

**BC Hydro
Public Electric Vehicle Fast Charging Service Rates Application**

Table of Contents	Page No.
A. Ratepayers Costs	1
B. Clean Energy Act.....	3
C. State of Charge	3
D. Public Engagement	3
E. Rate design	4

A. RATEPAYERS COSTS

1.0 **Reference: Need for Fast Charging Service Rates**
Exhibit #B-1, Section #1.1, p. #2-3
Ratepayers Costs

“As shown in the F2022 RRA, BC Hydro will have approximately 96 fast-charging stations in operation by the end of fiscal 2021 (i.e., March 31, 2021). However, there is currently no rate in effect for the fast charging service provided through those stations. BC Hydro files the Application seeking BCUC approval of the Proposed Rates for the fast charging service, for the main reasons discussed below.”

“First, in absence of the approved Proposed Rates, BC Hydro cannot collect any revenue from users of the fast charging service as a BCUC approved rate is required in order for BC Hydro to charge for the fast charging service. This means that absent BCUC approved rates for fast charging service, the entire cost for providing the fast charging service is recovered from all ratepayers.”

1.1 As BC Hydro (BCH) cannot collect any revenue from its EV customers for any costs related to the 96 fast-charging stations (FCS) in operation by the end of fiscal 2021 (i.e., March 31, 2021), what is the total cost for those 96 FCS that the ratepayers have incurred?

1.1.1 Will BCH recover those costs for the 96 FCSs from their EV customers in the future?

1.1.1.1 If not, why not?

2.0 **Reference: Rate Design Approach**
Exhibit #B-1, Section 4.1, pp. 25
The Equivalent of a Tank of Gas

“In addition, as suggested in the customer feedback, BC Hydro’s Proposed Rates are higher than the rate to charge at home, but less than that of operators such as Tesla and Petro Canada, and also less than the equivalent of a tank of gas.”

2.1 How did BCH arrive at the cost of an equivalent tank of gasoline to be at least \$20?

2.2 Explain why BCH uses Tesla (an EV manufacturer), which may be subsidizing its charging price through its EV sales, as an example to set its rates.

“To encourage station utilization while maintaining a level playing field with other fast charging station operators, the Proposed Rates are designed to align with prices of other operators, to fall within the range of prices that research indicates customers are willing to pay, and to collect sufficient revenue to recover at least the cost of electricity based on BC Hydro’s General Service rate schedules as further described below. Higher rates would reduce initial station utilization and BC Hydro expects this would reduce revenue recovery.”

While BCH suggests that higher rates would reduce initial station utilization and revenue recovery, the same is not necessarily true when we look at gasoline prices. As there is a need for transportation, an increase in price may result in a reduction of kWh sold but the revenue may stay the same. For BEVs, fuel switching is not an option.

- 2.3 Provide evidence of this claim as once an EV is purchased the options for providing energy are limited to that type of energy as it is for gasoline purchases and need overshadows price as important.

3.0 **Reference: Cost Recovery Calculations
Exhibit #B-1, Section 4.2, pp. 28-33
Scenarios**

“While BC Hydro presents the full cost of service-based rate under various utilization scenarios in section 4.2 below, at this time we do not believe that the station utilization is high enough to make such a rate feasible. Our Proposed Rates recover at least the cost of electricity (Energy and Demand) but are not expected to recover all of the station capital and maintenance costs at this time. Costs not recovered by the Proposed Rates will be recovered from all ratepayers.”

- 3.1 Not included in the proposed rates are labour costs associated with electric vehicle infrastructure 5 which are approximately \$800,000 per year.
 - 3.1.1 Please explain why this proposed rate is not unjust, unreasonable, unduly discriminatory or unduly preferential rate when it may provide for a preferential rate and a benefit to a small group of ratepayers (EV customers) resulting in a discriminatory rate being applied to other ratepayers (non- EV customers).
- 3.2 Based on Table 3, utilization Rate 3.7% the costs for an 80% charge (/12 hour) are: Scenario 1 = \$6.3; Scenario 2 = \$18.62; and Scenario 3 = \$31.80. All these amounts are significantly less than the equivalent gasoline cost of about \$80.
 - 3.2.1 Please provide the rationale and evidence to support the claim that “When the service was free, the average utilization was 15 percent, however as described in section 3.1, half of the potential station users indicated that they would stop using the service if a rate is introduced.” considering other options for EV charging that are available to EV owners. What will the impact to BCH be if the municipalities and the investor-owned utilities (IOU) also provide DCFC stations?
- 3.3 Please provide Charging Station Rate by Utilization and Cost Recovery Scenario tables for 25kW and 100kW Charging Stations in the same format as Table 3, 50kW.

