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January 30, 2020

Fred James, Chief Regulatory Officer
British Columbia Hydro and Power Authority
333 Dunsmuir Street
Vancouver BC V6B 5R3
By email: bchydroregulatorygroup@bchydro.com

Dear Mr. James:

Re: BC Hydro Transmission Service Market Reference-Priced Rates Application
B.C. Sustainable Energy Association Information Request No.1

Pursuant to the regulatory timetable established by Order G-327-19 [Exhibit A-3], attached please find BCSEA's Information Request No. 1 to BC Hydro. A version in Word format will be provided separately. If you have any questions, please do not hesitate to contact me.

Yours truly,

William J. Andrews



Barrister & Solicitor

Encl.

REQUESTOR NAME: **BC Sustainable Energy Association**

INFORMATION REQUEST ROUND NO: 1

TO: **BC Hydro and Power Authority**

DATE: **January 30, 2020**

PROJECT NO: **n/a**

APPLICATION NAME: **BC Hydro Transmission Service Market Reference-
Priced Rates Application**

1.0 Topic: Freshet Rate, Customer Participation by Industry Sector
Reference: Exhibit B-1, Appendix D, Preliminary Evaluation Report for Year 1, Figure 2, Customer Participation by Industry Sub-Sector (Year 1), pdf p.243;
Appendix D, Preliminary Evaluation Report for Year 2, Figure 3-2, Customer Participation by Industry Sub-Sector (Year 2), pdf p.359;
Appendix D, Freshet Rate Final Evaluation Report, Figure 14, Customer Participation by Industry Sub-Sector (Year 3), pdf p.212;
Appendix E, Figure 1, Customer Participation by Industry Sector (Year 4), pdf p.431

1.1 Please provide a line graph and table showing the number (not percentage) of participating customer sites by industry sector for Years 1, 2, 3 and 4.

1.2 Does BC Hydro observe any trends?

1.3 Does BC Hydro expect the number of participating customer sites by industry sector to change materially going forward (if the Freshet Rate is approved)?

2.0 Topic: Freshet Rate, Year 4 Net Revenue Loss
Reference: Exhibit B-1, Appendix E, Table 5, RS 1892 Monthly Ratepayer Impact by Marginal Resource for Years 1 – 4, pdf p.444

“As shown in Table 5 above, BC Hydro is reporting a revenue loss of approximately \$0.5 million for Year 4. This is due primarily to the higher marginal price of BC Hydro’s system storage compared to the Mid-C marginal price used to price RS 1892 energy purchases. BC Hydro anticipated this outcome in advance, given the adverse hydrology conditions that BC Hydro faced leading into the 2019 Freshet Period, combined with an expectation of below normal inflows.” [pdf p.444, underline added]

“The outcome during the 2019 Freshet Periods was a strong bias of overall system operations towards market energy imports whereas the normal freshet period bias is to energy exports. These factors motivated BC Hydro to import market energy to support system storage levels.” [pdf p.446]

“As described in the Final Evaluation Report, the Freshet Rate produced benefits for participants and nonparticipant ratepayers over the initial three-year pilot term. These benefits were expected to continue unless conditions substantially changed.

In this respect, BC Hydro notes that Year 4 of the Freshet Rate pilot did represent a change in conditions compared to Years 1-3. As described above, conditions during the May-July 2019 freshet period were characterized by low reservoir levels, reduced thermal generation due to Enbridge pipeline explosion and below average inflows. This reduced the freshet energy surplus and contributed to higher system marginal prices and higher market energy imports. Even with these conditions, the 2019 Freshet Period revenue loss is modest when compared to the revenue gains over the prior three freshet periods. For the entire Freshet Rate Pilot period, the total revenue gain is \$5.8 million.

BC Hydro considers this result to demonstrate that the Freshet Rate design is robust and, when assessed over multiple years, able to prudently and efficiently drive incremental energy sales from participant customers while protecting the interests of non-participant ratepayers.” [pdf pp.446-447]

- 2.1 Please define and explain the column headings, “Forced Export”; “Market Import”; and “System Basin” in Table 5.
- 2.2 Please explain why BC Hydro is confident that, going forward, conditions that pertained in Years 1-3 will be more predominant than the conditions that pertained in Year 4. Is it a matter of ‘reversion to the mean’?
- 2.3 Given that BC Hydro anticipated a revenue loss in Year 4 due to the adverse hydrology conditions that BC Hydro faced leading into the 2019 Freshet Period, please explain why BC Hydro did not interrupt the RS 1892 service in Year 4.

