IRIS LEGAL
Environmental, Natural Resources &
Indigenous Law

VIA EFILE

January 21, 2021

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC. V6Z 2N3

Attention: MarijaTresoglavic, Acting Commission Secretary

Dear Ms. Tresoglavic,

Re: Zone II RPG's Information Request No. 1
Project No. 1599147
British Columbia Utilities Commission
BC Hydro 2020 Street Lighting Rate Application

On behalf of the Zone II Ratepayers Group, please find enclosed our Information Request No.1 concerning BC Hydro's 2020 Street Lighting Rate Application.

Please let us know if you require anything further.

Yours truly,
IRIS LEGAL

Jana McLean
jana@irislegal.ca

REQUESTOR NAME: **Zone II Ratepayers Group**
INFORMATION REQUEST ROUND NO: **1**
TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY
DATE: **January 21, 2021**
PROJECT NO: **1599147**
APPLICATION NAME: **British Columbia Hydro – 2020 Street Lighting Rate Application**

1.0 Reference: Exhibit B-1 (Application), Section 3.1 (Background), page 12-14.

There are 373 customers served under RS 1701, located across our service territory including our Non-Integrated Areas. Customers are primarily comprised of municipalities, regional districts, government ministries and First Nation Communities. In some cases, municipalities also own and operate their own fleet of street lights under RS 1702 in addition to having BC Hydro's street lights.

For fiscal 2020, monthly RS 1701 customer bills ranged from approximately $147,000 to $20, with an average of ~$4,700 and a median of ~$800. Actual bill values are dependent upon the actual quantities of the various types and wattages of street lights associated with a customer. The median number of street lights for an RS 1701 customer is 41 street lights. Forty per cent of these customers have fewer than 25 and two-thirds have fewer than 100 RS 1701 street lights. Approximately 6 per cent or 22 municipalities have over 1,000 lights each.

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The rate is a fixed monthly charge that varies by lighting technology and wattage. Street Lights are photocell controlled, turning on at dusk and off at dawn. Electricity consumption is not metered.

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BC Hydro has offered service under RS 1701 since 1964. In 1989 the availability of MV fixtures under RS 1701 was closed when BC Hydro undertook a program to replace MV fixtures with HPS lights. Rates were not adjusted at this time. These changes were approved by the BCUC Order No. G-10-89.

1.1 How many NIA customers does BC Hydro have?

1.1.1 How many street lights are there in the NIA?

1.1.2 Provide a breakdown of the number of lights per NIA customer.

1.1.3 What is the monthly revenue generated by street lights in the NIA?

1.1.3.1 What is the range of RS 1701 customer bills in the NIA?

1.1.3.2 What is the average and median RS 1701 customer bills in the NIA?

1.2 Confirm, or explain otherwise, that all NIA customers' street lights are on RS 1701. If not, please provide any details of what other street light rates are in existence.

1.3 When BC Hydro replaced MV fixtures with HPV lights, why were rates not adjusted at the time and no unrecovered depreciation collected for the MV fixtures? Please provide the reasons.

1.3.1 Provide a copy of the BCUC decision associated with the BCUC Order No. G-10-89.

2.0 Reference: Exhibit B-1 (Application), Section 3.3 (Customer Feedback, Consultation and Engagement), page 14.

BC Hydro has been discussing LED street lighting with customers for many years. In addition to individual customer meetings, municipal customers have requested meetings with BC Hydro at the Union of BC Municipalities (UBCM) annual meetings to discuss LED street lighting every year since 2014.

Municipal customers have expressed a high level of interest in the conversion of BC Hydro owned street lights to LED technology for better lighting quality and expected electricity bill savings.

At the 2019 UBCM annual meeting, municipalities passed resolution B33 urging the provincial government "to require BC Hydro to expeditiously replace all street lights within BC municipalities with LED technology, or provide municipalities with the financial resources necessary to continue paying for the operation of its inefficient street lights".