B. CLEAN ENERGY ACT

4.0 **Reference: Legal Framework**
 Exhibit #B-1, Section 1.3.3, pp. 7-8
 CEA Section 18

Section 18 does not specify from whom the revenue should be collected. For fast charging stations that qualify as prescribed undertakings, BC Hydro (BCH) can recover costs from all ratepayers and not just from those who use the service.

- 4.1 While Section 18 does not specify from whom the revenue should be collected, does BCH intend to collect any portion of its revenue from all ratepayers and not just from those who use the service?
 - 4.1.1 If so, please provide the estimated dollar amount per year BCH estimates it will collect from those who do not use the service.
 - 4.1.2 Has BCH sought clarification on section 18 since BCH notes that it does not specify from whom the revenue be collected?
 - 4.1.2.1 If all revenue is collected from all ratepayers, is BCH suggesting that the rates would still be in accordance with the UCA?

C. STATE OF CHARGE

5.0 **Reference: BCH Fast Charging Station**
 Exhibit #B-1, Section 2.1, p. 10
 State of Charge (SoC) - Charging Losses above 80% Capacity

“The time required to charge an electric vehicle will also be dependent on what the vehicle can accept, and in many cases, a similar amount of electricity is dispensed from a 25 kW, 50 kW or 100 kW charging station once the vehicle battery exceeds 90 percent capacity.”

- 5.1 As charging the battery above 80% may double the losses¹ when compared to the 20%–80% SoC range, would BCH please provide additional justification for this statement or should the upper level of the SoC range be 80%?

D. PUBLIC ENGAGEMENT

6.0 **Reference: Personal Interviews**

¹
<https://reader.elsevier.com/reader/sd/pii/S2352484719310911?token=454694728B853DAA384DF91748305DCB8257BF9AC5286D507250451A75D44423363D46BFCF177425DF694B5A67DEA307&originRegion=us-east-1&originCreation=20210422022457>

Non-EV Owners

“From August 20, 2020, to September 15, 2020, BC Hydro conducted nine, one-hour interviews over the phone with electric vehicle drivers in B.C. to gather feedback. Interviewees were selected from a pool of electric vehicle drivers who have engaged with BC Hydro in the past, representing organizations such as Vancouver Electric Vehicle Association, Victoria Electric Vehicle Club, Electric Vehicle Peer Network, Fraser Basin Council, BCIT Smart Microgrid Applied Research Team.”

- 6.1 Why did BCH not also conduct a similar number of interviews with non-EV owners who are ratepayers and may have to pay for a portion of this prescribed undertaking?
- 6.2 Are the results of the survey asymmetric when non-EV owners are not included?

E. RATE DESIGN

- 7.0 **Reference: Rate Design**
Exhibit #B-1, Section 4.1, p. 26
Cost Comparison to Gasoline

BC Hydro’s Proposed Rates are higher than the rate to charge at home, but less than that of operators such as Tesla and Petro Canada, and also less than the equivalent of a tank of gas. For example, the average cost for a charging session at a BC Hydro fast-charging station is \$6. In comparison charging at a Tesla or Petro-Canada fast-charging station may be \$8 or more while charging at home under BC Hydro’s residential service rate schedule may be \$2 and a tank of gasoline may be at least \$20.

- 7.1 What is the estimated equivalent distance that one can travel using those costs for roughly equivalent vehicles?
- 7.2 Since Petro-Canada is a private sector company, why has BCH priced its FCS energy price below that of Petro-Canada?
 - 7.2.1 Does Petro-Canada vary its price by the FCS charger in use?
 - 7.2.2 Does BCH intend to compete with Petro-Canada in this area?
 - 7.2.2.1 If so, why should the Panel consider setting rates below those already in use by other FCS providers such as Petro-Canada?

- 8.0 **Reference: Rate Design**
Exhibit #B-1, Section 4.1, p. 26
Willingness to Pay

“...the Proposed Rates are designed to align with prices of other operators, to fall within the range of prices that research indicates customers are willing to pay,...”

- 8.1 As all ratepayers will be affected by the prescribed undertaking, why is that the EV customers’ willingness to pay taken into consideration when the cost of service should be considered for setting the rates?
 - 8.1.1 Do these rates discriminate against other ratepayers based on a “willingness to pay”

principle?

8.1.2 Do the EV owners have other options for charging that compete with BCH FCS where they can access energy at lower rates if they are unwilling to pay the proposed rate?

