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March 5, 2021

Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Public Electric Vehicle Fast Charging Rate Application (the Application)

BC Hydro writes to file its Application pursuant to sections 59 to 61 of the *Utilities Commission Act* (**UCA**) for approval of Rate Schedules 1360 – Public Electric Vehicle Fast Charging Service (25 kW Fast Charging Stations), 1560 - Public Electric Vehicle Fast Charging Service (50 kW Fast Charging Stations) and 1561 - Public Electric Vehicle Fast Charging Service (100 kW Fast Charging Stations) for use for public fast charging of electric vehicles. This Application was developed in consideration of the BCUC's recommendations from Phase 2 of "An Inquiry into the Regulation of Electric Vehicle Charging Service".

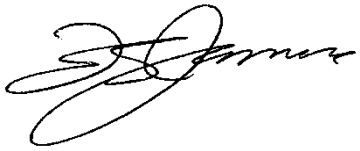
On June 22, 2020, the Government of British Columbia issued Order in Council No. 339 amending the Greenhouse Gas Reduction (Clean Energy) Regulation (**GGRR**) by adding provisions that make certain electric vehicle fast charging stations "prescribed undertakings" (section 5 of the GGRR). On December 22, 2020, BC Hydro filed its Fiscal 2022 Revenue Requirements Application **(F2022 RRA)** in which BC Hydro explained how its fast charging stations meet the requirements of section 5 of the GGRR and qualify as prescribed undertakings for cost recovery in rates pursuant to section 18 of the *Clean Energy Act*. Questions relating to whether BC Hydro's fast charging stations meet the requirements of a "prescribed undertaking" under section 5 of the GGRR are addressed in the F2022 RRA.

The rates applied for in this Application are for service provided through those fast charging stations that are "prescribed undertakings" as demonstrated in the F2022 RRA proceedings. The rates are intended to collect revenue from the users of the fast charging service which will help minimize cost impact on all ratepayers.

Pursuant to section 90 of the UCA, BC Hydro also respectfully requests interim approval of the proposed Rate Schedules 1360, 1560 and 1561 on a non-refundable and non-collectible basis by April 1, 2021 in order for the rates to take effect on May 1, 2021. Final approval of those Rate Schedules will be following the conclusion of the regulatory proceeding for the Application. Interim approval is requested on a non-refundable and non-collectible basis due to administrative limitations associated with refunding or collecting for the fast charging service.

For further information, please contact Anthea Jubb at 604-623-3545 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Fred James
Chief Regulatory Officer

ms/ma

Enclosure

BC Hydro
Power smart

BC Hydro Public Electric Vehicle Fast Charging Service Rates Application

March 5, 2021

BC Hydro

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1 Introduction

BC Hydro is filing the Public Electric Vehicle Fast Charging Service Rates Application **(Application**), pursuant to sections 59 to 61 of *the Utilities Commission Act* **(UCA),** to seek the approval of the British Columbia Utilities Commission (**BCUC** or **Commission**) for new rates for public electric vehicle fast charging station service (**fast charging service**) under the proposed three new Rate Schedules (**RS**) 1360, 1560 and 1561 (individually, **Proposed Rate**; or collectively, **Proposed Rates**) based on the power level of a fast charging station.[1] More specifically, BC Hydro proposes a time-based rate for 25 kW, 50 kW and 100 kW fast charging stations, at 12 cents per minute, 21 cents per minute, and 27 cents per minute respectively. RS 1360 is a Small General Service Rate Schedule (under 35 kW), while RS 1560 and RS 1561 are Medium General Service Rate Schedules (35 kW or Greater and Less Than 150 kW).

Pursuant to section 90 of the UCA, BC Hydro also requests interim approval of the Proposed Rates on a non-refundable and non-collectible basis by April 1, 2021 in order for the rates to take effect on May 1, 2021. Final approval of the Proposed Rates will be following the conclusion of the regulatory proceeding for the Application. Interim approval is requested on a non-refundable and non-collectible basis due to administrative limitations associated with refunding or collecting for the fast charging service, as further described in section 6.

On June 22, 2020, the Government of British Columbia issued Order in Council No. 339 **(OIC 339),** amending the Greenhouse Gas Reduction (Clean Energy) Regulation (**GGRR**) by adding provisions that make certain electric vehicle fast charging stations “prescribed undertakings” (section 5 of the GGRR). OIC 339 is

[1] A “fast charging station” in this Application refers to a fixed device capable of charging an electric vehicle using a direct current.

included as Appendix G to the Application. On December 22, 2020, BC Hydro filed its Fiscal 2022 Revenue Requirements Application **(F2022 RRA)** in which BC Hydro explained how its fast charging stations meet the requirements of section 5 of the GGRR and qualify as prescribed undertakings for cost recovery in rates pursuant to section 18 of the *Clean Energy Act*. The fast charging service under the Proposed Rates in the Application is provided through those fast charging stations that are "prescribed undertakings" as demonstrated in the F2022 RRA proceedings.[2] The Proposed Rates are intended to collect revenue from the users of the fast charging service to recover not only the cost of electricity for the fast charging service but also partially recover BC Hydro's fast charging station capital and maintenance costs. This will help minimize cost impact on all ratepayers.

1.1 Need for Fast Charging Service Rates

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. Under section 18 of the *Clean Energy Act*, BC Hydro is allowed "to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to

[2] Unless otherwise noted, when "fast charging station" is used in this Application in regards to a station owned by BC Hydro, it refers to a station that is a "prescribed undertaking" under section 5 of the GGRR.

the prescribed undertaking."[3] The Proposed Rates, will allow BC Hydro to collect revenue to recover as much as practical of the cost of providing the fast charging service from users of the service, which will reduce costs that must be recovered from all ratepayers. How this is achieved is further described in section 4 below.

Second, the Application is responding to the following statement in Commission Order No. Order G-246-20, dated October 2, 2020, where the BCUC considered, among other things, expenditures associated with BC Hydro's electric vehicle charging infrastructure in the context of BC Hydro's fiscal 2020 to fiscal 2021 revenue requirements:

> "The panel encourages BC Hydro to bring forward its proposed rate design application for EV charging stations as soon as possible. Under the UCA, BC Hydro is not able to charge for EV charging services without a rate approved by the BCUC."[4]

Third, the Proposed Rates are developed in consideration of the BCUC recommendation that non-exempt utilities (like BC Hydro) develop a separate rate and tariff for operating any level of fast charging service[5] as further discussed in section 1.3.1.

Finally, based on feedback from our customers, there is support for BC Hydro to now implement rates for our fast charging service. For example, almost two thirds of survey respondents indicate it is reasonable to charge a rate for the use of public fast charging stations, as further explained in section 3.

[3] Section 18(2) of the *Clean Energy Act*.
[4] Order No. G-246-20, at page 94.
[5] Phase 2 Report, in the Inquiry into the Regulation of Electric Vehicle Charging Service, at page 41.

1.2 Requested Order

BC Hydro requests that the Proposed Rates be approved on a final basis upon the conclusion of the proceeding for the Application. BC Hydro also requests that RS 1360, RS 1560 and RS 1561 be approved on an interim, non-refundable and non-collectible basis effective May 1, 2021. Interim approval is requested in order to commence collecting revenue from fast charging service Customers as soon as practical, for the reasons described in section 1.1. To refund or collect the difference between final and interim approved rates is not practical for the reasons described in section 6.

BC Hydro proposes to complete and file with the BCUC in fiscal 2024 an evaluation of RS 1360, RS 1560 and RS 1561 to inform whether any changes to the Proposed Rates should be made based on factors such as station utilization, customer and stakeholder feedback, industry developments, as well as potential developments to metering and billing technologies. Monitoring and evaluation of the Proposed Rates are further discussed in section 5.

Draft forms of the interim and final Orders are provided in Appendix A, and the proposed RS 1360, RS 1560 and RS 1561 are included in Appendix B.

1.3 Legal and Regulatory Context

1.3.1 BCUC Electric Vehicle Inquiry

On January 12, 2018, the BCUC established “An Inquiry into the Regulation of Electric Vehicle Charging Service” (**EV Inquiry**) to review the regulation of electric vehicle charging service in B.C. Regulatory issues within the scope of the EV Inquiry included the level of regulation necessary in the electric vehicle charging services market and the rates for the charging service. The EV Inquiry was undertaken in two phases.

Phase 1 examined the electric vehicle charging services market in general and provided recommendations to the Government of B.C. The BCUC issued Order No. G-66-19, exempting electric vehicle charging service providers that are not otherwise public utilities, as well as landlords and strata corporations, from regulation under Part 3 of the UCA other than safety.[6]

Phase 2 focused on and clarified the role of "non-exempt public utilities" (e.g., BC Hydro and FortisBC Inc.) in providing the public electric vehicle charging service. Findings from the Phase 2 EV Inquiry[7] that BC Hydro has considered in the design of the Proposed Rates include:

1. It is in the public interest to ensure that the playing field remains as level as possible. There is an opportunity for thoughtful regulation to ensure that non-exempt public utility investments do not crowd out exempt utility investments.
2. Regulatory oversight can help mitigate ratepayer risk and potential impact on exempt utilities.
3. Non-exempt public utilities should develop a separate rate and tariff (or a separate class of service) for any operators utilizing any level of charging, other than Level 1 or 2.
4. It is in the public interest for non-exempt public utilities to provide a transparent wholesale pricing mechanism that applies to all operators of EV charging

[6] The Phase 1 BCUC report can be found at https://www.bcuc.com/ApplicationView.aspx?ApplicationId=613.

[7] The Phase 2 BCUC report can be found at: https://www.bcuc.com/Documents/Proceedings/2019/DOC_54345_BCUC%20EV%20Inquiry%20Phase%20Two%20Report-web.pdf.

facilities other than Level 1[8] and Level 2,[9] including the non-exempt public utility itself.

The Application addresses the findings above as follows. First, in the Application, BC Hydro proposes pricing a rate that is comparable with that offered by other fast charging station operators, which will help ensure the playing field remains as level as possible and exempt utility investments are not crowded out. This is discussed in sections 3.3 and 4. Second, regulatory oversight on BC Hydro's fast charging service is achieved with the Application. Third, the Proposed Rates are separate from other BC Hydro rates and services, allowing BC Hydro to collect data, review and recommend any changes to the Proposed Rates in an evaluation to be completed in fiscal 2024 as further discussed in section 5. And finally, the Proposed Rates in the Application provide transparency and to ensure playing field remains as level as possible, the Proposed Rates are derived from the pricing mechanism of the General Service, which is commonly applied to other fast charging service providers in BC Hydro's service territory, as further discussed in section 4.

1.3.2 BC Hydro's F2022 Revenue Requirements Application

In the F2022 RRA**,** BC Hydro describes the deferral account mechanism in place to ensure that all revenues collected through the Proposed Rates will be to the benefit of all ratepayers.