BC Hydro hosted a virtual rate design engagement session on August 12, 2020. Over 170 customers and other interested parties participated. Slides are included as Appendix E. Customers raised questions around the themes of LED light specifications, deployment logistics, Replacement Program costs and savings calculations and the proposed supplemental charge. BC Hydro sought feedback on aspects of the proposed RS 1701 rate design after the session. Twenty-six complete feedback forms were received after the session. The feedback form and the feedback summary report are included in Appendix E. Customer feedback was incorporated into various elements of the RS 1701 rate design as well as the Replacement Program deployment and customer communications plans.

2.1 Please provide the reasons for the delay in the conversion of BC Hydro owned street lights to LED street lighting.

2.2 Please identify the customer feedback that was incorporated into the RS 1701 rate design and how it was incorporated.

3.0 Reference: Exhibit B-1 (Application), Section 3.4 (Jurisdiction Review), page 16.

For comparison purposes, shown below are the rates in 2020 for a selection of electric utility owned street light services, for the 100 watt HPS and equivalent LED. In most cases, equivalent LED rates are slightly lower than HPS rates.

Table 3 Summary of Canadian Utility Owned and Maintained Street Lighting Service Rates, as of Summer 2020 ($/Month/Fixture)

Luminaire Type	Manitoba Hydro	Hydro Quebec	Newfoundland Power	Newfoundland & Labrador Hydro	Sask Power	Nova Scotia Power	New Brunswick Power
HPS							
100W	11.58	24.51	17.89	17.89	13.75	15.45	14.92
LED (HPS Equivalent Wattages)							
100W	10.13	23.19	16.20	16.20	13.75	9.6 to 10.08	13.73

3.1 Confirm, or explain otherwise if any of the utilities shown in Table 3 imposed a supplemental charge, similar to that BC Hydro is proposing, to address unrecovered depreciation switching to LED lights. Provide any details.

4.0 Reference: Exhibit B-1 (Application), Section 3.5 (LED Pilot Studies), page 17; Appendix F, LED Street Lighting Pilot Program.

With approximately 90,000 street lights to replace, it is important that the appropriate street lighting components are selected and installed. BC Hydro needs to ensure the lights can last for the 20-year life expectancy to minimize the future costs associated with street light repair or replacement. Further, there has been media coverage about perceived inadequacies of LED street lighting. Given this context, BC Hydro undertook two pilot studies to better understand these issues, inform LED purchase specifications, and to help inform customers in their selection of appropriate street lights for each location

In 2016 and 2017, BC Hydro installed 195 LED street lights as part of its LED pilot studies. These pilot studies were conducted in the municipality of Richmond and in Haida Gwaii (Port Clements, Queen Charlotte City, Village of Masset, Skidegate).

4.1 Provide the reasons for choosing Haida Gwaii and the municipality of Richmond as locations for the LED Pilot Studies.

4.1.1 Why were no northern interior, isolated communities in the NIA chosen in order to assess installation and LED street light performance in extreme winter weather conditions?

4.1.2 Does BC Hydro have information to suggest LED street lights will perform reliably in British Columbia's northern NIA communities?

4.2 Confirm, or explain otherwise, that an engineering technical report, similar to the December 4, 2017 report for the City of Richmond, in Appendix F, was completed for Haida Gwaii? Please provide a copy of this report.

4.2.1 How will the results of the Haida Gwaii pilot program inform the LED Street Lighting Program in other NIA communities?

4.2.1.1 Explain the similarity and differences between the Haida Gwaii trail and installations in other NIA communities.

4.2.1.2 Where there any key differences between the findings from the Pilot Program in Richmond versus Haida Gwaii and if so, please identify these differences?

5.0 Reference: Exhibit B-1 (Application), Section 4 (RS 1701 LED Street Light Replacement Program), page 19.

In order to ensure compliance with the Federal PCB regulation BC Hydro considered four alternatives and evaluated them using a structured decision-making process.

The four alternatives included:

• Status quo –replacement of failed street lights with new HPS lights as failure occurs;

• Reactive replacement of failed street lights or street lights that may contain PCBs with new HPS street lights;

• Reactive replacement of failed street lights with LED lights; and

• Proactive replacement of the existing fleet of street lights with new LED lights.

The proactive model of converting BC Hydro's existing fleet of street lights was identified as the best alternative based upon regulatory compliance, financial, and reputational considerations.

