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Dear Mr. Wruck:

**Re: BC Hydro F2020 – F2021 Revenue Requirements Application
Final Argument**

The attached is my Final Argument regarding BC Hydro's 2020 – 2021 Revenue Application.

Sincerely



Paul Willis

BC Hydro F2020 – F2021 Revenue Requirement Application

Willis Final Argument

I am presenting this argument from the perspective of the Light Industrial group of customers. Many of the other groups, like Transmission Industrial, Commercial, Old Age Pensioners, and Zone II customers are represented and will be making Final Arguments. The Light Industrial group that consist of a large variety of different types of manufacturing, assembly and distribution enterprises need to be considered in the rate hearing process. The Cost of Service studies have indicated that this group generally pays more than their fare share of the electricity costs but employ a significant percentage of the work force and are an important part of our economy.

In this Final Argument, I would like to address the following issues:

- 1/ Existing high level of reliability of electrical service.
- 2/ Distribution of costs between capacity and energy consumption.
- 3/ Low Carbon Electrification.
- 4/ New Power Connections
- 5/ Availability of special rate options.

1/ High Level of Reliability

Reliability is important to the industrial sector because outages will cause loss of production and in some cases severe damage to product. Accordingly, manufacturers when deciding on where to locate a facility do consider the reliability and security of power.

In Section 5A of BCH's Revenue Application relatively detailed descriptions are provided with respect to BCH's maintenance process for Generation, Hydroelectric, Line and Substation assets. These procedures have resulted in good system performance results as described in Section 6.3.2.2 of the application and verified by utility standard organizations.¹ And in general it is suggested that industrial customers are satisfied with the reliability of BCH electrical service. B.C. industry are providing products in competition with suppliers in other jurisdictions and reliable and secure power enhances their competitive position. It is recommended that BCH continue to maintain their performance level.

¹ System Average Interruption Duration Index (SAIDI) and the System Average 4 Interruption Frequency Index (SAIFI)

2/ Distribution of Costs Between Capacity and Energy

Recent historical load growth and future projected load as indicated in Appendix O is relatively low with the actual growth from 2013 to 2018 being 1.8% over 5 years or 0.4% per year.² Growth in customer energy requirements is important with respect to revenue projections and in setting rates. However, with load growth being almost flat and considering the current surplus energy situation it is suggested that meeting peak demand requirements at the distribution level is perhaps more important than meeting total system energy requirements. A further case for putting less importance on energy growth is the situation where BCH can purchase electricity at discount rates from the North American market as was the case in the last part of 2019. In reviewing the Capital expenditures described in Chapter 6 it appears that much of these expenditures are connected with meeting peak demand requirements.

Mr. Chris O’Riley indicated in his testimony that he was not given many suggestions as to how to reduce costs but many recommendations that will involve increasing costs. I have a general comment on a planning approach for reducing costs, and that is to look for ways to increase load factor. In BCH’s submission I found little if any reference to load factor which may be a characteristic of natural monopolies like utilities. In industries which are affected by competition there is usually a lot of attention paid to load factor; examples are telecommunication, hotel, and retail facilities. BCH has a large investment in substations and distribution infrastructure, costs could be significantly reduced if load factor was increased. For example, in a distribution region if load factor was increased from 50% to 60%, BCH would deliver 20% more energy with no increase in distribution infrastructure.

There are a number of ways that could be used to improve load factor such as:

- Rate alternatives that would encourage use in low load periods.
- Interruptible rates.
- Storage facilities like distribution batteries.
- Discount rates for electric car charging in low-load hours.
- DSM programs design to reduce peak loads.
- DSM programs to encourage load during off load hours.

I believe that BCH is considering all of these measures but there does not seem to be any targets or goals for increasing load factor and reducing costs.

² Figure on page 3 or Appendix O, indicating domestics sales of 51,107 GWh in 2013 and 52,024 GWh in 2018

3/ Low Carbon Electrification (LCE)

BCH's Low Carbon Electrification program, described in Appendix Y³ is over due considering the opportunities to use Clean Electricity to replace fossil fuels. It is hoped that BCH will follow-up on its intentions as indicated on the bottom of page 5 in Appendix Y: ***"BC Hydro expects to develop a future plan for low carbon electrification that is informed by the learning gained through the Initial LCE Projects and the BC Hydro LCE Program as well as Government's CleanBC Plan."***

There seems to be a policy discrepancy between BCH's conservation program and their plans for LCE. On page 13 of Appendix Y, it is indicated that ***"One of the legal consequences of BC Hydro's program or project being in a class of prescribed undertakings under section 18 of the Clean Energy Act is that BC Hydro is entitled to recover the costs of our electrification programs or projects in rates."*** Table 4.1 immediately above this statement indicates that for an expenditure of 45 million\$ there is a cumulative GRR benefit of 134 million\$. Why does BCH need to recover all of its LCE expenditures in rates when there is such a large GRR benefit?