Costs associated with electric vehicle charging stations that meet the requirements of section 5 of the GGRR are included in BC Hydro's F2022 RRA for fiscal 2020, fiscal 2021 and fiscal 2022. In the F2022 RRA, BC Hydro is seeking approval to establish a regulatory account to defer any actual operating and maintenance costs, amortization, and cost of energy amounts with respect to the electric vehicle

[8] Level 1 charger uses a connection to a standard 120-volt outlet.
[9] Level 2 charger uses a connection to a 240-volt outlet, like those used by ovens and clothes dryers.

charging stations for fiscal 2020, and fiscal 2021 that meet the definition of a prescribed undertaking under section 5 of the GGRR.[10] Fiscal 2022 costs related to prescribed undertakings are also included in the F2022 RRA..

In the F2022 RRA BC Hydro did not forecast any revenues from service related to electric vehicle stations because BC Hydro has no approved rates for providing the service. Only costs are included in BC Hydro's F2022 RRA. Accordingly, there were no revenue amounts recorded in the Electric Vehicle Costs Regulatory Account for fiscal 2020 and fiscal 2021.

Any revenues collected under the Proposed Rates for public electric vehicle fast charging service will be captured in BC Hydro's Cost of Energy Variance Accounts, (to the extent that they contribute to an overall variance compared to planned revenues in the year), such that ratepayers will get the benefit of these revenues in future periods.

1.3.3 Legal Framework

As discussed above, the fast charging stations meeting the criteria of section 5 of the GGRR are prescribed undertakings and the costs incurred with respect to the stations are guaranteed recovery in rates under section 18 of the *Clean Energy Act*.

Sections 18(2) and 18(3) of the *Clean Energy Act* describes the BCUC's role in the setting of rates related to prescribed undertakings:

> (2) In setting rates under the *Utilities Commission Act* for a public utility carrying out a prescribed undertaking, the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking.

[10] Please refer to BC Hydro's response to BCUC IR 1.3.6.1, CEABC IRs 1.7.6 and 1.7.6.4 in BC Hydro's Fiscal 2022 Revenue Requirements Application.

> (3) The commission must not exercise a power under the *Utilities Commission Act* in a way that would directly or indirectly prevent a public utility referred to subsection (2) from carrying out a prescribed undertaking.

Section 18 does not specify from whom the revenue should be collected. For fast charging stations that qualify as prescribed undertakings, BC Hydro can recover costs from all ratepayers and not just from those who use the service. The Proposed Rates, if approved, would allow BC Hydro to collect revenues directly from those who use the fast charging service, which will reduce costs that need to be recovered from all ratepayers.

Additionally, the rate setting functions of the BCUC are governed by sections 58 to 61 of the UCA, and the BCUC has considerable discretion in setting rates pursuant to sections 59 and 60 of the UCA. Section 60(1)(b) provides that in setting a rate, the BCUC "must have due regard to the setting of a rate that: (i) is not unjust and unreasonable within the meaning of section 59; (ii) provides the public utility for which the rate is set a fair and reasonable return on any expenditure made by it to reduce energy demand; and (iii) encourages public utilities to increase efficiency, reduce costs and enhance performance". When setting a rate, the BCUC must also "consider all matters that it considers proper and relevant affecting the rate". BC Hydro respectfully request that the BCUC approve the Proposed Rates as just and reasonable.

1.4 Proposed Regulatory Process

BC Hydro requests an interim approval of RS 1360, RS 1560 and RS 1561 by April 1, 2021 in order for the Proposed Rates to take effect May 1, 2021, as BC Hydro requires one month to prepare for the implementation of approved rates.

As outlined in Table 1 below, BC Hydro proposes one round of information requests **(IRs)** at this time given the relatively narrow scope of the Application.

Table 1 Proposed Regulatory Process

Action	Date
Filing of Application	March 5, 2021
Interim approval granted for RS 1360, RS 1560 and RS 1561 on a non-refundable and non-collectible basis	April 1, 2021
Round 1 BCUC IRs	April 6, 2021
Round 1 Intervener IRs	April 13, 2021
BC Hydro responses to Round 1 IRs	May 10, 2021
Further Process	To be determined

BC Hydro requests that IRs be received no earlier than April 1, as many of the resources required to respond to the IRs will be unavailable between March 11 and April 1 due to IRs expected in BC Hydro's Street Lighting Rates Application Proceeding as per BCUC Order No. G-43-21. In addition, we request that BC Hydro responses to Round 1 IRs be due no earlier than one week after the effective date of the interim Proposed Rates, which is proposed to be May 1, 2021. Many resources required to respond to IRs will be required to work on the rate implementation leading up to the effective date.

1.5 Communications

All communications regarding this proceeding should be addressed to:

Anthea Jubb Senior Regulatory Manager, Tariffs BC Hydro 16th Floor 333 Dunsmuir Street Vancouver, BC V6B 5R3 Telephone: 604-623-3545 Email: bchydroregulatorygroup@bchydro.com	Song Hill Senior Solicitor & Counsel BC Hydro 16th Floor 333 Dunsmuir Street Vancouver, BC V6B 5R3 Telephone: 604-623-4065 Email: song.hill@bchydro.com

2 Background

2.1 BC Hydro's Fast Charging Stations

The Federal and Provincial Government provided grants to build charging stations, which BC Hydro deployed strategically to meet the needs of potential electric vehicle charging service users. Fast charging stations along highway corridors make inter-city travel in an electric vehicle possible, and fast charging stations in urban and suburban locations provide alternatives for electric vehicle drivers who do not have access to charging stations at home or work. Fast charging service may also be needed if the electric vehicle is in heavy use and a sufficient charge cannot be achieved with the more widely available Level 2 charging. A Level 2 charger with charging capacity of 3.6 kW to 7.2 kW can take six to eight hours to charge an electric vehicle.

The time required to charge an electric vehicle is dependent on the vehicle battery size, battery charge level when fast charging commences, and the outdoor air temperature. A 50 kW fast charging station can charge an electric vehicle to 80 per cent within 30 to 40 minutes, depending on the size of the battery and how depleted the battery is when charging commences. A 25 kW charging station can take up to twice as long to charge as a 50 kW station, depending on the starting state of charge and the electric vehicle make and model. A 100 kW fast charging station may not double the charging speed of a 50 kW station unless the vehicle is capable of being charged at this higher power level.

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 per cent capacity.

The majority of BC Hydro's fast charging stations have a nameplate capacity of 50 kW, though BC Hydro will be providing 25 kW and 100 kW stations in some locations. BC Hydro maintains a number of 25 kW stations in inventory, mainly as temporary replacements of 50 kW stations undergoing maintenance and repair, when replacement parts for the 50 kW stations are not readily available or the stations cannot be repaired on-site. A 25 kW station may be temporarily installed to maintain fast charging availability at the site. The 25 kW stations are also useful in locations wherein only single-phase electricity is available or there are other electrical service constraints.

BC Hydro currently has one 100 kW charging station, which is undergoing a period of testing before it is deployed to a site. Plans for deploying more 100 kW fast charging stations have not been finalized and will be subject to availability of government funding and suitability for potential sites.

2.2 Metering for Fast Charging Station Service

The Proposed Rates are time based. Each charging station has a built-in timing device, which will measure the charging time by the second. The total time for each charging session will be displayed in minutes and seconds shown on the billing receipt at the end of each charging session.

Although customer and stakeholder support for an electricity-based or a combination electricity-and-time-based rate was expressed during BC Hydro's public and stakeholder consultations as discussed in section 3 below, only a time-based rate is possible at this time due to the lack of a Measurement Canadian approved standard to measure direct current (**DC**) power. While the electricity provided to the fast charging station, including the charging equipment, lighting and ancillary equipment (e.g., heating and cooling), can be metered with current Measurement Canada approved revenue metering equipment, there is no Measurement Canada approved

solution measuring the electricity dispensed from the station to the battery of the electric vehicle.

The American National Standards Institute (**ANSI**) metering working group is currently developing a DC metering standard (ANSI C12.32), which will establish acceptable performance criteria for revenue grade DC kWh energy and kW demand meters. BC Hydro has been monitoring the development of the new DC metering standard. The new standard is currently under review by various North American utilities and equipment manufactures for formal approval.

In addition to the standards development process, BC Hydro will also participate in the Measurement Canada initiated public consultation process that will start in early 2021. This process is expected to develop performance-based standards that would allow existing and new electric vehicle charging stations that meet established technical standards to charge based on kilowatt-hours (**kWh**) consumed. The expected timeline for this public consultation process is over the next 18 months.

3 Public Engagement, Market Research and Jurisdiction Review

3.1 Customer Research and Insights

BC Hydro conducted a series of personal interviews and an online survey to better understand the public's sentiment around potential rates for fast charging service.

Personal Interviews

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. Interviewees were also selected to be representative of demographics such as region, housing type, electric vehicle use and length of electric vehicle ownership. Interviewees were asked for their feedback on:

- Preferred charging rates for 50 kW fast charging service (20 cents per minutes, 25 cents per minute or 30 cents per minute);
- Whether rates should vary by station power levels (e.g., 25 kW and 100 kW); and
- Potential future pricing models.

Results

- Most interviewees supported a 20 cents per minute rate, indicating a preference for the lowest rate. They stated that the 30 cents per minute rate was too high, which would influence their decision to not use the fast charging service.
- There was consensus that the rate for fast charging station service should vary correspondingly with the power levels of a charging station. That is, the rate for using a 100 kW fast charging station should be higher than the rate for a 50 kW fast charging station.
- Regarding other potential pricing structures, interviewees overwhelmingly supported an electricity-based rate over a purely time-based rate. There was also support for a time-varying rate whereby the rate is lower overnight.

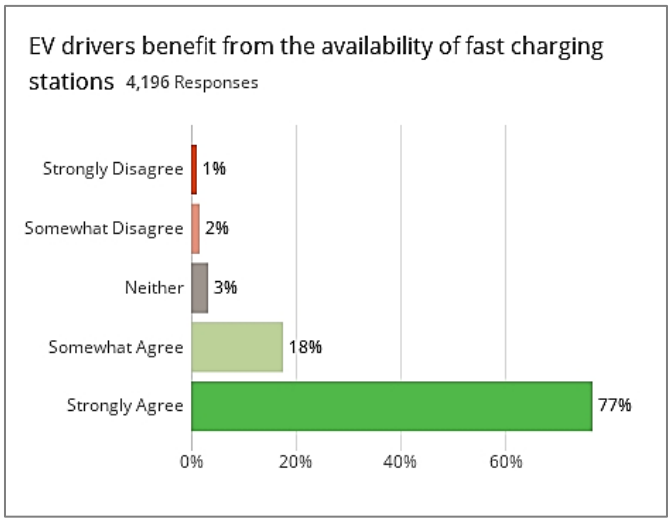
The interview guideline is provided in Appendix C.

Survey

BC Hydro commissioned Leger[11] to conduct a web survey regarding electric vehicle fast charging service rates. The survey was conducted from August 26, 2020 to September 7, 2020. The survey, which returned 4,196 responses from 11,398 survey invitations, asked respondents for their opinion on paying to use fast charging station services and provided the opportunity to provide general feedback on rates and user experience. The response rate of 37 per cent provides confidence that the results reflect the sentiment of a broad population of potential fast charging station users. Appendix D to the Application provides further information on the survey and detailed results.

