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January 21, 2021

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

Dear Mr. James:

Re: BC Hydro 2020 Street Lighting Rates Application
BCUC Project No. 1599147
B.C. Sustainable Energy Association, Information Request No. 1 to BC Hydro

Pursuant to the further regulatory timetable established by Order G-302-20 [Exhibit A-2], 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 (BCSEA)**
INFORMATION REQUEST ROUND NO: 1
TO: **BC Hydro**
DATE: **January 21, 2021**
PROJECT NO: **1599147**
APPLICATION NAME: **BC Hydro 2020 Street Lighting Rates Application**

1.0 Topic: RS 1701, Price Signal, Revenue-Cost Ratio
Reference: Exhibit B-1, p.26 (pdf p.32); Footnote 5, pdf p.361; p.4, (pdf p.10)

BC Hydro used a marginal cost model to develop the target revenue estimate after the LED conversion program. [Application, p.26 (pdf p.32)]

The F2019 Fully Allocated Cost of Service (FACOS) Study indicates an F2019 Actual Revenue to Cost Ratio of 211.9% for the rate class called "Street Lighting, BC Hydro Owned." [Footnote 5, Application, pdf p.361, reference to F2019 FACOS Study]

BC Hydro says that section 58.1(7) of the *Utilities Commission Act* does not apply to this application because BC Hydro not applying for rate rebalancing. BC Hydro states:

"Section 58.1 of the UCA addresses rate rebalancing. Section 58.1(7) states that:

"The Commission may not set rates for a public utility for the purpose of changing the revenue-cost ratio for a class of customers except on application by the public utility."

As BC Hydro is not applying for rate rebalancing as part of this application this section of the UCA is not applicable to this application" [p.4, (pdf p.10)]

- 1.1 Please confirm that the F2019 FACOS Study provides an estimated F2019 revenue to cost ratio of 211.9% for the rate class "Street Lighting, BC Hydro Owned."
- 1.2 Please file a copy of BC Hydro's May 13, 2020 letter to the BCUC providing the results of the F2019 FACOS Study, that provides a summary table of Revenue to Cost Ratios on page 2. Alternatively, please file a copy of the RCRs from the most recent FACOS Study.
- 1.3 Is RS 1701 within "Street Lighting, BC Hydro Owned" for FACOS purposes?
 - 1.3.1 Approximately what proportion of "Street Lighting, BC Hydro Owned" is attributable to RS 1701?
 - 1.3.2 Is a Revenue to Cost Ratio of 211.9% a suitable estimate of the RCR of RS 1701? If not, please provide a better estimate.

- 1.4 Does BC Hydro acknowledge that RS 1701 customers as a whole provide revenue that is substantially above the cost of serving them?
- 1.5 Does BC Hydro acknowledge that if the RS 1701 rates and supplemental charge associated with the LED Replacement Program are determined according to BC Hydro's marginal cost approach then RS 1701 customers a whole will continue to provide revenue that is substantially above the cost of serving them?
- 1.6 In deciding to use a marginal cost model to develop the target revenue estimate after the LED conversion program did BC Hydro take into account that RS 1701 customers already pay substantially more than the cost to serve them? If so, why did BC Hydro adhere strictly to a marginal cost model? If not, why did BC Hydro not take the revenue cost ratio into account?
- 1.7 In evaluating the proposed RS 1701 rate and supplemental charge against the Bonbright principles of rate design does BC Hydro consider that the Bonbright principles apply only to marginal costs and exclude consideration of the revenue to cost ratio? If so, please provide references for this view. If not, please explain why BC Hydro did not address the RS 1701 RCR in evaluating the proposed RS 1701 rate and supplemental charge against the Bonbright principles.
- 1.8 Does BC Hydro consider that taking into account the RS 1701 revenue to cost ratio in determining the proposed RS 1701 rates and supplemental charge would constitute setting rates for purpose of changing the revenue-cost ratio for a class of customers within the meaning of section 58.1(7) of the UCA?
- 1.9 Would BC Hydro agree that section 58.1(7) of the UCA does not prohibit BC Hydro from applying for approval of rates for the purpose of changing the revenue-cost ratio for a class of customers?
- 1.10 Would BC Hydro agree that section 58.1(7) of the UCA would not prohibit BC Hydro from applying for approval of RS 1701 rates and a supplemental charge that took into account the RS 1701 revenue to cost ratio, even if this was characterized as being for purpose of changing the revenue-cost ratio for a class of customers?
- 1.11 In developing the Application did BC Hydro consider whether to include changing the RS 1701 revenue cost ratio as an explicit purpose in determining the proposed RS 1701 rates and supplemental charge? If so, please describe the consideration. If not, why not.
- 1.12 Given that the LED Replacement Program will reduce energy use and reduce peak load, would BC Hydro agree that the proposed RS 1701 rates and supplemental charge should not be above the cost of service in order to conform with the Bonbright principles of fairness and efficient price signal?