This contrasts with the conservation effort where BCH is planning to spend 85 million\$ per year in conservation. Besides the 85 million\$ in program and incentive expenditures BCH will also lose in customer revenue because they will lose approximately 8 cents for every kWh saved in customer revenue and will only recover about 3 cents per kWh from export sales. The conservation program does benefit customers because it does reduce their cost of electricity. It is not suggested that the conservation program be severely scaled back but that there should be a more balanced approach between LCE and conservation expenditures especially considering the significant benefit from reducing greenhouse gas emissions.

³ BC Hydro 2020 – 2021 Revenue Application, Appendix y.

There are a number of ways that the light industry sector can reduce GHG emissions such as:

- Installation of electric boilers to replace gas fired boilers (BCH has already sponsored this type of project at Thompson Rivers University).
- Promotion of electric fleet vehicles in conjunction with charging stations at industrial establishments.
- Drying equipment in a variety of process operation using electricity as the energy source rather than fossil fired equipment.
- Industrial off-road vehicles like fork-lift trucks powered by electricity rather than fossil fuels.
- Space heating equipment in industrial facilities fired by electricity as opposed to GHG fuels.

Considering that BCH has a surplus, they are in a position to promote programs that would offer incentives or discount rates for projects that would increase the use of electricity.

4/ New Power Connections

In BC Hydro's Final submission dated April 1, 2020, BC Hydro Senior Executive staff described in a fair amount of detail the effort being expended to provide good service with respect to interconnection requests.⁴ BC Hydro have obviously made changes and are continually trying to improve the time it takes to implement service interconnections. The results of Black & Veatch's bench marking study summarized by the Table on page 171 was informative and BCH used this study to set goals for improvement.

It is important for the executives at BCH to keep in mind that they are a monopoly and do not have the natural forces of a competitive environment to motivate them to continually endeavour to provide better connection service. This is particularly true with respect to small and medium size industry. Customers that request interconnections costing tens of millions in dollars automatically have access to senior management. However, smaller industrial customers do not have that access even though as a group they are very important to the economy.

⁴ BCH Final Submission dated April 1, 2020, pages 167 to 171.

It is suggested that BCH utilize an independent group either within the organization or an outside consulting firm to conduct follow-up interviews with customers who have had recent interconnection work performed. Information from these interviews could be used by BCH management to help assess the effectiveness of their interconnection service.

5/ Availability of Special Rate Options

In general BC Hydro rates are independent of the time of day or year when electricity is used except for Transmission Service customers who have access to the Freshet Rate where they can purchase electricity beyond their normal amounts at market rates at certain times of the day. However, no such rates are available for medium or small size industry. Considering that medium size industrial customers are paying more than their fair share of BC Hydro's costs it is suggested that BC Hydro consider developing rates where medium size industrial customers would have access to lower rates depending on the time of day or year.

These rates could be designed so that BCH's existing revenue would not be reduced but rather increased. BC Hydro currently sells their surplus into the U.S. market normally at significant discount levels, typically less than 50% of the price level sold to its own customers. British Columbia industrial customers, if given access to such rates may be able to expand their business. The following are some suggested options for selling additional power at discount rates:

- Battery charging during off-peak hours.
- Additional sales to periodic process loads that could be timed to avoid BC Hydro's peak periods.
- A Freshet rate for General Service customers similar in structure to the Transmission Service Freshet rate.
- Promotion of electricity use by offering discount rates for converting a process from a fossil fired system to an electrical one (an example could be targeted radiant heated versus gas fired space heating).

The promotion of Energy efficiency has been a trend for a number of years; BCH back in 1989 initiated their Power Smart program and have been a leader in conservation. However there has been structural changes in the electrical industry since then. One of the key changes is that load growth was a key factor in 1989 and an important justification for conservation programs to absorb a good portion of load growth. In fact the objective of BC Hydro's Power Smart program was for conservation to absorb 66% of new growth. In recent years, the conservation programs have handled more than 100% of new growth. There have been a number of reasons for this development, including energy efficiency

initiatives sponsored by BC Hydro. But there have been other factors such as the movement from a heavy manufacturing economy to a soft data economy. Much of this has been beneficial to the environment such as the recycling of steel, glass, aluminum and paper. The key conclusion is that this is happening in many jurisdictions; load growth is simply less than it used to be, sometimes even flat.

It is recommended that BCH review their rate policy and consider implementing rate options that will be more consistent with the interest in reducing GHG emissions by encouraging electrification which can be done while still promoting energy efficiency.