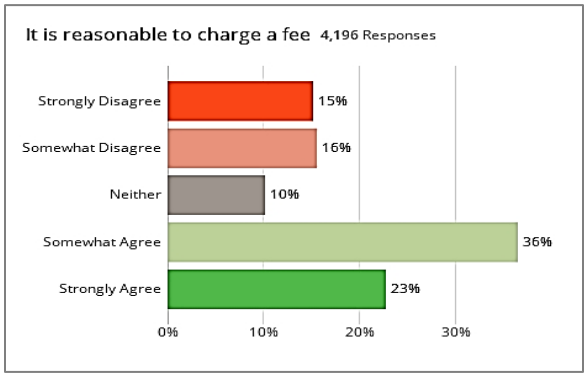
Quantitative Results

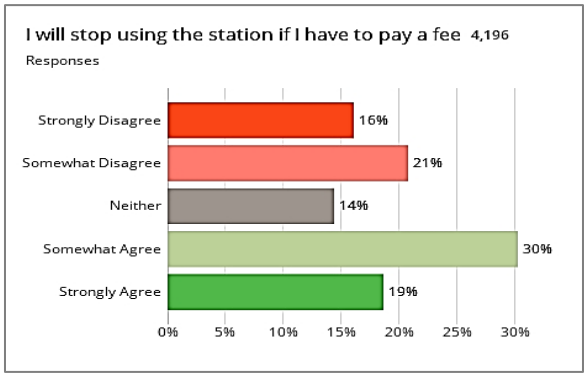
- *General*: Most (94 per cent) respondents agree that electric vehicle drivers benefit from the availability of public fast charging stations.

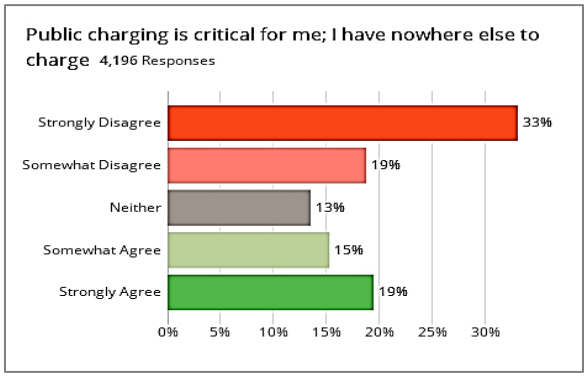


[11] Information about Leger can be found at: https://leger360.com/about.

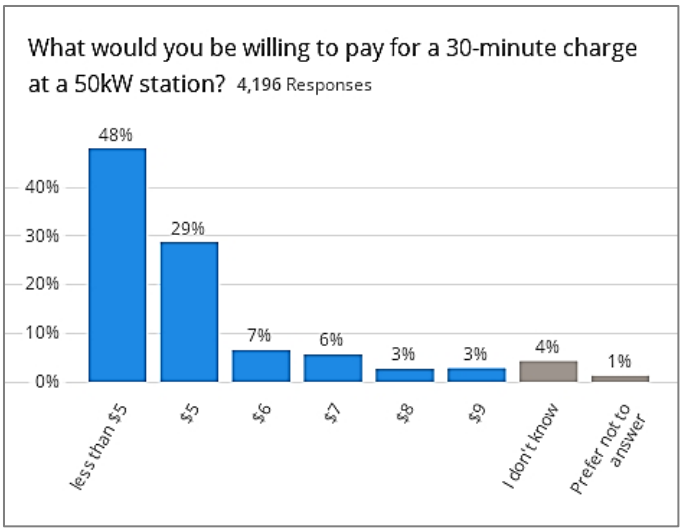
- *Support for a fee*: While almost two-thirds (59 per cent) indicate it is reasonable to charge a rate for the use of a public fast charging station, about half (49 per cent) indicate they would stop using the service if a rate is introduced. One-third (34 per cent) indicate public charging service is critical to them and they have nowhere else to charge.



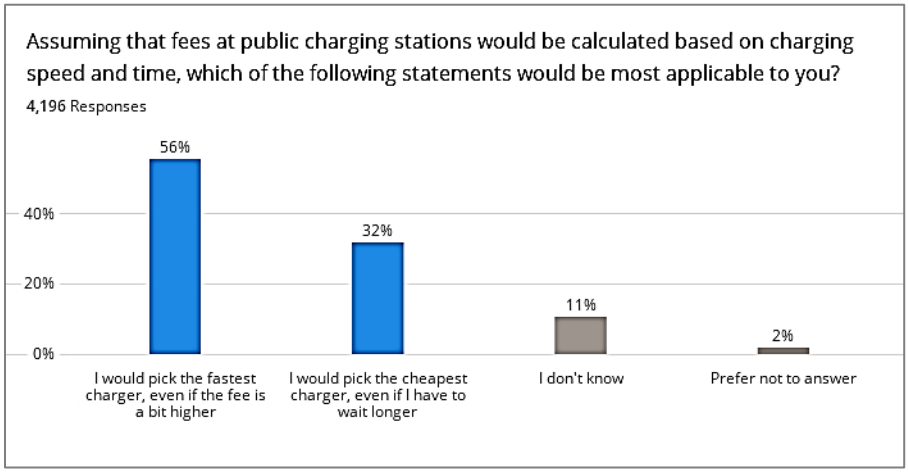




- *Price*: If a 50 kW charging station service includes most of the features important to them – such as multiple stations per site (to reduce waiting time) and easy-to-find and safe locations that are close to amenities – half (48 per cent) of respondents would be willing to pay less than $5 for a 30-minute charging session and almost one-third (29 per cent) would be willing to pay $5. This translates to most (77 per cent) willing to pay approximately 17 cents per minute or less.

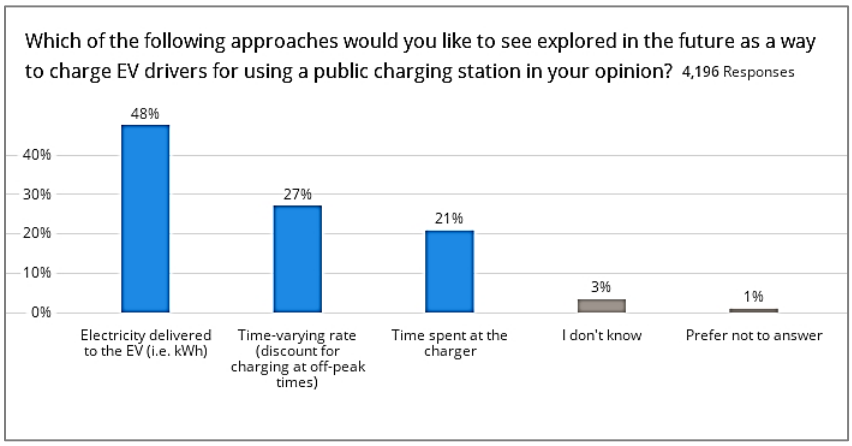


- *Price and power levels*: More than one-half (56 per cent) would pick the fastest charging station even if the fee is a bit higher. One-third (32 per cent) would choose the least expensive charging station even if it means a longer wait time.



- *Other approaches*: About half (48 per cent) would like to see BC Hydro explore electricity-based pricing, and one-quarter (27 per cent) would like to see

BC Hydro explore the idea of providing a time-varying rate (i.e., discount for charging at off-peak times).



Qualitative Results

The survey also gave respondents the opportunity to provide any other feedback regarding potential fast charging service rates. 2,149 respondents provided such feedback, a high-level summary of which is provided below:

- *Keep it free*: Respondents who want to keep this service free mention the availability of free fast charging service as one of the factors they use to justify the expense of an electric vehicle purchase, and that a fee "punishes" drivers who are doing their part for the environment. Some would like to postpone the introduction of a rate until electric vehicle adoption reaches some critical mass. Others would like for BC Hydro to focus on improving station reliability and expanding the network before charging a rate for the service.
- *Support a fee*: Respondents who support a rate shared their thoughts about the ideal price point, which they indicate should be low enough to encourage electric vehicle adoption. They prefer that BC Hydro charges less than other fast charging station operators such as Tesla and Petro-Canada, and less than

the equivalent of a tank of gas. To discourage drivers who have the option to charge at home from charging at public stations, respondents recommend the rate be higher than the rate to charge at home.

- *Time- versus electricity-based pricing*: Respondents overwhelmingly favour electricity-based pricing. Time-based pricing is viewed as unfair due to variability in the amount of electricity dispensed from a charger arising from factors such as the electric vehicle make and model and the outside air temperatures. Time-based pricing has some support from those who believe it might encourage drivers to not linger too long at the station.
- *Other feedback on rates:* Respondents would like BC Hydro to do more to enforce time limits at stations and suggest a hybrid option that charges drivers by electricity and then by time. Others support the implementation of time-varying rates, discounted rates for users of the fast charging stations who are also a BC Hydro Residential or Commercial Service customer, location-based pricing or monthly subscriptions. Respondents would also like BC Hydro to do more to incentivize at-home charging.
- *How to pay*: Some respondents would like BC Hydro to add the amount billed for fast charging service to their Residential Service bills. Some would like BC Hydro to make it easier to pay (e.g., “tap”) and provide other ways to pay (i.e., not just by credit card).

Key Takeaways from Customer Research

In analyzing the personal interviews and survey results, we observe the following key takeaways:

- A rate should be low enough to not discourage electric vehicle adoption;

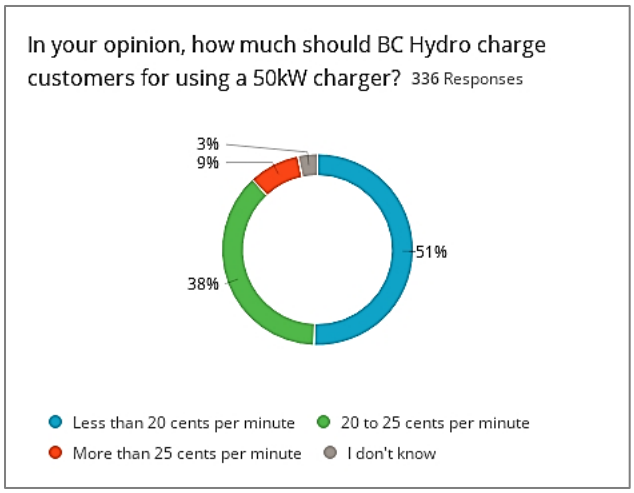
- A rate could lead to higher expectations of user experience and station reliability;
- An electricity-based rate is overwhelmingly preferred to a time-based rate; and
- A rate may help free up fast charging stations for those who have nowhere else to charge.