- 1.13 What would be the RS 1701 rates and supplemental charge if they were determined on the basis that the RS 1701 revenue cost ratio was allowed to change to within a range of reasonableness around unity?

2.0 Topic: RS 1701 Supplemental Charge

Reference: Exhibit B-1, p.20 (pdf p.26), p.28 (pdf p. 34), p.29 (pdf p.35); Footnote 5, Application, pdf p.361, reference to F2019 FACOS Study

“In addition, a supplemental charge also applies during the Replacement Program installation period. The supplemental charge is a temporary charge intended to recover the undepreciated value of HPS lights that are being removed before their end of life. The total value of the undepreciated lights was allocated to street lights based on the count of luminaires, and a simple fixed monthly charge per light was estimated. This temporary supplemental charge ends when costs are fully recovered.” [p.20, pdf p.26, underline added]

“The early retirement of existing street lights results in unrecovered depreciation for those assets that are removed before the end of their service life; specifically, the light fixtures. As these street lights are replaced by LEDs, the remaining Net Book Value of the replaced street light needs to be written off. In order to contain this write-off within RS 1701 (i.e., and not paid for by other ratepayers), BC Hydro is proposing that a temporary supplemental charge be included in the rate schedule.” [p.28, pdf p. 34, underline added]

“The proposed supplemental charge is in accordance with the Bonbright fairness criteria because BC Hydro’s proposal would recover these costs only from RS 1701 customers through a supplemental charge that applies during the period in which these costs are incurred. BC Hydro calculated the supplemental charge as a fixed charge per month per light (see section 5.3.2).” [p.29, pdf p.35, underline added]

The F2019 Fully Allocated Cost of Service (FACOS) Study indicates an F2019 Actual Revenue to Cost Ratio of 211.9% for the rate class “Street Lighting, BC Hydro Owned.” [Footnote 5, Application, pdf p.361, reference to F2019 FACOS Study]

- 2.1 Please provide an estimate of the impact on the Revenue to Cost Ratio for the Street Lighting, BC Hydro Owned rate class if the \$6.55 million unrecovered depreciation amount was not recovered from the RS 1701 customers. Would the estimated Revenue to Cost Ratio remain above unity (or above unity plus a range of reasonableness)?
- 2.2 Given that the Revenue to Cost Ratio applicable to RS 1701 is greater than 200%, could BC Hydro reduce the proposed Final RS 1701 Street Light Charges and/or the proposed RS 1701 Temporary Supplemental Charge and maintain consistency with Bonbright fairness and efficiency principles?

3.0 Topic: RS 1701, LED Replacement Program

Reference: Exhibit B-1, p.12 (pdf p.18), p.18 (pdf p.24)

BC Hydro says that “[RS 1701] Street Lights are photocell controlled, turning on at dusk and off at dawn.” [p.12, pdf p.18]

BC Hydro decided not to include adaptive controls for the LEDs in the Replacement Program:

“The pilot also included analysis and testing of adaptive controls. Adaptive controls allow for centralized energy management (e.g., remotely turning on, off, and dimming individual lights), data collection (e.g., logging of power and energy consumption), and communication data. Various adaptive control technologies were tested and while the potential for energy savings were verified a number of technical and practical limitations for the application to the BC Hydro owned street light network were noted. BC Hydro decided not to include adaptive controls in the Replacement Program due to the findings of the pilot and due to their costs.” [p.18, pdf p.24]

3.1 Will the LEDs installed under the Replacement Program be photocell controlled, turning on at dusk and off at dawn?

4.0 Topic: Orders Requested
Reference: Exhibit B-1, Appendix A

4.1 Please explain the relationship between the Interim Draft Order, Final Draft Order, and Tariff Sheets, RS 1701.

4.2 Why are the amendments listed in section G of the preamble to the Interim Draft Order not listed in the Final Draft Order?