3.0 Topic: Financial risk to ratepayers
Reference: Exhibit B-1, p. 2, pdf p. 9

BC Hydro states:

“Minimize risk to all ratepayers by not requiring BC Hydro to undertake system reinforcements and not requiring BC Hydro to provide service if the electrical system is constrained for technical reasons such as forced or planned outages of its transmission or generation system. For greater certainty, BC Hydro does not propose to interrupt these non-firm services for economic reasons.”

BC Hydro also states that the Freshet Rate Pilot lost money in year 4.

- 3.1 Please confirm that under RS 1892 and 1893 BC Hydro has the right to curtail service for economic reasons.
- 3.2 Are there any circumstances in which BC Hydro would consider changing its policy of not interrupting service for economic reasons?

4.0 Topic: Freshet Rate, clarification
Reference: Exhibit B-1, Appendix E, Transmission Service Freshet Rate Pilot, Evaluation Report for Year Four, Figure 3, RS 1823 and RS 1892 energy prices (May to July 2019), pdf p.436

In Figure 3, the RS 1823 Tier 2 price appears to be between \$90 and \$100 per MWh. The text on the next page refers to an RS 1823 Tier 2 energy price of \$101.60/MWh.

4.1 Is the RS 1823 Tier 2 price in Figure 3 accurate?

5.0 Topic: Freshet Rate, Implementation Costs and Load Shifting Impacts
Reference: Exhibit B-1, Application, p.16, pdf p.23

BC Hydro states in several places in the Application and appendices that for the four-year Freshet Rate Pilot period “There was an estimated net revenue gain of \$5.8 million, before adjustment for implementation costs and/or verified load shifting impacts.” [Application, p.16, pdf p.23, underline added]

5.1 Please explain why BC Hydro emphasizes net revenue before adjustment for verified load shifting impacts? Wouldn't a more useful measure of the financial impact of the pilot be net revenue after adjustment for verified load shifting impacts?

5.2 Please explain “implementation costs.” Are these one-time start-up costs? If implementation costs are ongoing, shouldn't they be subtracted from net revenue to give an accurate indication of the program's financial impact?

5.3 Quantitatively, are the implementation costs of the Freshet Rate Pilot considered immaterial? (Reference: “[Freshet] Rate design, implementation and management were achieved using existing staff resources.” [p.29, pdf p.36])

6.0 Topic: FACOS
Reference: Exhibit B-1, Application

6.1 If the Freshet Rate and the Incremental Energy Rate Pilot are approved, how will they be dealt with in future Fully Allocated Cost of Service studies?

6.2 If Transmission Service customers utilize the Freshet Rate and the Incremental Energy Rate Pilot as intended will this have the effect of putting downward pressure on the revenue/cost ratio for that the Transmission Service customer class? If not, why not?

7.0 Topic: Freshet Rate, Minimum Generation with Imports
Reference: Exhibit B-1, Application, p.47, pdf p.54

Regarding Condition 2: Minimum Generation with Imports, BC Hydro states:

“The revenue impact can also vary if BC Hydro uses lower cost market energy to serve incremental Freshet Rate load in real time rather than storing that energy in large reservoirs for later use. Where BC Hydro has to purchase replacement energy from market to serve load at some future point, the impact will be: (i) a revenue loss if the future market energy incremental import is priced higher than the freshet market energy import;

or (ii) a revenue gain if the future market incremental energy import is priced lower than the freshet market energy import.”

- 7.1 Please explain the quoted paragraph in greater detail. Why would BC Hydro use lower cost market energy to serve incremental Freshet Rate load in real time rather than storing that energy in large reservoirs for later use? Couldn't BC Hydro choose to acquire additional lower cost market energy in order to both serve incremental Freshet Rate load and store the energy in large reservoirs?

8.0 Topic: Load Forecast

Reference: Exhibit B-1, Application, p.46, pdf p.53; p.60, pdf p.67

Regarding the Freshet Rate Pilot, BC Hydro states:

“The Freshet Rate is non-firm and interruptible. BC Hydro will provide energy and capacity under this rate schedule only to the extent it is available. No estimates of load under the Freshet Rate have been included in BC Hydro's load forecast and BC Hydro is not required to undertake system reinforcements to serve load under this rate schedule. BC Hydro also has operating procedures in place to interrupt non-firm Freshet Rate service customer loads to mitigate the impact of actual or prospective system constraints and prioritize service to firm service customer loads;” [p.46, pdf p.53, underline added]

Regarding the Incremental Energy Rate Pilot, BC Hydro states:

“The Incremental Energy Rate Pilot is non-firm and interruptible. BC Hydro will provide energy and capacity under this rate schedule only to the extent it is available. BC Hydro is not required to undertake system reinforcements to serve load under this rate schedule. RS 1893 load is not included in BC Hydro's load forecast. BC Hydro has the right to interrupt RS 1893 service for transmission and generation system constraints;” [p.60, pdf p.67, underline added]

- 8.1 Please describe how non-firm interruptible energy is dealt with in BC Hydro's load forecast, for short-term purposes (i.e., rate setting) and for long-term resource planning. Are the quantities so small as to be immaterial?