3.2 Public Engagement Workshop

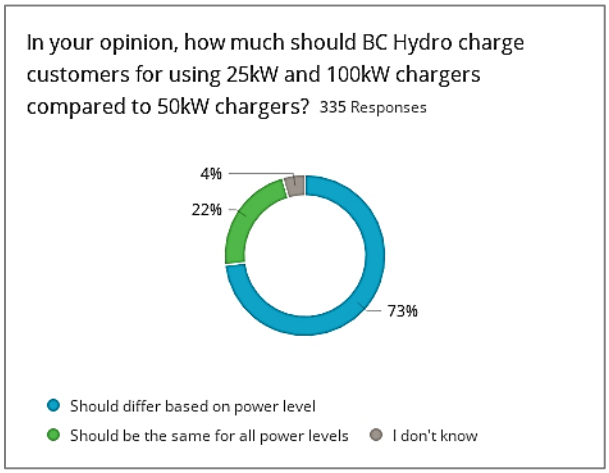
BC Hydro hosted a fast charging service rate design virtual workshop through WebEx on December 7, 2020. The workshop invitation was sent to electric vehicle drivers and individuals who responded to the survey discussed in section 3.1 above, as well as to other stakeholders and interested parties. In total, 2,970 invitations were sent and 320 registrants participated in the workshop. The workshop presentation is included as Appendix E.

Workshop participants were asked to complete a feedback form, which required responses to ten pre-determined questions, and 359 feedback forms were received. Replies to the feedback form were analyzed using the Qualtrics research tool. The final report is included as Appendix F. The following key results emerge from the feedback:

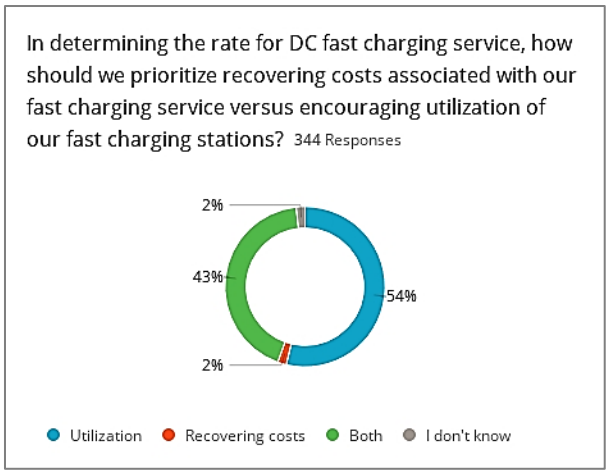
- Fifty-one per cent of respondents indicate that the rate for a 50 kW charger should be less than 20 cents per minute, with an additional 38 per cent indicating that it should be between 20 cents to 25 cents per minute.



- A strong majority (73 per cent) believed that the rate should vary based on station power level.



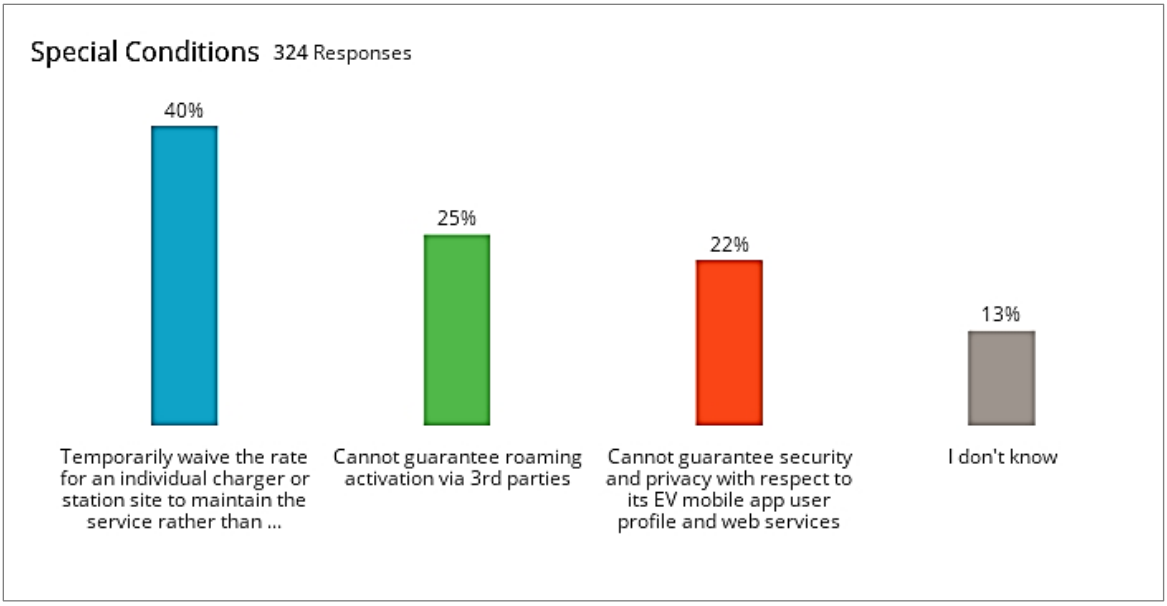
- Respondents were roughly split on whether the rate should prioritize utilization or both utilization and cost recovery (54 per cent and 43 per cent, respectively).



Respondents were also asked to indicate which special conditions BC Hydro should adopt as part of its fast charging service. Respondents had the option of selecting one or more of the following conditions:

1. BC Hydro can temporarily waive the rate for an individual charger or station site to maintain the service rather than shutting down individual chargers if they are not fully functioning (e.g., due to charger only partially functioning, maintenance, new charger commissioning, IT system errors, or issues with physical access, local cellular network, lighting and signage).
2. BC Hydro can treat electric vehicle drivers as a unique customer group but cannot guarantee security and privacy with respect to its EV mobile app user profile and web services required to use the charging station service.
3. BC Hydro can provide additional charger activation options but cannot guarantee roaming activation via third-parties.

Providing BC Hydro the ability to temporarily waive charging fees due to operational, technical or network issues overwhelmingly received the most support from respondents.



Feedback results from the workshop survey are attached in Appendix F.

3.3 Jurisdiction Review

BC Hydro has conducted a review of the rates for electric vehicle fast charging service provided by other operators both inside and outside B.C. The rates are as of February 2, 2021, based on publicly available information on PlugShare.com. From this review, BC Hydro notes:

- All operators charge the service based on time-based units, i.e., cents per minute; This is because metering and billing limitations do not currently allow for a rate in power or energy-based units, such as cents per kilowatt-hour or dollars per kilowatt. This limitation is further described in section 2.2;
- The most common fast charging service is provided through 50 kW charging stations, although some operators also offer service through higher-powered stations, for instance stations up to 350 kW power level in the case of PetroCanada;

- Typical rates for a 50 kW fast charging station service are between 20 to 30 cents per minute; and
- There are differences in the power level, functionality and amenities between stations. For instance, PetroCanada stations have on-site amenities such as staff, restrooms and a retail store, ample lighting and high levels of maintenance due to staff on-site.

Table 2 Jurisdiction Review of Rates for Fast Charging Service as of February 2, 2021

Operator	Service	Rate (cents/min) @ Power Level	Number of Sites and Fast Chargers in B.C.
City of North Vancouver	• Single 50 kW charger	20¢ 50 kW	• 1 site • 1 charger
City of Vancouver	• Single or 2x 50 kW chargers	21¢ 50 kW	• 5 sites • 9 chargers
Electrify Canada	• 4x chargers up to 350 kW • Ample lighting, major retail parking lots	27¢ <90kW* 57¢ >90kW* *20% member discount available for $4/month	• 3 sites (additional 5 sites under construction) • 12 chargers
FortisBC	• Single or 2x 50 kW chargers	Current: 30¢ 50 kW Proposed: 27¢ 50 kW 54¢ 100 kW	• 15 sites • 20 chargers
Hydro Quebec Electric Circuit Network	• Basic to high quality stations • Single, 2x, 4x, 6x – 50 kW, and some 100 kW	20.1¢ 50 kW 20.1¢ 100 kW* *interim rate	• ~250 sites in Quebec
Petro-Canada	• 2x chargers up to 350 kW • Ample lighting, on-site amenities/staff	27¢ up to 350 kW	• 12 sites • 23 chargers
Tesla	• Proprietary stations (Tesla only) • Many chargers per site	22¢ <60kW 44¢ >60kW	• 16 sites • 172 chargers

BC Hydro's Proposed Rates are designed to align with prices of other fast charging operators.

4 Rate Design

4.1 Rate Design Approach

The proposed RS 1360, which is applicable to public fast charging service at 25 kW stations, is considered a Small General Service (**SGS**) rate and is proposed at 12 cents per minute; RS 1560, which is applicable to public fast charging service at 50 kW stations, is considered a Medium General Service rate (**MGS**) and is proposed at 21 cents per minute, and RS 1561, which is applicable to public fast charging service at 100 kW stations, is also considered an MGS rate and proposed at 27 cents per minute. The Proposed Rates are applicable in all of BC Hydro's integrated area or Rate Zone I. The Proposed Rates are subject to any BCUC approved general revenue requirement increases or decreases..

BC Hydro considered the feedback from customers and stakeholders when designing the Proposed Rates. For example, our Proposed Rates are within the range considered passable to customers and stakeholders. Further, while BC Hydro considered proposing a single rate for all station power levels, based on the feedback shown in section 3.2, we decided to propose a different rate for each of the three station power levels. 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. 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.

BC Hydro's longer-term rate design objective is for the fast charging service rates to collect sufficient revenues from the users of the service to recover its full costs

including electricity (Energy and Demand), as well as the fast charging station maintenance and capital costs, on a portfolio (or all station) basis. However, achieving this objective will require station utilization levels to be higher than what can be expected over the near term. 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 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.

BC Hydro considers the fast charging service to be part of its General Service and has thus developed the Proposed Rates to reflect its General Service pricing for the following reasons.

- The "General Service" as defined in BC Hydro's Electric Tariff[12] captures the fast charging service. "General Service" is defined as "*Service for business, commercial, institutional or industrial use, including use in nursing homes,*

[12] BC Hydro's Electric Tariff is publicly available at: https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/tariff-filings/electric-tariff/bchydro-electric-tariff.pdf.

boarding houses, rooming houses, common areas of multiple occupancy buildings, recreational establishments, marinas and yacht clubs, hotels, motels, mobile home parks and similar establishments or parts thereof, or for any other use not specifically provided for in the Electric Tariff." (emphasis added) Fast charging service is not specifically provided for in the Electric Tariff and therefore qualifies as "General Service".

- Different power levels of fast charging stations correspond with the "Availability" requirement of Small General Service or Medium General Service. Under BC Hydro's Rate Schedules, Small General Service is available for customers whose Demand[13] is less than 35 kW, and Medium General Service is available for customers whose Demand is between 35 kW and 150 kW.

- Other fast charging operators (i.e., exempt utilities) in BC Hydro's service territory take General Service and are charged under the applicable General Service Rate Schedule based on their electricity Demand. Adopting General Service rates as the basis for the Proposed Rates in the Application ensures that BC Hydro's rate for fast charging service is not lower than the Energy and Demand rates BC Hydro charges to other fast charging station operators. In this respect the Proposed Rates reflect the BCUC's recommendation in the Phase 2 EV Inquiry Report that "non-exempt public utilities provide a transparent wholesale pricing mechanism that applies to all operators of EV charging facilities…, including the non-exempt public utility itself"[14].