5.1 Please provide the reasons why the proactive model was selected as the best alternative, using the criteria noted above (regulatory compliance, financial and reputational considerations).

5.2 Confirm, or explain otherwise, if BC Hydro will be employing or contracting with any Indigenous persons as part of the LED Street Light Replacement Program. Please provide any details.

5.3 Confirm, or explain otherwise, if BC Hydro intends to coordinate work under the NIA DSM program with the LED Street Light Replacement Program in NIA communities. Please provide any details.

6.0 Reference: Exhibit B-1 (Application), Section 4.1 (RS 1701 LED Installation Plan), page 20, Table G-4, page 9.

Table 4 below shows the preliminary installation schedule and provides information about the number of street lights planned for conversion in each region by fiscal quarter. BC Hydro plans to start the deployment in December 2020 and will ramp up the monthly conversion volumes over the following quarters. The peak program installation volumes are planned for around fiscal

2022, quarter 1 to fiscal 2023, quarter 3, with a ramp-down period from fiscal 2023, quarter 4 to fiscal 2024, quarter 1.

Table 4 LED Street Lighting Installation Plan – number of street lights replaced per quarter

Region	Q3F21	Q4F21	Q1F22	Q2F22	Q3F22	Q4F22	Q1F23	Q2F23	Q3F23	Q4F23	Q1F24
Lower Mainland North	-	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	750	-
Lower Mainland South	-	1,600	2,400	2,400	2,400	2,400	4,800	4,600	3,300	750	-
Vancouver Island	1,250	2,800	5,000	4,800	3,200	3,200	1,500	-	-	-	-
North Interior	400	550	-	-	-	-	2,900	4,400	3,000	3,200	3,150
South Interior	800	3,200	3,700	4,300	2,300	2,200	-	-	-	-	-
Total	2,450	9,350	12,300	12,700	9,100	9,000	10,400	10,200	7,500	4,700	3,150

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Table G-4 Total Program Costs (Inclusive of LED Installation for RS 1755, RS 1701, and Contingency)

Program Costs	Total Request Amount ($ million)
Direct Deployment Costs (Materials + Installation)	
Labour	20.14
Materials	24.55
Indirect Program Costs	
Program Management	1.34
Deployment Management	3.21
Supporting Technology	2.24
Customer Engagement	0.83
Other (Change Management, Material Management, Procurement, Regulatory	0.64
Dismantling	2.41
Total Program Costs before Loadings and Contingency	**55.36**
Contingency	7.55
Inflation	2.92
Capital Overhead	7.53
Program Expected Cost	**73.36**
Program Reserve (Loaded)	9.92
Requested Total Authorized	**83.28**

6.1 How was schedule for installation, set out in Table 4, developed?

6.1.1 What criteria was used to determine the order for installation, as set out in Table 4?

6.1.1.1 In Table 4, please provide a breakdown of the number of lights to be installed in the NIA by Region and NIA community.

6.1.1.2 Was community safety or other customer factors considered when determining the order for street light installation, as set out in Table 4? Please explain.

6.1.1.3 Confirm, or explain otherwise, if the NIA's avoided energy cost of $300/MWh (Fiscal 2015$)[1], was a consideration in developing the installation schedule.

6.1.1.4 If so, why were these communities not considered earlier in the installation plan to maximize BC Hydro's energy savings?

6.1.1.5 For the Northern Interior, explain why are there no installations in F2022?

6.1.1.6 When does BC Hydro plan to install LED street lighting in the Zone II RPG communities (Kwadacha Nation and Tsay Keh Dene Nation)?

6.1.1.7 Is BC Hydro's installation schedule (Table 4) determined by the schedule of BC Hydro and its contractors or the needs of their customers or other factors? Please describe and explain.

6.2 Confirm, or explain otherwise, if BC Hydro is providing technical assistance to customers as part of the customer engagement plan. Please provide details.

6.2.1 What is the budget request for providing this technical assistance?

6.2.1.1 Where do these costs appear in Table G-4 (Total Program Costs)?

6.3 Please provide a table, similar to Table 4 (LED Street Lighting Installation Plan), with the current and forecasted revenues by quarter and Region broken down by integrated and non-integrated areas.