5.0 Topic: Charge for Removal of LED at Customer’s Request
Reference: Exhibit B-1, Appendix A, p.2 (pdf p.77); Exhibit B-1, p.12 (pdf p.18); Exhibit D-8-1

Among other requests, BC Hydro seeks approval on an interim and refundable or collectible basis of an amendment to RS 1701:

“G (ii) To allow BC Hydro to recover the undepreciated value and removal costs when customers request the removal of street lights before they are fully depreciated for any reason, even if they are not replaced with a new fixture as currently provided in Special Condition No. 3, or if a light is removed by BC Hydro because a customer has failed comply with the Service Agreement;” [Application, pdf p.77, Appendix A, p.2]

On page 12 of the Application, BC Hydro refers to RS 1701 as a “lease” of a street light: “BC Hydro leases these street lights to customers at an all-inclusive, unmetered monthly rate.”

The City of Burnaby states:

1. BC Hydro is proposing to charge customers the undepreciated value of an LED luminaire plus removal costs if a customer requests removal of an installed LED luminaire. If that luminaire is relatively new (for example, 2

years old, with a life of 20 years) that luminaire can and should be recycled for use elsewhere. Therefore Hydro should reuse the luminaire at another location and not charge for the undepreciated value. Only the removal cost should be charged. Alternatively, the customer could have the option to retain the light for their use since they have essentially paid for it in full. The latter suggestion will work for Burnaby because we use similar luminaires, but this may not be useful for other jurisdictions. See page 8 of application.” [Exhibit D-8-1]

- 5.1 Setting aside removal costs, please explain the rationale for recovering the undepreciated value of an LED fixture removed by BC Hydro at the customer’s request before the LED fixture is fully depreciated.
- 5.2 What is the purpose of the proposed recovery of the undepreciated value of an LED fixture removed by BC Hydro at the customer’s request before the LED fixture is fully depreciated?
 - 5.2.1 Is the proposal aimed at motivating RS 1701 customers to not request removal of LED fixtures until they are fully depreciated?
 - 5.2.2 Is there a concern that an RS 1701 customer could gain an improper advantage by requesting removal of undepreciated LED fixtures if they were charged only for removal and not for the undepreciated value?
- 5.3 Does BC Hydro have an estimate of the number of, or financial implications of, requests by RS 1701 customers for removal of LED fixtures prior to full depreciation with, and without, the proposed special condition?
- 5.4 Is the amendment identified in the preamble based on an assumption that an LED fixture removed at the customer’s request prior to full depreciation has no value to BC Hydro? Can BC Hydro reinstall such an LED fixture elsewhere? Does removal of an LED fixture prior to full depreciation mean that the LED fixture will be physically scrapped?
- 5.5 Please discuss the nature of RS 1701 in relation to the term “lease.” Is “lease” used merely for descriptive purposes? If RS 1701 is a lease, what is the duration of the lease?
- 5.6 Does BC Hydro consider the recovery of the undepreciated value of an LED fixture removed by BC Hydro at the customer’s request before the LED fixture is fully depreciated to be akin to liquidated damages for premature cancelation of the RS 1701 ‘lease’?
- 5.7 Please confirm, or otherwise explain, that BC Hydro still owns an LED fixture after it has been fully depreciated.
- 5.8 Is it the case that if a fully depreciated LED fixture still works then BC Hydro could leave it in service and the customer would continue to pay the RS 1701 rate for its use?

- 5.9 Please describe how BC Hydro's LED fixtures are or will be depreciated. Are they depreciated on an asset class basis? Are they depreciated on a straight line basis? How many years until full depreciation? Is each year a separate vintage for depreciation purposes?
- 5.10 Will BC Hydro be able to inform an RS 1701 customer of the amount the customer would be charged under the amendment referred to in G (ii) for removal of each of the LED fixtures for which the customer pays for service?

6.0 Topic: Proposed Termination of RS 1755
Reference: Exhibit B-1, Application, Chapter 6

With reference to RS 1755, BC Hydro states:

"In all cases, BC Hydro owns and maintains the lighting fixture, including luminaire, wiring and arm."

"As described in section 3.2, BC Hydro is required to remove or replace all equipment, including street lights, that contain PCBs by December 31, 2025 through PCB Regulation). Meeting this requirement for RS 1755 would require substantial expenditures. BC Hydro closed RS 1755 as of January 1, 1975 with the intent of no longer offering this service and eliminating the service requirement through attrition. Installation of private lighting service as is provided by BC Hydro under RS 1755 is readily available from other providers."