[13] Demand is defined as "the rate at which electric energy is used in any instant or averaged over any designated period of time, measured in kilowatts (kW) or kilovolt amperes (kVA)."

[14] Phase 2 EV Inquiry Report page 43: https://www.bcuc.com/Documents/Proceedings/2019/DOC_54345_BCUC%20EV%20Inquiry%20Phase%20Two%20Report-web.pdf.

Having separate Rate Schedules for each fast charging station power level service will allow BC Hydro to conduct the analysis of utilization, electricity load characteristics, costs and revenues for the purpose of the evaluation described in section 5 below. As explained in section 2.2 above, the fast charging service will be separately metered at the site level, and BC Hydro can track data on electricity use and revenue by Rate Schedule. In this respect, the Proposed Rates are consistent with the BCUC's recommendation in the Phase 2 EV Inquiry Report that non-exempt public utilities should develop a separate rate and tariff for fast charging service.

4.2 Cost Recovery Calculations

In this section, BC Hydro presents the costs that the 50 kW station Proposed Rate will recover under different utilization scenarios. We present the analysis for 50 kW stations as these make up the majority of BC Hydro fast charging stations.

To calculate the time-based rate that would be required to recover the cost of electricity (Energy and Demand Charges) under the MGS Rate Schedule 1500, we apply Equation 1 below:

Equation 1: Rate to recover electricity costs =

{(Peak Demand x Demand Charge) / Average Number of Charging Session per Station per month + (Average Electricity Consumption per Charging Session x Energy Charge)} / Average Charging Session Length

Where:

- The Demand Charge and the Energy Charge are $5.39 per kW and 9.63 cents per kWh, respectively, as set out in BC Hydro's fiscal 2022 rates for Rate

Schedule 1500 - Medium General Service (35 kW or Greater than and less than 150 kW);[15]

- The Average Number of Charging Sessions per Station is unknown. BC Hydro does not yet have enough information to estimate the station utilization after a rate is in place because the fast charging station service is currently offered at no charge;
- The Peak Demand that can be drawn by an electric vehicle being charged is 50 kW;[16]
- The Average Electricity Consumption per Charging Session is 13.1 kWh;[16] and,
- The Average Charging Session Length is 28.6 minutes.[16]

To calculate the rate required to recover station maintenance and capital costs, we apply Equations 2 and 3 below:

Equation 2: Rate to recover station maintenance costs =

{(Annual Maintenance Costs) /12 months} / Average Number of Charging Session per Station per month / Average Charging Session Length

Equation 3: Rate to recover station capital costs =

{(Annualized Capital Costs) /12 months} / Average Number of Charging Session per Station per month / Average Charging Session Length

[15] F2022 MGS demand charge from F2022 RRA Appendix Y (page 6): https://www.bcuc.com/Documents/Proceedings/2020/DOC_60301_B-2-2-BCH-F22-RRA-Appendices-Public.pdf.

[16] Based on data collected from BC Hydro's fast charging stations from April 1, 2019 to March 31, 2020.

Where:

- Maintenance costs are those costs associated with metering, repair and other station maintenance work and are approximately $8,000 per year per station. Not included are labour costs associated with electric vehicle infrastructure which are approximately $800,000 per year.
- Capital costs are approximately $85,000 per dual station site, amortized over ten years net of contributions by third parties such as NRCan are included. This figure includes costs such as site selection, properties, legal, design, engineering, lighting, signage, line construction, civil construction and capital cost investments by BC Hydro. Gross capital costs are approximately $235,000 per dual station site when contributions, which are not guaranteed, by third parties such as NRCan are not included.
- The Average Charging Session Length, and the Average Number of Charging Sessions per Station have the same definition as in Equation 1.

As illustrated above, the rates required to recover costs are sensitive to station utilization (i.e., Average Number of Charging Sessions per Station per Month), but station utilization is unknown at this time. In Table 3 below, we show the rate that would be required to recover different levels of costs at different utilization levels.

- Scenario 1 recovers electricity costs (Energy and Demand) and the rate required to recover these costs at different utilization levels is calculated by applying Equation 1;
- Scenario 2 recovers electricity and station maintenance costs at different utilization levels and this rate is calculated as the sum of Equations 1 and 2; and

- Scenario 3 is the full cost of service rate. This rate recovers all the costs associated with the fast charging service, which are the electricity costs as well as station capital and maintenance costs. This rate is calculated as the sum of Equations 1, 2 and 3. The capital costs in this scenario are net of funding from government partners such as NRCan.

Table 3 50 kW Charging Station Rate by Utilization and Cost Recovery Scenario

Utilization Rate		Scenario 1	Scenario 2	Scenario 3
(%)	Average Number of Charging Sessions per Station per Month	Electricity Costs (RS 1500 Equivalent) ($/min)	Electricity + Station Maintenance Costs[17] ($/min)	Full Cost of Service: Electricity + Maintenance + Capital Costs ($/min)
3	46	0.25	0.76	1.29
3.7	57	0.21	0.62	1.06
5	77	0.17	0.47	0.79
10	153	0.11	0.26	0.42
15	230	0.09	0.19	0.29
20	307	0.07	0.15	0.23

In all cases, the rate goes down as utilization increases and fixed costs such as the station capital costs and the MGS Demand Charge are spread across more station users. As noted above, BC Hydro does not have enough information on which to estimate station utilization at this time. However, based on a market study,[18] we believe that the range of 3 to 5 per cent utilization is a reasonable estimate at this time for the 50 kW station. Our Proposed Rate of 21 cents per minute would recover

[17] The maintenance costs do not include the labour costs described on page 30.

[18] The study is done by Rocky Mountain Institute and reported in "DCFC RATE DESIGN STUDY FOR THE COLORADO ENERGY OFFICE", which can be found at: https://rmi.org/wp-content/uploads/2019/09/DCFC_Rate_Design_Study.pdf.

electricity (Energy and Demand) costs as specified under the MGS rate schedule at a utilization level of 3.7 per cent. If the utilization levels are greater than this, we would also recover some maintenance and capital costs. When the service was free, the average utilization was 15 per cent, however as described in section 3.1, half of potential station users indicated that they would stop using the service if a rate is introduced

As discussed above, BC Hydro proposes 12 cents per minute for the fast charging service at 25 kW stations. We expect the station utilization rate of the 50 kW and 25 kW stations to be similar, because 25 kW stations will be mainly used as replacements to 50 kW stations that are under repair and when no other charging equipment for 50 kW stations is available in inventory.

Assuming the 25 kW stations have a utilization of 3.7 per cent, the Proposed Rate of 12 cents per minute will recover all of electricity supply costs and some charging station capital and maintenance costs.

BC Hydro proposes 27 cents per minute for fast charging service at 100 kW stations. The rate will collect sufficient revenues to recover at least electricity supply costs (Energy and Demand charges) under the MGS rate so long as the station utilization rate is 6.5 per cent or greater. The station utilization needed for electricity cost recovery is higher for the 100 kW station than it is for the 50 kW station because the Peak Demand is higher. BC Hydro expects that utilization will be higher at the 100 kW stations because they are expected to be used primarily at locations near primary travel corridors or where high demand for charging has been demonstrated.

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. This timeline will allow for the collection and analysis of two full fiscal years of utilization and financial data

(fiscal 2022 and fiscal 2023) as well as the completion of customer and stakeholder engagement informed by the results of the evaluation.

4.3 Proposed Special Conditions

In the proposed RS 1360, RS 1560 and RS 1561 (shown in Appendix B) BC Hydro proposes several special conditions specific to fast charging service. Feedback on these proposed special conditions was sought during the public engagement session as shown in section 3.2. Some of the proposed special conditions are described below.

1. BC Hydro cannot guarantee the power level at a fast charging station and thus the charging speed, because the actual charging speed can vary based on the battery of the vehicle and the outdoor air temperature.

2. BC Hydro has the discretion to disconnect, interrupt or terminate the fast charging service at a station for safety, site accessibility, technical, environmental and other reasons. Circumstances for disconnection, interruption or termination may include damage or vandalism to the station, inoperable station due to partial or full hardware failure, the station's performance below its technical specifications, inability of BC Hydro to remotely communicate with the station, and inaccessibility to the station site due to road closure or other environmental factors.

3. The fast charging service must be paid for in full at the end of each charging session. BC Hydro is not able to provide a monthly or bimonthly bill covering multiple charging sessions.

4. Back-billing or re-billing because the original billings were discovered to be either too high (over-billed) or too low (under-billed) does not apply. Back-billing and re-billing is not practical for fast charging service for the following reasons.

First, there can be multiple transactions and different parties involved in payment for a charging session and the administrative effort of back-billing or re-billing would not be warranted given the value of the individual transactions, which will be in the range of $6 for each charging session. Second, depending on the activation method used, the fast charging service Customer may be anonymous to BC Hydro making back-billing or re-billing impractical.

5. If a fast charging service Customer contacts BC Hydro to dispute a bill, then BC Hydro has the discretion to waive payment if the Customer experienced operational issues outside their control such as local cellular network issues, physical access barriers, or information technology system errors. This special condition is necessary because as describe in above, BC Hydro has no ability to back-bill or re-bill a fast charging service Customer at a later date, and no ability to correct inaccurate charges after the charging session ends and issue a correct monthly or bimonthly bill at a later date.

6. If a fast charging service Customer intends to use a radio frequency identification card (**RFID**) purchased from BC Hydro to activate the use of a fast charging station, a one-time fee of $15 will be applied for the initial purchase of the RFID card. The use of an RFID card is one of four station activation and payment options, as further described in section 6.

4.4 Bonbright Assessment of Proposed Rates

Table 4 below provides BC Hydro's assessment of the Proposed Rates using the Bonbright rate design criteria. The Proposed Rates have mixed performance on the Bonbright criteria. 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.

Table 4 Bonbright Assessment of Proposed Fast Charging Rate

Bonbright Criteria	Grouping	Performance	Remarks
1. Price signals to encourage efficient use and discourage inefficient use	Economic efficiency	Fair	• Price level is intended to encourage efficient use of stations by encouraging usage relative to higher price levels. • Per minute charge discourages inefficient use of stations by reducing wait times. • However, the Proposed Rates do not fully reflect BC Hydro's marginal cost because it is a time-based charge. They do not provide any price signal tied to consumption.
2. Fair apportionment of costs among customers 3. Avoid undue discrimination	Fairness	Fair	• A per-minute-based rate benefits customers with larger battery size and is a disadvantage to customers with smaller battery size relative to a per kWh charge. • Stations are available to the public and same rate applies to all users of stations at a particular power level. • Over the near term, revenue will not recover all costs of service, with the remaining costs to be recovered from all ratepayers under section 18 of the *Clean Energy Act*).
4. Customer understanding and acceptance; practical and cost-effective to implement 5. Freedom from controversy as to proper interpretation	Practicality	Good	• The Proposed Rates are easy to understand and practical for BC Hydro to administer.
6. Recovery of the revenue requirement 7. Revenue stability 8. Rate stability	Stability	Good / Fair	The Proposed Rates have stable pricing and • Improve revenue recovery and revenue stability over long term by encouraging electric vehicle usage. and • Do not fully recover the revenue requirement.