7.0 Reference: Exhibit B-1 (Application), Section 5.2.1 (Calculation of the Street Light Charge), page 27; Appendix G – BC Hydro's Proposed Final Rate Schedule 1701 Financial Analysis.

1. Electricity Savings:

As described in section 3.5, LED street lights use less energy than the existing HPS street lights. BC Hydro estimates that the energy savings resulting from the Replacement Program will be approximately 28 GWh/year after it is fully implemented. These savings are valued at BC Hydro's marginal cost of energy,

[1] BC Hydro Fiscal 2020 to 2021 Revenue Requirements Application, Exhibit B-5, BCUC IR 1.185.1. "For the purposes of DSM program cost-effectiveness in the NIA, we used $300/MWh (Fiscal 2015$) as the avoided energy cost. This value represents a high-level proxy of the diesel generation fuel costs across the NIA. Diesel generation is generally the marginal energy source for the NIA."

which is approximated by the wholesale market price, at an average $1.1 million per year.

As street lights are on during BC Hydro's system peak period, there will also be capacity savings associated with the Replacement Program. BC Hydro estimates the capacity savings to be 6.7 MW once the program is fully implemented. These savings are valued at BC Hydro's long run marginal cost of generation capacity and bulk transmission, and our marginal costs for non-bulk transmission and for distribution, also totaling $1.1 million per year.

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All electricity savings are estimated using the system wide average marginal costs. This is the same approach as has recently been tested and adopted in BC Hydro's Fleet Rate Design Application, approved by Commission Order No. G-67-20 issued March 26, 2020.

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Table G-3 Calculation of Electricity Savings of the Replacement Program

Fiscal Years	A Demand Reduction (kW)	B Energy Reduction (MWh)	C Marginal Energy Cost per Unit ($/MWh)	D Generation & Bulk Transmission Capacity Marginal Unit Cost ($/kW-yr)	E Distribution Capacity Marginal Unit Cost ($/kW-yr)	F Non-bulk Transmission Marginal Unit Cost ($/kW-yr)	G Energy Savings ($ million) (=BxC)	H Capacity Savings ($ million) (=(D+E+F)xA)	I Total Savings ($ million)[3] (=G+H)
2021	330	1,385	27.9	40.7	26.1	52.2	0.0	0.0	0.1
2022	2,255	9,471	30.5	41.5	26.6	53.2	0.3	0.3	0.6
2023	5,206	21,865	28.7	42.4	27.1	54.3	0.6	0.6	1.3
2024	6,611	27,768	32.1	43.2	27.7	55.4	0.9	0.8	1.7
2025	6,661	27,978	35.7	44.1	28.2	56.5	1.0	0.9	1.9
2026	6,661	27,978	36.9	45.0	28.8	57.6	1.0	0.9	1.9
2027	6,661	27,978	37.4	45.9	29.4	58.8	1.0	0.9	1.9
2028	6,661	27,978	38.4	46.8	30.0	59.9	1.1	0.9	2.0
2029	6,661	27,978	41.1	47.7	30.6	61.1	1.1	0.9	2.1
2030	6,661	27,978	42.3	48.7	31.2	62.4	1.2	0.9	2.1
2031	6,661	27,978	42.1	78.4	31.8	63.6	1.2	1.2	2.3
2032	6,661	27,978	45.6	79.9	32.4	64.9	1.3	1.2	2.5
2033	6,661	27,978	46.2	81.5	33.1	66.2	1.3	1.2	2.5
2034	6,661	27,978	47.5	83.2	33.7	67.5	1.3	1.2	2.6
2035	6,661	27,978	49.6	84.8	34.4	68.8	1.4	1.3	2.6
2036	6,661	27,978	51.8	86.5	35.1	70.2	1.5	1.3	2.7
2037	6,661	27,978	53.7	88.3	35.8	71.6	1.5	1.3	2.8
2038	6,661	27,978	58.3	184.6	36.5	73.1	1.6	2.0	3.6
2039	6,661	27,978	61.1	188.3	37.3	74.5	1.7	2.0	3.7

[3] Figures may not add up due to rounding.