"Due to the 2008 Federal PCB Regulation, almost all of the RS 1755 lights have to be removed by December 31, 2025." [pdf p.202]

- 6.1 If, hypothetically, BC Hydro was to transfer ownership of the lighting fixture to the RS 1755 customer would the PCB Regulation require the customer to remove or replace the lighting fixture by December 31, 2025 if it contains PCBs? In other words, would the PCB Regulation apply to RS 1755 customers in a different way than it applies to BC Hydro?
- 6.2 In the case of Pricing Group 1, in which the customer owns the pole and BC Hydro owns the lighting fixture, please discuss whether it would be feasible for BC Hydro to transfer ownership of the lighting fixture to the RS 1755 customer. Would BC Hydro retain liability for compliance with the PCB Regulation?
- 6.3 In the case of Pricing Group 3, where BC Hydro legally owns and is responsible for the pole on which the light is mounted, please discuss whether it would be feasible for BC Hydro to transfer ownership of both the pole and the lighting fixture to the RS 1755 customer.
- 6.4 If, hypothetically, BC Hydro was to transfer ownership of the lighting fixture and, where applicable the pole, to the RS 1755 customer, could the RS 1755 customer be transferred to RS 1702 (customer owned light and pole) if lighting on private property was added to the purposes of RS 1702?

7.0 Topic: Back-billing of Unmetered Accounts
Reference: Exhibit B-1, Chapter 7, Proposed Electric Tariff Amendment for Back-Billing of Unmetered Service, pp.58-59 (pdf pp.64-65); Appendix D, pp.13-16 (pdf pp.110-113)

BC Hydro states:

“The provision to back-bill when “a reasonable Customer should have known” applies to a situation when a customer with unmetered services fails to notify BC Hydro of changes in a timely manner. However, for additional clarity, BC Hydro proposes to add content to section 5 of the Electric Tariff to address cases where the under-billing or over-billing is the result of a customer’s error or delay in providing notification of an addition or alteration of unmetered lighting or unmetered equipment for which self-declaration of changes is required.” [pp.58-59, pdf pp.64-65]

- 7.1 For context, please confirm, or otherwise explain, that most of the unmetered accounts and most of the unmetered energy are not for street lighting.
- 7.2 Please confirm, or otherwise explain, that BC Hydro’s proposed changes regarding back-billing of unmetered service apply only to situations in which the over-billing or under-billing is due to a customer’s failure to comply with a tariff requirement to notify BC Hydro of the addition, removal, or modification of unmetered street lights or equipment connected to BC Hydro’s distribution system.
- 7.3 Why does BC Hydro propose different time periods for reimbursement for under-billing (unlimited) than for over-billing (six months) where billing error is due to the customer not providing required load information? Is this strictly to motivate customers to report unmetered load changes when and as required?

8.0 Topic: RS 1702
Reference: Exhibit B-1, pdf p.17; pdf p.60; pdf p.39

RS 1702 – Public Area Ornamental Street Lighting is characterized as “Customer owns light and poles” and is available for “Lighting public highways, streets and lanes and municipal pathways and for public area seasonal lighting displays.” [Table 2, pdf p.17]

BC Hydro reports that some customers “have reportedly experienced significant reductions in energy costs after converting their own street lights, billed under RS 1702, to LEDs.” [pdf p.39]

However, RS 1702 is listed as an unmetered rate. [pdf p.60]

- 8.1 If RS 1702 is an unmetered rate, how would customers experience a reduction in energy costs after converting street lights billed under RS 1702 to LEDs? Does RS 1702 have a different charge for the electricity for LEDs than for HPS or MV lamps?

9.0 Topic: Adaptive Street Lighting Controls (ASLC)

Reference: Exhibit B-1, pdf p. 24, pdf p. 337; Exhibit A-3, BCUC IR 3.1 to 3.5

BC Hydro says its LED pilot verified the potential for energy savings from Adaptive Street Lighting Controls [p.18 (pdf p. 24)]

9.1 Please describe in more detail and quantify to the extent possible the potential energy savings of Adaptive Street Lighting Controls for LEDs.

The report of the LED Street Lighting Pilot Program recommends use of only seven-pin ANSI C136.41-2013 compliant sockets “to allow for further implementation of ASLC systems in the future.” [Appendix F, p.59 (pdf p. 337)]

9.2 Will the LED Replacement Program use only seven-pin ANSI C136.41-2013 compliant sockets?

10.0 Topic: LED Streetlight Spacing

Reference: Exhibit B-1, p.17 (pdf p. 23)

“However, LED luminaires have a stark light cut off between illuminated and non-illuminated areas, whereas HPS luminaires have a fading light cut off, and this can create a noticeable pattern of light and dark where the pole spacing is not optimal for LED luminaires.” [page 17, pdf p. 23]

10.1 How will BC Hydro’s LED Replacement Program deal with the ‘stark light cut-off’ issue? Can the potential problem be mitigated while still replacing existing streetlights with LED streetlights one for one on the same poles?