5 Monitoring and Evaluation

BC Hydro proposes to monitor several aspects of the fast charging service, including station utilization (at different power levels), revenue collected under the applicable Rate Schedules, costs incurred, and customer feedback, and provide to the BCUC by March 31, 2024 an evaluation report and recommendations for fast charging service rates going forward.

The March 2024 report will include the evaluation of the following:

- Station utilization at different power level stations and factors that impact it;
- Customer satisfaction and experience;
- Implementation effectiveness including billing, payments and special conditions;
- Comparison of BC Hydro fast charging service rates with other operators.;
- Collection of data on the electricity use characteristics (e.g., load profile, load factor, and peak demand) of the fast charging service and determination of whether General Service remains appropriate or a new rate class should be developed specific to electric vehicle fast charging service;
- Technological advancements in metering and billing for fast charging services;
- Customer and stakeholder engagement on the results of the evaluation report and industry developments; and
- The potential need for repricing or redesign of the rates.

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. This timeline will allow for the collection and analysis of two full fiscal years of utilization and financial data

(fiscal 2022 and fiscal 2023) as well as the completion of customer and stakeholder engagement informed by the results of the evaluation.

6 Implementation, Station Activation and Payment

Implementation of Rates

Most of the infrastructure, technology, and customer support needed for the fast charging service are ready now to allow the implementation of the Proposed Rates. As stated in section 1.4 above, BC Hydro requests interim rate approval by April 1, 2021 for the interim Proposed Rates to take effect on May 1, 2021. BC Hydro needs one month to complete the following activities to implement the interim rates:

- Notify interested parties and station users of implementation of the rate;
- Update pricing section of signage at the charging locations with a charging price sticker to show the approved rates; and
- Configure each charging station individually with the applicable rate based on the power level of the station on the date of implementation.

Station Activation and Use

A fast charging service Customer can activate BC Hydro's electric vehicle charging stations in the following ways:

1. A BC Hydro EV app on either an Apple or Android device can be used to activate a charging session.
2. A pre-purchased BC Hydro RFID card can be used to activate a charging session. This option enables activation when cellular signals are weak or low.

There is a one-time charge of $15 when the RFID is initially purchased from BC Hydro.

3. A QR code sticker on the front of the station can be used to activate a session through a mobile phone with payment made by credit card. This option enables use of the station for those without the mobile app or RFID card.

4. FLO[19] users can activate the BC Hydro fast charging station with either their FLO mobile app or their FLO RFID card. ChargePoint[20] users can currently activate only with their ChargePoint mobile app. BC Hydro currently has roaming available through both the FLO and ChargePoint EV networks. In order to provide other station activation options for British Columbians and visitors to B.C., BC Hydro has established roaming agreements with the FLO and ChargePoint electric vehicle networks. This allows those who already have relationships with other networks to activate BC Hydro stations.

Options one and two above (BC Hydro app and BC Hydro RFID card), are linked to a BC Hydro EV account[21] to which funds can be preloaded by credit card. The station will not activate if the balance is $0. The station users will be able to load their account by credit card using the “Add funds” option in the BC Hydro EV mobile app or website. A minimum of $10 needs to be loaded. Customers can request a refund of their balance any time by calling the BC Hydro EV support line. Once the charging session is activated, customers will be able to view the current status of the charging session including the current charging session time, current cost (based on the charging session time) and current energy supplied (note the metering is not Measurement Canada approved).

[19] FLO is an EV charging network, for more information, please refer to https://www.flo.com/.
[20] ChargePoint is an EV charging network, for more information please refer to https://www.chargepoint.com.
[21] Please refer to https://evaccount.bchydro.com.

For option three, payment is by credit card and users will receive email copy of their receipt with no additional registration with an app or a RFID card required. Option four is completely anonymous to BC Hydro and the customer will receive a receipt directly from FLO or ChargePoint and BC Hydro will receive the revenue anonymously from the users FLO or ChargePoint account.

BC Hydro has a dedicated customer support team to provide assistance to station users.

Billing and Payment

Each charging session will be measured by a timing-device built into the fast charging station that will track the duration of each charging session for billing purposes.

Fast charging service is not linked in any way to any BC Hydro existing residential or general service account or premises. Payment for fast charging service must be made at the end of each charging session, and not on a billing cycle. In all cases payment is preauthorized prior to the charging session commencing, and payment is made in full when the charging session completes. Based on the method of station activation and payment, the station user may remain anonymous to BC Hydro.

7 Conclusion

The Proposed Rates are just and reasonable and should be approved as filed. The Proposed Rates take into consideration of several recommendation 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. The revenue collected from the Proposed Rates will be to the benefit of all

ratepayers. The rates will be monitored and a public evaluation filed with the BCUC by March 2024, which will provide an opportunity to update the rates for fast charging service based on developments in the electric vehicle market, customer and stakeholder feedback, as well as any potential metering and billing technology improvements.

BC Hydro
Power smart

BC Hydro Public Electric Vehicle Fast Charging Rate Application

Appendix A

Draft Orders

bcuc
British Columbia
Utilities Commission

Suite 410, 900 Howe Street
Vancouver, BC Canada V6Z 2N3
P: 604.660.4700
TF: 1.800.663.1385
F: 604.660.1102

ORDER NUMBER
G-xx-xx

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority (BC Hydro)
Public Electric Vehicle Fast Charging Service Rates Application

BEFORE:
Commissioner
Commissioner
Commissioner

on Date

ORDER

WHEREAS:

A. On March 5, 2021, BC Hydro submitted to the British Columbia Utilities Commission (Commission) for approval of BC Hydro Public Electric Vehicle Fast Charging Service Rates Application (Application) pursuant to sections 59 to 61 and 90 of the *Utilities Commission Act* (UCA);

B. In the Application, BC Hydro seeks Commission approvals, on an interim and final basis, of a time-based rate as set out in:

   (i) Rate Schedule 1360 for fast charging service at 25 kW stations;

   (ii) Rate Schedule 1560 for fast charging service at 50 kW stations; and

   (iii) Rate Schedule 1561 for fast charging service at 100 kW stations;

C. BC Hydro seeks Commission approval of those rate schedules on an interim basis, effective May 1, 2021, on a non-refundable and non-collectable basis due to the nature of the service; and

D. The Commission has reviewed the request for interim rates based on the Application and supporting materials.

NOW THEREFORE pursuant to sections 59 to 61 and section 90 of the UCA, the Commission orders as follows:

1. Rate Schedule 1360 – Public Electric Vehicle Public Fast Charging Service (25 kW Fast Charging Stations), as shown in Appendix B of the Application, is approved on an interim, non-refundable and non-collectible basis, effective May 1, 2021.

.../2

2. Rate Schedule 1560 – Public Electric Vehicle Public Fast Charging Service (50 kW Fast charging stations), as shown in Appendix B of the Application, is approved on an interim, non-refundable and non-collectible basis, effective May 1, 2021.

3. Rate Schedule 1561 – Public Electric Vehicle Public Fast Charging Service (100 kW Fast charging stations), as shown in Appendix B of the Application, is approved on an interim, non-refundable and non-collectible basis, effective May 1, 2021.

4. The interim Rate Schedule 1360, Rate Schedule 1560 and Rate Schedule 1561 remain effective until the final approved rate schedules are to take effect.

5. BC Hydro is directed to file updated tariff sheets reflecting the approved Rate Schedule 1360, Rate Schedule 1560, and Rate Schedule 1561 within 15 business days of the date of this order.

DATED at the City of Vancouver, in the Province of British Columbia, this (XX) day of (Month Year).

BY ORDER

(X. X. last name)
Commissioner

Attachment Options

bcuc
British Columbia
Utilities Commission

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F: 604.660.1102

ORDER NUMBER
G-xx-xx

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority (BC Hydro)
Public Electric Vehicle Fast Charging Service Rates Application

BEFORE:
Commissioner
Commissioner
Commissioner

on Date

ORDER

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B. In the Application, BC Hydro seeks BCUC approvals, on an interim and final basis, of a time-based rate as set out in:

   (i) Rate Schedule 1360 for fast charging service at 25 kW stations;

   (ii) Rate Schedule 1560 for fast charging service at 50 kW stations; and

   (iii) Rate Schedule 1561 for fast charging service at 100 kW stations;

C. By Order G-XX-21, the BCUC approved Rate Schedule 1360, Rate Schedule 1560, and Rate Schedule 1561 on an interim, non-refundable and non-collectable basis;

D. By Order G-XX-21, the BCUC established a public hearing process and the regulatory timetable for the review of the Application, which includes one round of BCUC and intervener information requests to BC Hydro, with the remaining of the process to be determined;

E. By Order G-XX-21, the BCUC established the remaining regulatory timetable, which includes written final and reply arguments; and

F. The BCUC has reviewed the Application, evidence and arguments, and considers that a determination on Rate Schedule 1360, Rate Schedule 1560, and Rate Schedule 1561 is warranted.

.../2

NOW THEREFORE pursuant to sections 59 to 61 of the UCA, and for the reasons attached to Appendix A to this order, the BCUC orders as follows:

1. Rate Schedule 1360 – Public Electric Vehicle Public Fast Charging Service (25 kW Fast Charging Stations), as shown in Appendix B of the Application, is approved, effective 30 days after the date of this Order.

2. Rate Schedule 1560 – Public Electric Vehicle Public Fast Charging Service (50 kW Fast charging stations), as shown in Appendix B of the Application, is approved, effective 30 days after the date of this Order.

3. Rate Schedule 1561 – Public Electric Vehicle Public Fast Charging Service (100 kW Fast charging stations), as shown in Appendix B of the Application, is approved, effective 30 days after the date of this Order.

4. BC Hydro is directed to submit an evaluation report for the electric vehicle charging service under Rate Schedule 1360, Rate Schedule 1560, and Rate Schedule 1561 by March 31, 2024, as set out in section 5 of the Application.

5. BC Hydro is directed to file updated tariff sheets reflecting the approved Rate Schedule 1360, Rate Schedule 1560, and Rate Schedule 1561 within 15 business days of the date of this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this (XX) day of (Month Year).