Fiscal Years	A Demand Reduction (kW)	B Energy Reduction (MWh)	C Marginal Energy Cost per Unit ($/MWh)	D Generation & Bulk Transmission Capacity Marginal Unit Cost ($/kW-yr)	E Distribution Capacity Marginal Unit Cost ($/kW-yr)	F Non-bulk Transmission Marginal Unit Cost ($/kW-yr)	G Energy Savings ($ million) (=BxC)	H Capacity Savings ($ million) (=(D+E+F)xA)	I Total Savings ($ million)[3] (=G+H)
2040	6,661	27,978	64.9	192.0	38.0	76.0	1.8	2.0	3.9
Average	6,049	25,407	43.6	79.7	31.7	63.4	1.1	1.1	2.2

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1.2.2 Capacity Savings

Once it is fully implemented the Replacement Program is expected to reduce BC Hydro's peak demand by 6.7 MW. This reduction results in capacity savings associated with generation capacity, transmission and distribution.

Capacity savings are based on BC Hydro's Long Run Marginal Costs (LRMCs) for generation and bulk transmission capacity, for non-bulk transmission and for distribution. The average value of the annual capacity related savings is estimated to be $1.1 million per year.

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1 RS 1701 Marginal Cost Model

To develop the target revenue estimate after the LED conversion program, a marginal cost model was developed by adjusting fiscal 2021 RS 1701 revenue for the savings and marginal costs directly attributed to the program, which are: a) maintenance savings, b) electricity savings, c) program capital and installation costs, and d) undepreciated value of existing lights removed before their end of life.

7.1 Please provide details on how the Marginal Energy Cost per Unit (column C in table G-3) was developed/calculated.

7.1.1 Given that the wholesale market prices change on a daily/hourly basis, confirm or explain otherwise if BC Hydro intends to implement any true-up or review mechanism during the 20-year period. Please provide details.

7.1.2 Confirm, or explain otherwise, if these marginal energy costs (column C) include both BC Hydro's integrated and non-integrated systems. Please explain.

7.2 Please define/describe Generation & Bulk Transmission Capacity (column D), Distribution Capacity Marginal Unit Cost (column E) and Non-bulk Transmission Marginal Unit Cost (column F).

7.2.1 Confirm, or explain otherwise, if columns D, E and F include both BC Hydro's integrated and non-integrated system? Please explain.

7.3 Please explain what is meant by BC Hydro's system wide marginal costs in the calculation of electricity savings?

7.3.1 Confirm, or explain otherwise if this means both the integrated and non-integrated BC Hydro system.

7.4 In Table G-3, what is the value of Total Electricity Savings (column I) attributed to the NIA?

7.4.1 What is the value of Energy Savings (column G) attributed to the NIA?

7.4.2 What is the value of Capacity Savings (column H) attributed to the NIA?

7.4.3 Confirm, or explain otherwise how the NIA's LRMC $300/MWh (Fiscal 2015$)[2] is accounted for in the calculation of Electricity Savings in Table G-3? Please explain.

7.5 Confirm, or explain otherwise, that other financial models were considered to develop the target revenue estimate after the LED conversion program.

7.5.1 Explain why was the marginal cost model chosen as the best alternative.

8.0 Reference: Exhibit B-1 (Application), Section 5.3.2 (Customer Consultation and Influence on Rate Design), page 34; e 27; Appendix G – BC Hydro's Proposed Final Rate Schedule 1701 Financial Analysis, Table G-5, Table G-8.

3. Feedback on the proposed Early Removal Fee

The Early Removal Fee would allow BC Hydro to recover the undepreciated value and removal costs of the LED fixtures if they are removed before they are fully depreciated. Nine customers provided feedback on this matter. One customer, City of Surrey, voiced support for recovering costs from customers who requested early removals. Most customers expressed interest to see more details about this proposed charge. City of Burnaby does not support the charge and believes if an early removal charge is applied, the removed asset should be given to the customer to reuse.

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[2] BC Hydro Fiscal 2020 to 2021 Revenue Requirements Application, Exhibit B-5, BCUC IR 1.185.1. LRMC used for the NIA is $300/MWh (Fiscal 2015$) as the avoided energy cost. Any energy savings from DSM activities in the NIA would displace the need for incremental diesel generation.