8.1.3 Will these lower proposed BCH prices negatively affect Petro-Canada's revenue from their stations?

8.1.3.1 What advantages does BCH have over the private sector when it comes to providing its FCSs?

9.0

Reference: Conclusion

Exhibit #B-1, Section 4.1, pp. 39-40

Level Playing Field

"The Proposed Rates take into consideration of several recommendation(s) from the EV Inquiry, such as, maintaining a level playing field for fast charging service operators through pricing that is comparable to that of other operators. The Proposed Rates are also set to a level that is expected to support station utilization and BC Hydro revenues."

9.1 As the Regional Districts and BC Municipalities are or are becoming involved in providing DC Fast Charging Stations (DCFCS), will BCH FCSs compete with them or compliment them on rates?

9.2 Can the Regional Districts or BC Municipalities provide these FCSs within their municipalities or districts with funding loans or other assistance from BCH as an alternate approach to BCH being directly involved in providing the FCSs and still be a prescribed undertaking?

9.2.1 What advantages do Regional Districts or BC Municipalities have when it comes to providing DCFCS over BCH or IOU (Petro-Canada)?

9.2.1.1 Are there any zoning advantages that BCH cannot access?

9.2.1.2 Are there any tax advantages that BCH cannot access?

9.2.1.3 Are there any government grant advantages that BCH cannot access?

9.2.1.4 Would these municipal DCFCS be exempt from regulation?

10.0

Reference: Rate Design

Exhibit #B-1, Section 4.1, p. 26

Bonbright

"Full cost recovery from those who use the service cannot be achieved with the station utilization levels expected over the near term, which limits their fairness. Current metering limitations constrain the Proposed Rates to being time-based which limit their economic efficiency."

10.1 As the BCH FCSs are prescribed undertakings and full cost recovery from those who use the service cannot be achieved with the station utilization levels expected over the near term, which limits their fairness, does Bonbright need to be considered in setting the rates or should the Panel be guided solely by Sections 18(2) and 18(3) of the Clean Energy Act and the UCA?

10.2 As the proposed rates admittedly have limited fairness, will BCH be requesting recovering these amounts in future rates?

11.0 **Reference: Public Engagement Feedback**
Exhibit #B-1, Appendix F, p. 17of42
Idling Fees

“Rates should be reasonable and include idling fees (ie. for DCFC charging time over 40 minutes) to encourage quicker turnovers.”

- 11.1 Why has BCH not included idling fees in the proposed rates?
- 11.2 Does BCH acknowledge that idling fees will lead to improved behaviour² at the FCSs?

12.0 **Reference: Monitoring and Evaluation**
Exhibit #B-1, Section 5, pp. 36-37, and Appendix A
Evaluation Report & Draft Order

“We propose to file the evaluation report and, if warranted, an application to propose new rate(s) for fast charging service, by March 31, 2024.”

- 12.1 Should the Panel order BCH to file the evaluation report and specify the format for such a report so that the financial information is easily and readily available for any re-pricing, redesign or setting of rates?

13.0 **Reference: Provincial Taxes**
Exhibit #B-1, Appendix B, pp. 36-37
Rate Schedule 1561

BC Provincial Fuel Taxes (Cents/Litre)

	Gasoline	Diesel
British Columbia – Vancouver Area (4)	27.00	27.50
British Columbia – Victoria Area (4)	20.00	20.50
British Columbia – Rest of province (4)	14.50	15.00

The Saskatchewan government³ recently introduced amendments to The Fuel Tax Act that will require owners of electric passenger vehicles registered in Saskatchewan to pay a new annual road-use fee of \$150 starting Oct. 1, 2021. Those drivers of gas- or diesel-powered vehicles pay for provincial highway maintenance through a fuel tax at the pump, but owners of electric vehicles weren’t contributing an

² <https://bc.ctvnews.ca/mobile/electric-vehicle-drivers-not-immune-to-conflict-at-the-pump-1.4656765?cache=yes?clipId=89926>

³ <https://www.cjme.com/2021/04/20/sask-govt-rolls-out-ev-road-use-fee-vaping-tax-as-promised-in-budget/>

equal amount.

While BCH's application and rates only touch on provincial taxes, it does not address the loss of revenue as EV owners are not subject to the provincial fuel tax.

- 13.1 Does BCH intend to address this matter later in its rate review or will it be left to the Commission to address it with the BC Government?
 - 13.1.1 Looking forward, which of the two options, a provincial energy/fuel tax on kWh used or a flat rate such employed by Saskatchewan, would be more favourable and in the public interest to recommend to the BC Government?
- 13.2 As a portion of these taxes goes to the various Transportation Authorities including Translink, would it be in the public interest that EV owners pay a tax on energy used since some of these funds support highways, bridges and mass transit in the province?
- 13.3 Is BCH able to provide an estimate of the amount of fuel tax not collected by year caused by the introduction of EVs in BC?