BY ORDER

(X. X. last name)
Commissioner

Attachment Options

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BC Hydro Public Electric Vehicle Fast Charging Rate Application

Appendix B

Rate Schedules 1360, 1560 and 1561

2. GENERAL SERVICE

RATE SCHEDULE 1360 – PUBLIC ELECTRIC VEHICLE FAST CHARGING SERVICE (25 kW FAST CHARGING STATIONS)

Availability	For electric vehicle charging by a Customer at a 25 kW Fast Charging Station.
Applicable in	Rate Zone I.
Rate	For each Charging Session: 12¢ per minute The rate is pro-rated on a per-second basis for each Charging Session. The total bill for each Charging Session will be rounded to the nearest cent.
Definitions	1. Charging Session A period of consecutive minutes, starting when Electricity commences to dispense from a Fast Charging Station to an electric vehicle and ending when the electric vehicle is charged to 100% or when the electric vehicle charging is stopped by the Customer using the Fast Charging Station, as measured by a timing device built into the Fast Charging Station. 2. Charging Site A site where one or more Fast Charging Stations are located. 3. Customer Any member of the public is considered a Customer of BC Hydro when taking Service under this Rate Schedule.

	4. Fast Charging Station An electric vehicle charging station, owned and operated by BC Hydro, that is a fixed device capable of charging an electric vehicle using a direct current. 5. Service Service for the purposes of this Rate Schedule means the provision of Electricity from a Fast Charging Station to a Customer to enable the Customer to charge an electric vehicle. A Customer does not need to apply for Service. For greater certainty, Service under this Rate Schedule is not to a Premises and is not unmetered Service. Further, Service under this Rate Schedule does not include the access to, and the use of, BC Hydro's website and mobile application(s) or other alternative methods to activate the use of a Fast Charging Station
Special Conditions	1. BC Hydro does not guarantee charging speeds at a Fast Charging Station. 2. BC Hydro may disconnect, interrupt or terminate Service at a Fast Charging Station due to existing or expected system, safety, accessibility, technical, environmental or other constraints at a Charging Site or at a Fast Charging Station as determined by BC Hydro. BC Hydro will, whenever practical, give notice of such disconnection, interruption, or termination to Customers, by posting information at the Fast Charging Station and the Charging Site and on a relevant third party website. In the event of a disconnection or interruption of Service, BC Hydro, whenever possible, to provide information on the expected duration of disconnection or interruption.

	Neither BC Hydro nor any of its representatives or agent will be responsible or liable for any loss, injury, damage or expense caused by or resulting from such disconnection, interruption, or termination.
	3. A Customer using the Fast Charging Station is solely responsible for the supply, compatibility, connectivity, safety and use of any third party equipment, device, hardware, software and telecommunications networks necessary for the use of the Fast Charging Station, including any and all fees. In addition to and without restriction of any other limitations of liability of BC Hydro, BC Hydro is specifically not liable for any loss, damage, injury or expense caused by or resulting from the use of such third party equipment, device, hardware, software and telecommunications networks.
	4. If a Customer intends to use a BC Hydro radio frequency identification card (**RFID**) to receive Service from a Fast Charging Station, a one-time fee of $15 will be applied for the initial purchase of the RFID card.

	5. The Customer taking Service under this Rate Schedule will be billed in Canadian currency and make payment of the billed amount in full at the end of each Charging Session, through a payment method accepted by BC Hydro. Subject to Special Condition No. 4, no other fees or charges in addition to the billed amount will be applicable for the use of a Fast Charging Station. For greater certainty, back-billing or re-billing because the original billings were discovered to be either too high (over billed) or too low (under billed) is inapplicable to the Service. 6. BC Hydro may, in its sole discretion, waive all or part of the payment owed to BC Hydro for each Charging Session. The cause of the waiver may include metering or billing errors not attributable to, or beyond the reasonable control of, the Customer using the Fast Charging Station.
Taxes	The rate set out in this Rate Schedule is exclusive of goods and services and provincial sales taxes.
Rate Rider	The Deferral Account Rate Rider as set out in Rate Schedule 1901 applies to all charges payable under these Rate Schedules, before taxes and levies.
Rate Increase/Rate Decrease	The rate increases/decreases approved through the revenue requirements applications for a particular fiscal year will apply from fiscal 2023 onward.

2. GENERAL SERVICE

RATE SCHEDULE 1560 – PUBLIC ELECTRIC VEHICLE FAST CHARGING SERVICE (50 kW FAST CHARGING STATIONS)

Availability	For electric vehicle charging by a Customer at a 50 kW Fast Charging Station.
Applicable in	Rate Zone I.
Rate	For each Charging Session: 21¢ per minute The rate is pro-rated on a per-second basis for each Charging Session. The total bill for each Charging Session will be rounded to the nearest cent.
Definitions	1. Charging Session A period of consecutive minutes, starting when Electricity commences to dispense from a Fast Charging Station to an electric vehicle and ending when the electric vehicle is charged to 100% or when the electric vehicle charging is stopped by the Customer using the Fast Charging Station, as measured by a timing device built into the Fast Charging Station. 2. Charging Site A site where one or more Fast Charging Stations are located. 3. Customer Any member of the public is considered a Customer of BC Hydro when taking Service under this Rate Schedule.

	4. Fast Charging Station An electric vehicle charging station, owned and operated by BC Hydro, that is a fixed device capable of charging an electric vehicle using a direct current. 5. Service Service for the purposes of this Rate Schedule means the provision of Electricity from a Fast Charging Station to a Customer to enable the Customer to charge an electric vehicle. A Customer does not need to apply for Service. For greater certainty, Service under this Rate Schedule is not to a Premises and is not unmetered Service. Further, Service under this Rate Schedule does not include the access to, and the use of, BC Hydro's website and mobile application(s) or other alternative methods to activate the use of a Fast Charging Station.
Special Conditions	1. BC Hydro does not guarantee charging speeds at a Fast Charging Station. 2. BC Hydro may disconnect, interrupt or terminate Service at a Fast Charging Station due to existing or expected system, safety, accessibility, technical, environmental or other constraints at a Charging Site or at a Fast Charging Station as determined by BC Hydro. BC Hydro will, whenever practical, give notice of such disconnection, interruption, or termination to Customers, by posting information at the Fast Charging Station and the Charging Site and on a relevant third party website. In the event of a disconnection or interruption of Service, BC Hydro, whenever possible, to provide information on the expected duration of disconnection or interruption.

	Neither BC Hydro nor any of its representatives or agent will be responsible or liable for any loss, injury, damage or expense caused by or resulting from such disconnection, interruption, or termination.
	3. A Customer using the Fast Charging Station is solely responsible for the supply, compatibility, connectivity, safety and use of any third party equipment, device, hardware, software and telecommunications networks necessary for the use of the Fast Charging Station, including any and all fees. In addition to and without restriction of any other limitations of liability of BC Hydro, BC Hydro is specifically not liable for any loss, damage, injury or expense caused by or resulting from the use of such third party equipment, device, hardware, software and telecommunications networks.
	4. If a Customer intends to use a BC Hydro radio frequency identification card (**RFID**) to receive Service from a Fast Charging Station, a one-time fee of $15 will be applied for the initial purchase of the RFID card.

	5. The Customer taking Service under this Rate Schedule will be billed in Canadian currency and make payment of the billed amount in full at the end of each Charging Session, through a payment method accepted by BC Hydro. Subject to Special Condition No. 4, no other fees or charges in addition to the billed amount will be applicable for the use of a Fast Charging Station. For greater certainty, back-billing or re-billing because the original billings were discovered to be either too high (over-billed) or too low (under-billed) is inapplicable to the Service. 6. BC Hydro may, in its sole discretion, waive all or part of the payment owed to BC Hydro for each Charging Session. The cause of the waiver may include metering or billing errors not attributable to, or beyond the reasonable control of, the Customer using the Fast Charging Station.
Taxes	The rate set out in this Rate Schedule is exclusive of goods and services and provincial sales taxes.
Rate Rider	The Deferral Account Rate Rider as set out in Rate Schedule 1901 applies to all charges payable under these Rate Schedules, before taxes and levies.
Rate Increase/ Rate Decrease	The rate increases/decreases approved through the revenue requirements applications for a particular fiscal year will apply from fiscal 2023 onward.

2. GENERAL SERVICE

RATE SCHEDULE 1561 – PUBLIC ELECTRIC VEHICLE FAST CHARGING SERVICE (100 kW FAST CHARGING STATIONS)

Availability	For electric vehicle charging by a Customer at a 100 kW Fast Charging Station.
Applicable in	Rate Zone I.
Rate	For each Charging Session: 27¢ per minute The rate is pro-rated on a per-second basis for each Charging Session. The total bill for each Charging Session will be rounded to the nearest cent.
Definitions	1. Charging Session A period of consecutive minutes, starting when Electricity commences to dispense from a Fast Charging Station to an electric vehicle and ending when the electric vehicle is charged to 100% or when the electric vehicle charging is stopped by the Customer using the Fast Charging Station, as measured by a timing device built into the Fast Charging Station. 2. Charging Site A site where one or more Fast Charging Stations are located. 3. Customer Any member of the public is considered a Customer of BC Hydro when taking Service under this Rate Schedule.

	4. Fast Charging Station An electric vehicle charging station, owned and operated by BC Hydro, that is a fixed device capable of charging an electric vehicle using a direct current. 5. Service Service for the purposes of this Rate Schedule means the provision of Electricity from a Fast Charging Station to a Customer to enable the Customer to charge an electric vehicle. A Customer does not need to apply for Service. For greater certainty, Service under this Rate Schedule is not to a Premises and is not unmetered Service. Further, Service under this Rate Schedule does not include the access to, and the use of, BC Hydro's website and mobile application(s) or other alternative methods to activate the use of a Fast Charging Station.
Special Conditions	1. BC Hydro does not guarantee charging speeds at a Fast Charging Station. 2. BC Hydro may disconnect, interrupt or terminate Service at a Fast Charging Station due to existing or expected system, safety, accessibility, technical, environmental or other constraints at a Charging Site or at a Fast Charging Station as determined by BC Hydro. BC Hydro will, whenever practical, give notice of such disconnection, interruption, or termination to Customers, by posting information at the Fast Charging Station and the Charging Site and on a relevant third party website. In the event of a disconnection or interruption of Service, BC Hydro, whenever possible, to provide information on the expected duration of disconnection or interruption.

	Neither BC Hydro nor any of its representatives or agent will be responsible or liable for any loss, injury, damage or expense caused by or resulting from such disconnection, interruption, or termination.
	3. A Customer using the Fast Charging Station is solely responsible for the supply, compatibility, connectivity, safety and use of any third party equipment, device, hardware, software and telecommunications networks necessary for the use of the Fast Charging Station, including any and all fees. In addition to and without restriction of any other limitations of liability of BC Hydro, BC Hydro is specifically not liable for any loss, damage, injury or expense caused by or resulting from the use of such third party equipment, device, hardware, software and telecommunications networks.
	4. 4.If a Customer intends to use a BC Hydro radio frequency identification card (**RFID**) to receive Service from a Fast Charging Station, a one time fee of $15 will be applied for the initial purchase of the RFID card.
	5. The Customer taking Service under this Rate Schedule will be billed in Canadian currency and make payment of the billed amount in full at the end of each Charging Session, through a payment method accepted by BC Hydro. Subject to Special Condition No. 4, no other fees or charges in addition to the billed amount will be applicable for the use of a Fast Charging Station. For greater certainty, back-billing or re-billing because the original billings were discovered to be either too high (over billed) or too low (under billed) is inapplicable to the Service.
	6. BC Hydro may, in its sole discretion, waive all or part of the payment owed to BC Hydro for each Charging Session. The cause of the waiver may include metering or billing errors not attributable to, or beyond the reasonable control of, the Customer using the Fast Charging Station.

