Exhibit B-51 below under the column heading “Domestic Revenue Variance”.

BC Hydro Fiscal 2020 to Fiscal 2021
Revenue Requirements Application

Non-Heritage Deferral Account - BC Hydro																		
Annual Summary																		
Year	Reported Opening Balance	Cost of Energy (Run Heritage)	Community Risk	Notional Water Rental	FX Gains & Losses on Powerex Trade	Domestic Revenue Variance (2009)	ABSU Funding Partner Benefits	Deferred Operating Costs in RDA	IRA Adjustments	PIP & External DATT Variance	Capital Lease Adjustment	Barrate Costs	Other	Total Changes	Rounding	Amortization	Interest	Ending Balance
F2005	0.0	154.5	-5.3	-10.7	-10.6									127.9			7.0	130.9
F2006	130.9	44.2	19.8	9.2	-9.9		-0.6	7.1	-2.9					144.0			9.0	204.5
F2007	204.5	15.5	1.1	-4.9	-3.1		-0.6	-2.7						15.5		-45.3	14.0	208.7
F2008	208.7	-54.3	-3.0	2.9	-18.6		-0.5		-33.7					-107.2	0.2	-58.9	9.8	51.6
F2009	51.6	-51.5	-9.7	-0.7	9.2	3.4	-0.5		41.7					30.3		-14.9	2.4	24.4
F2010	24.4	-22.8	-0.4	-9.3	-4.5	32.5	-0.6							33.9		-6.6	6.8	139.5
F2011	119.5	-44.5	12.1	-1.4	-4.0	47.4	-0.2		267.9	16.0				258.9		-23.5	7.3	362.2
F2012	362.2	-147.0	12.9	18.9	2.4	52.8	0.6	11.2	69.9	0.5				28.0	-0.2	-39.8	16.9	367.0
F2013	367.0	-166.6	5.1	-3.9	176.1	0.4			103.2	-12.2			5.2	164.3	-0.1	-84.0	20.3	467.5
F2014	467.5	-195.5	15.7	-14.9	137.7		-0.9		19.8	5.3				-3.8		120.3	12.7	351.6
F2015	351.6	-50.7	-4.8	-5.1	207.3				6.8	-22.8	1.1			239.2		-40.6	14.8	524.1
F2016	524.1	-215.4	40.5	1.9	148.9				-0.7	31.0	19.0			443.0	0.1	-127.7	22.5	916.8
F2017	916.8	-10.9	-0.2	-2.7	1.1				2.9	-12.8	-0.1			-12.2		-129.4	25.7	795.8
F2018	795.8	-60.8	-1.0	1.0	-33.5			1.4		3.2	-51.4	-0.1		-122.0		-196.5	36.0	463.3
F2019																		
Forecast	463.3	-97.9		-2.8		24.0				3.5	-0.5		-51.5	-125.1		-229.7	13.4	119.9
Comulative Total		-331.0	11.6	-21.7	-28.5	1,809.9	-2.0	16.1	388.4	30.1	-118.5	11.4	10.7	1,000.8	-0.2	-1,207.1	226.5	

Arguably, this persistent over-forecasting may have contributed (to some extent) to over-build of the BC Hydro system to accommodate the delivery of that component of domestic load that, over the years, has not materialized.

Recommendation: I bring this issue to the Commission’s attention, with the hope that the Commission will consider it appropriate to weigh on it, in the current proceeding or alternatively, in future processes.

BC Hydro Workforce and Skill Set

During the Oral Hearing sessions, I probed on the representation of the Economics discipline at BC Hydro, in particular the extent to which it features in BC Hydro’s Load Forecasting function. Here are a few excerpts from my exchanges:

MS. GJOSHE¹⁰⁸: “So I’ll start with a generic question on BC Hydro’s load forecasting function and how BC Hydro use it. Philosophically, do you consider the load forecasting function and engineering undertaking, or do you consider it an economic forecasting exercise?”

MR. CLENDINNING¹⁰⁹: “Thank you for the question. We recently have been doing a review within BC Hydro what constitutes engineering practice and my key business unit was involved in that effort, and during that analysis we determined that the load forecasting function was, as you say, an economic endeavour and not an engineering endeavour.”

¹⁰⁸ Transcript 10, Page 1622, Lines 4-8.

¹⁰⁹ Transcript 10, Page 1622, Lines 9-15.

MS. GJOSHE¹¹⁰: “Yes, so can you tell me a little bit how did you come to that realization, and the review that you, as you said as of recently undertook. There must have been some business needs that spoke to you for the need to do that.”

MR. CLENDINNING¹¹¹: “Yeah, so the review that I mentioned was part of our preparation for the Engineering and Geosciences of B.C. Licensing for Organizations. And so BC Hydro brought in an external organization to assist us with the preparation of that. And when we looked at the Engineering Act, and put its definitions for engineering against the load forecasting function, we found that that practice did not fall within the practice of engineering. That said, we do have many engineers in that group, and I think the analytic capabilities of engineers is of benefit to that as well as the other professions...”

It’s clear from the above that BC Hydro thinks of itself as first and foremost an engineering organization. And, that’s fair enough.

However, it is my observation that the *Economics discipline with authority for decision-making* is under-represented in BC Hydro’s Load Forecasting functions. It is also my observation, that, it is largely missing from BC Hydro’s Executive Leadership Team.

For more than a decade, BC Hydro has observed lower than forecast rates of domestic load growth. I submit that, at times such as these, when entire industries are being upended; and economic activities which, in the past have been thought of as traditional drivers to provincial load are not delivering on the forecasts; it is incumbent upon BC Hydro to more closely embrace the practise of the economics discipline among its ranks, in order to better support its capital planning, DSM and integrated planning activities.

Recommendation: I bring this issue to the Commission’s attention, with the hope that the Commission will consider it appropriate to weigh on it, in the context of BC Hydro’s resources for the Test Period and beyond.

¹¹⁰ Transcript 10, Page 1623, Lines 3-7.

¹¹¹ Transcript 10, Page 1623, Lines 8-19.