Table G-5 RS 1701 Marginal Cost Model Outcomes

Fiscal Year	Electricity Savings ($ million)	Undepreciated Value of Existing HPS Lights ($ million)	One-time Investment Replacement Program Cost ($ million)	Maintenance Savings ($ million)	Net Savings ($ million)	Revenue without Replacement Program ($ million)	Planned Revenue after Savings[4] ($ million)
F2021	(0.1)	2.2	1.2	(0.5)	2.8	23.0	25.8
F2022	(0.6)	2.2	2.3	(1.3)	2.6	23.6	26.2
F2023	(1.3)	2.2	3.2	(1.3)	2.8	23.5	26.4
F2024	(1.7)	-	3.0	(1.3)	0.0	24.2	24.2
F2025	(1.9)		3.0	(1.3)	(0.2)	24.7	24.6
F2026	(1.9)	-	3.0	(1.4)	(0.2)	25.2	25.0
F2027	(1.9)	-	3.0	(1.4)	(0.3)	25.7	25.4
F2028	(2.0)	-	3.0	(1.4)	(0.4)	26.2	25.9
F2029	(2.1)	-	3.0	(1.4)	(0.5)	26.8	26.3
F2030	(2.1)	-	3.0	(1.5)	(0.6)	27.3	26.7
F2031	(2.3)	-	3.0	(0.8)	(0.1)	27.8	27.8
F2032	(2.5)	-	3.0	(0.2)	0.4	28.4	28.8
F2033	(2.5)	-	3.0	(0.3)	0.3	29.0	29.2
F2034	(2.6)	-	3.0	(1.4)	(0.9)	29.5	28.7
F2035	(2.6)	-	3.0	(1.4)	(1.0)	30.1	29.1
F2036	(2.7)		3.0	(1.4)	(1.1)	30.7	29.6
F2037	(2.8)		3.0	(1.4)	(1.2)	31.3	30.2
F2038	(3.6)		3.0	(1.4)	(1.9)	32.0	30.0
F2039	(3.7)		3.0	(1.4)	(2.0)	32.6	30.6
F2040	(3.9)		3.0	(1.3)	(2.2)	33.3	31.1

[4] Figures may not add up due to rounding.

1 **Table G-6 RS 1701 Rate Design and Pricing Model Summary**

				1	2	3	4	5
	LED RATE CATEGORY	**Formula**		**Average**	**< 50W**	**51-80W**	**81-120W**	**> 120W**
	BASIS FOR CALCULATION							
1	RS 1701 Street Lights		No.	90,480	5,217	46,952	35,958	2,353
2	RS 1755 Lights Converted		No.	370	30	269	71	-
3	Number of Fixtures	L1 + L2	No.	90,850	5,247	47,222	36,029	2,353
	LED REPLACEMENT COSTS							
4	Total Installed cost		$/Unit	693.51	557.76	629.86	790.39	790.39
5	NBV of Re-Used equipment (Arms)		$/Unit	158.55	158.55	158.55	158.55	158.55
6	Total Investment Related Costs	L4 + L5	$/Unit	852.06	716.31	788.41	948.94	948.94
	LED OPERATING COSTS							
7	Depreciation of Investment Related Costs		$/Unit/Year	40.69	33.90	37.51	45.54	45.54
8	LED Maintenance Cost		$/Unit/Year	6.10	6.10	6.10	6.10	6.10
9	Total Cost Excluding Electricity	L7 + L8	$/Unit/Year	46.79	40.01	43.61	51.64	51.64
	COST OF ELECTRICITY							
10	Average Wattage		W	90.6	39.0	75.0	114.0	162.0
11	Electricity Rate (from F2019 FACOS[5])		$/W/Month	0.0398	0.0398	0.0398	0.0398	0.0398
12	Cost of Electricity	L10 * L11 * 12	$/Unit/Year	43.29	18.63	35.82	54.45	77.37
	RATE DETERMINATION - F2021							
13	Annual LED Cost - Incl Electricity	L9 + L12	$/Unit/Year	90.09	58.63	79.43	106.09	129.01
14	Shared and Electrical Infrastructure Costs	To match R/C	$/Unit/Year	157.88	122.34	145.84	175.96	201.87
15	Recovered through Billing	L13 + 14	$/Unit/Year	247.97	180.97	225.28	282.05	330.88
16	LED Rate	L15 / 12	$/Unit/Month	20.66	15.08	18.77	23.50	27.57