9.0 Topic: IERP and Freshet Rate

Reference: Exhibit B-1, Application, p.7, pdf p.14; p.61, pdf p.68

“The Incremental Energy Rate Pilot is similar in concept and design to the Freshet Rate, but would be offered on a year-round basis. BC Hydro expects that some customers will prefer the seasonal Freshet Rate, while others will prefer the annual Incremental Energy Rate Pilot. Having both rates available will provide transmission service customers with choice during the proposed pilot period. It will also permit direct observation of customer preferences and specific actions taken to increase load;” [p.7, pdf p.14]

BC Hydro proposes that the evaluation of the Incremental Energy Rate Pilot will include, among other things, “(v) Interactions and possible opportunities for synergies between the Incremental Energy Rate Pilot and the Freshet Rate.” [p.61, pdf p.68]

- 9.1 What is the proposed relationship between the Freshet Rate and the Incremental Energy Rate Pilot? Are they mutually exclusive, such that an eligible transmission customer could chose to participate in either optional rate but not both? Could a participant switch from one to the other?
- 9.2 What might be the synergies between the Incremental Energy Rate Pilot and the Freshet Rate?

10.0 Topic: Incremental Energy Rate Pilot
Reference: Exhibit B-1, Application p.72, pdf p.79

“Importantly, BC Hydro also notes that subscribing RS 1823 Customers remain subject to the terms and conditions of TS 74, including Energy CBL resets, for annual RS 1823 energy purchases. While BC Hydro acknowledges that some participating customers might have the capability to shift a portion of their load from RS 1823 to RS 1893, the prospect of Energy CBL annual reset under TS 74 significantly mitigates this risk. This is because Energy CBL annual reset could result in a material change to the mix of RS 1823 Tier 1 and Tier 2 energy purchases for the Customer’s baseline load. All else being equal, this would increase the cost of RS 1823 energy for participant customers who have made prior investments in conservation and operational efficiency. Accordingly, the prospective financial consequence of Energy CBL reset is a significant deterrent to load shifting. BC Hydro will consider the impact of load shifting and/or Energy CBL reset and any associated revenue impacts in its evaluation of the Incremental Energy Rate Pilot.” [p.72, pdf p.79]

- 10.1 Please provide an example to show how the Energy CBL reset would mitigate the risk of a customer shifting load between RS 1823 and the Incremental Energy Rate Pilot (RS 1893).
- 10.2 Does BC Hydro see a risk that Transmission Service customers using the Incremental Energy Rate Pilot (or the Freshet Rate) will forego increasing their base load as a result of the availability of these rates?

11.0 Topic: Incremental Energy Rate Pilot
Reference: Exhibit B-1, Application, p.81, pdf p.88

“An additional scenario which could occur is if, in high load periods, BC Hydro has to reduce its sales of energy to market to serve Incremental Energy Rate Pilot load, there may be a revenue loss if the forgone export would have been at a higher price than the price of the Incremental Energy Rate. BC Hydro notes this risk may be low given the situation is more likely to occur during high priced periods, which may have lower customer participation as described in the final paragraph of section 5.2.” [p.81, pdf p.88, underline added]

- 11.1 Please explain how there could be a revenue loss if the forgone export would have been at a higher price than the price of the Incremental

Energy Rate. Isn't the price of the Incremental Energy Rate based on the Mid-C price?

12.0 Topic: Freshet Rate and Incremental Energy Rate Pilot
Reference: Exhibit B-1, Application, p.2, footnote 2, pdf p.9

“As described in section 5.5.1, BC Hydro uses “system marginal value” as its marginal cost of energy for incremental sales. The system marginal value represents the estimated marginal value of energy in the system, which is typically the expected value of generation from one of BC Hydro's large storage reservoirs. BC Hydro's analysis takes into account uncertainties in various inputs such as forecasted inflows, electricity and gas prices, loads and operational constraints. The rates have been designed to cover the marginal cost of energy and provide a contribution to fixed costs on an expected value basis (determined by positive expected net revenue in the analysis), which is determined by the probability weighted average of all values.

- 12.1 Would BC Hydro describe this analysis as existing within the operational framework, the long-term planning framework, or both?
- 12.2 In BC Hydro's view, what happens to the rationale for the Freshet Rate and the Incremental Energy Rate Pilot when the system approaches a deficit in energy or capacity for planning purposes?