				1	2	3	4	5
	LED RATE CATEGORY	**Formula**		**Average**	**< 50W**	**51-80W**	**81-120W**	**> 120W**
	RESULTS - F2021 Marginal Cost Basis							
17	HPS Rates (F2021)		$/Unit/Month	21.08	19.40	19.40	23.14	26.72
19	LED Rates (F2021)	L18	$/Unit/Month	20.66	15.08	18.77	23.50	27.57
20	LED Supplemental Charge (assumed, starting F2022)		$/Unit/Month	2.06	2.06	2.06	2.06	2.06
21	Effective Rate	L20 + L21	$/Unit/Month	22.72	17.14	20.83	25.56	29.63

8.1 Confirm, or explain otherwise if BC Hydro will receive any salvage value for the removed assets.

8.1.1 If so, where in Table G-5 is this captured in the Marginal Cost Model Outcomes?

8.2 Confirm, or explain otherwise if BC Hydro is intending to give the removed asset to the customer to reuse.

8.2.1 If so, under what terms is BC Hydro intending to do so?

8.3 Please confirm Table G-6 as line 18 appears to be missing and the formula column appears to have errors.

9.0 Reference: Exhibit B-1 (Application), Section 6.2.2 (RS 1755 Customer Consultation), page 46 – 47.

In addition, BC Hydro raised for discussion the proposed termination of RS 1755 at a Low Income Advisory Council (LIAC) meeting, held via a video call on September 2, 2020. LIAC members in attendance didn't provide opinions on the appropriateness of BC Hydro terminating RS 1755. However, the following feedback was provided:

• It is likely that some RS 1755 have low or fixed incomes, and may not be able to afford installation of a replacement light; and

• BC Hydro should consider providing funding to residential customers when necessary to avoid potential safety hazards should the light not be replaced.

9.1 Confirm, or explain otherwise, if BC Hydro has considered ways to support low-income customers to implementation of lighting when necessary to address potential safety hazards.

9.1.1 Has BC Hydro considered whether it can offer low-income funding specifically? Please provide details.

10.0 Reference: Exhibit B-1 (Application), Section 7.1 (Background and Need for Electric Tariff Amendments), page 56.

While customers generally provide timely and accurate notifications, errors or delays in a customer's notification of changes to unmetered equipment can result in billing inaccuracies that can exist for an extended period before they are identified, frequently beyond the periods of the back-billing limitations. During BC Hydro's recent billing reviews of RS 1702 billing, four customers were identified to be undercharged for periods potentially ranging from two years to 20 years, resulting in estimated under-collected revenues of approximately $500,000 or more because the customer did not provide timely notification of changes.

Moreover, BC Hydro has limited ability to audit unmetered services in ways that conclusively identify under or over-billing. BC Hydro utilizes its energy analytics tools to identify potential billing discrepancies; however, unmetered services generally have very low consumption and, therefore, variances between actual and billed consumption are difficult to distinguish. In addition, visual inspections may not be conclusive because in many cases the municipality's wiring for

unmetered lighting services is underground, making it very difficult to identify which lights are part of an unmetered service connection.

10.1 Confirm, or explain otherwise, if BC Hydro was able to recover these under-collected revenues of approximately $500,000 the four customers?

10.1.1 And if so, how were these under-collected revenues balances settled?

10.2 Confirm, or explain otherwise, if any other audits were done for any other street lighting rate schedules.

10.2.1 If so, what were the results?

10.2.2 How were any billing issues resolved?

10.3 Confirm, or explain otherwise, if BC Hydro intend to conduct regularly scheduled future audits to ensure compliance?

10.3.1 What is BC Hydro's plan to educate customers on these new tariff changes on under or over-billing?