Taxes	The rate set out in this Rate Schedule is exclusive of goods and services and provincial sales taxes.
Rate Rider	The Deferral Account Rate Rider as set out in Rate Schedule 1901 applies to all charges payable under these Rate Schedules, before taxes and levies.
Rate Increase / Rate Decrease	The rate increases/decreases approved through the revenue requirements applications for a particular fiscal year will apply from fiscal 2023 onward.

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Appendix C

Interview Guideline

Interview Guide

Interview purpose

BC Hydro is preparing to commence customer research on EV fast charging service pricing and overall EV fast charging service experience. This interview is to help guide our research approach and what questions to ask to a wider population of EV drivers in B.C. This will provide an opportunity to gather feedback about rates and the fast charging experience overall.

1. Introduction

a. My name is _____. I'll be asking you some questions today. There are no wrong answers.
b. This is my colleague _____, who will be taking notes. The responses will be aggregated.
c. We're exploring some concepts around paying to use public charging stations. We're aiming for you to do 90% of the talking.
d. To get things started, can you tell us <*Choose one of the questions below*>:
   - What is the best part about living in _____?
   - What is the best part of your job?
   - What are you most proud of where you live?
   - What is the best part of owning an EV?

2. Interview questions

a. Tell us about the last time you charged your EV. <*Probe for location, how they paid (even if at home), the experience, where did power come from to charge, etc.*>
b. Thinking about public charging stations where drivers have to pay to charge, how do you think the price was established? <*Probe what should be included / not included in price to charge*>
c. What is the advantage of asking EV drivers to pay to use a public charging station?
d. What is the disadvantage of asking EV drivers to pay to use a public charging station?
e. Have you charged at a BC Hydro fast-charging station? <*If yes, proceed with f*>
f. What did you like best about where you last charged? What did you like least? <*Probe for station design elements, see list*>

Now let's talk about pricing. In terms of charging EV drivers a fee to use our public chargers, we aren't able to charge drivers like we do our residential and business customers – by units of power they consume. Instead we are limited to time-based charging – that is, charging a fee per minute, for example.

g. Here are some prices we'd like to get your feedback on. Let's say that these prices are for the current fast chargers we have installed – 50 kW. <*Probe for best / worst thing about each, who would benefit, who would be negatively impacted, what would make this better, etc.*>

Per minute fee $0.20	Per minute fee $0.25	Per minute fee $0.30
$6.00 for 30 minutes or $12.00 for 60 minutes	$7.50 for 30 minutes or $15.00 for 60 minutes	$9.00 for 30 minutes or $18.00 for 60 minutes

h. Tell us how prices should change for chargers which are slower or faster than the ones we currently have installed. <Probe on Level 2 vs. 25kW vs. 50kW vs. 100kW pricing, why / why not they should be different>

i. Next, we'd like to ask you about the following scenario: An EV driver arrives at a public charging station, plugs in their EV to charge and then leaves. The EV battery reaches 100% after 40 minutes but the driver doesn't come back to unplug until an hour later. How much do you think the driver should pay, 40 minutes for the time it took to charge or an hour for the entire time they were plugged in? <*Probe for reasons*>

j. Here are some future potential pricing structures we'd like to get your feedback on. Please note that these are sample rates only. <Probe for best / worst thing about each, who would benefit, who would be negatively impacted, what would make this better, etc.>

Subscription rate	Minimum fee + rate	After-hours discount	kWh-based rate
$100 a month for unlimited charging	$2 to connect, then $0.25 / minute to charge	50% off between midnight and 6 am	$0.35 per kWh

- Subscription
- Min fee + rate
- After-hours discount
- kWh-based rate
- Summer versus winter
- Urban versus rural

3. Closing comments

a. Where do you see EV charging in the next five years?

b. What other questions should we ask EV drivers pertaining to public fast charging in B.C.

c. Is there anything else you'd like us to know?

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Appendix D

Electric Vehicle Charging Stations Survey

Report

Electric Vehicle Charging Stations Survey – Section B Results

BC Hydro
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DATE PROJECT NUMBER

Table of Contents


Leger
Background and methodology

Background

BACKGROUND

Background

According to the BC Government, more than 30,000 electric vehicles (EVs) are currently being used in the province of BC. The popularity of EVs is growing dramatically--as of November 2019, 9% of all light-duty vehicle sales in BC are EVs, up from 4% in 2018. In terms of charging these vehicles, while most EV owners charge their cars at home, there are over 1,000 public charging stations in the province. BC Hydro currently operates 80 fast charging stations located along B.C.'s major highways where users can charge their vehicles for free.

Research Objectives

BC Hydro would like to conduct research with its fast charging station users on the following topics:

- Why they use the fast charging stations;
- Gauging sentiment on future use of the stations;
- Prioritizing potential future features of the stations;
- Gauging reactions to potential charging fees;
- Determining user support for imposing fees at charging stations; and,
- Identifying user demographics.

Methodology

METHODOLOGY

The survey questionnaire consisted of two sections (Section A and Section B). Section A is a repeat of the 2019 EV Fast Charging Support Services Survey, while Section B was a new set of questions regarding fast charging rates and the fast charging experience overall. The two target groups were defined for this survey. The first target group (1,034 records) completed both Section A and Section B questions, while the second group (10,364 records) got Section B questions only. This report shows the combined results for both target groups for Section B only. The Section A report will be provided under separate cover.

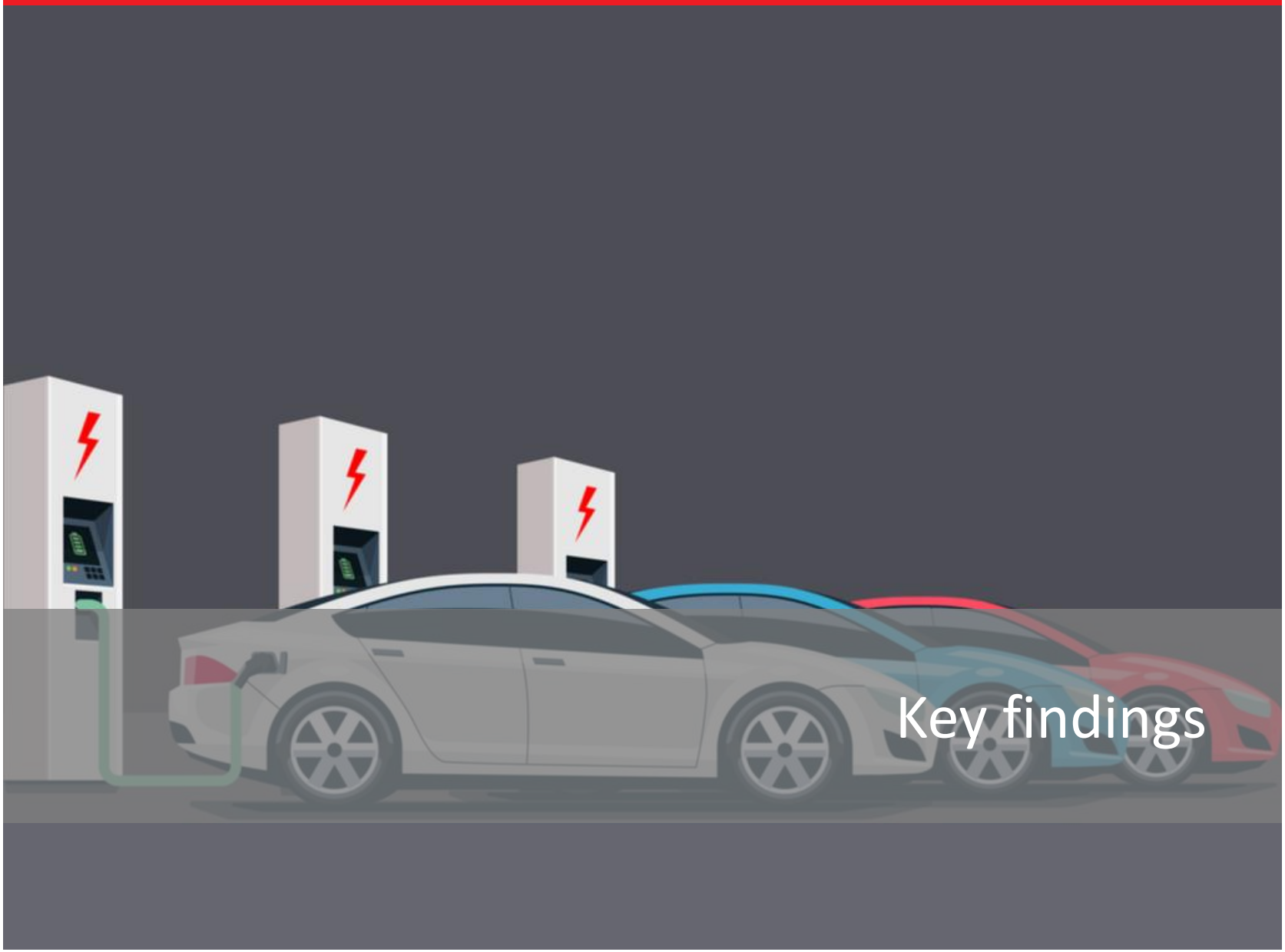
Data collection methodology – web survey

Number of completions – 4,196 overall, including 346 completions for target group 1 and 3,850 completions for target group 2.

Fieldwork was conducted from August 26 to September 7, 2020

Leger was responsible for survey hosting and programming, providing the survey links for each target group, data collection and data processing. BC Hydro deployed the survey links via email to the two target groups, who are all BC Hydro charging station users.

*Please note, all data in this report, with a few exceptions, are rounded to the nearest percentage. Because of this, some tables and charts may not add up to 100% exactly.



Key findings

Key Findings

Reasons for using charging stations and key attributes in future station design

- The main reasons for using BC Hydro's fast charging stations are it's fast to charge (78%), free service (74%) and convenient location (57%).
- About one-half of users (49%) agree that if they have to pay a fees for charging, they will stop using those stations especially those who aged 18-54, while one-third (35%) say they have nowhere else to charge their electric vehicles.
- When thinking about attributes in the design of future BC Hydro fast charging stations, the large majority of users (91%) would prefer to have multiple stations per site to reduce waiting time. The next most popular feature (69%) is easy to find/convenient locations, which is more important especially for women (75%) and students (88%). Six in ten users (60%) would like to have charging stations in safe locations, especially those who are 55+.

Mobile App

- Interestingly, over one-half of users (52%) use both BC Hydro's mobile EV app and a third party mobile EV app, such as FLO or Chargepoint. One-quarter (26%) use the BC Hydro mobile EV app only.

Key Findings

Price

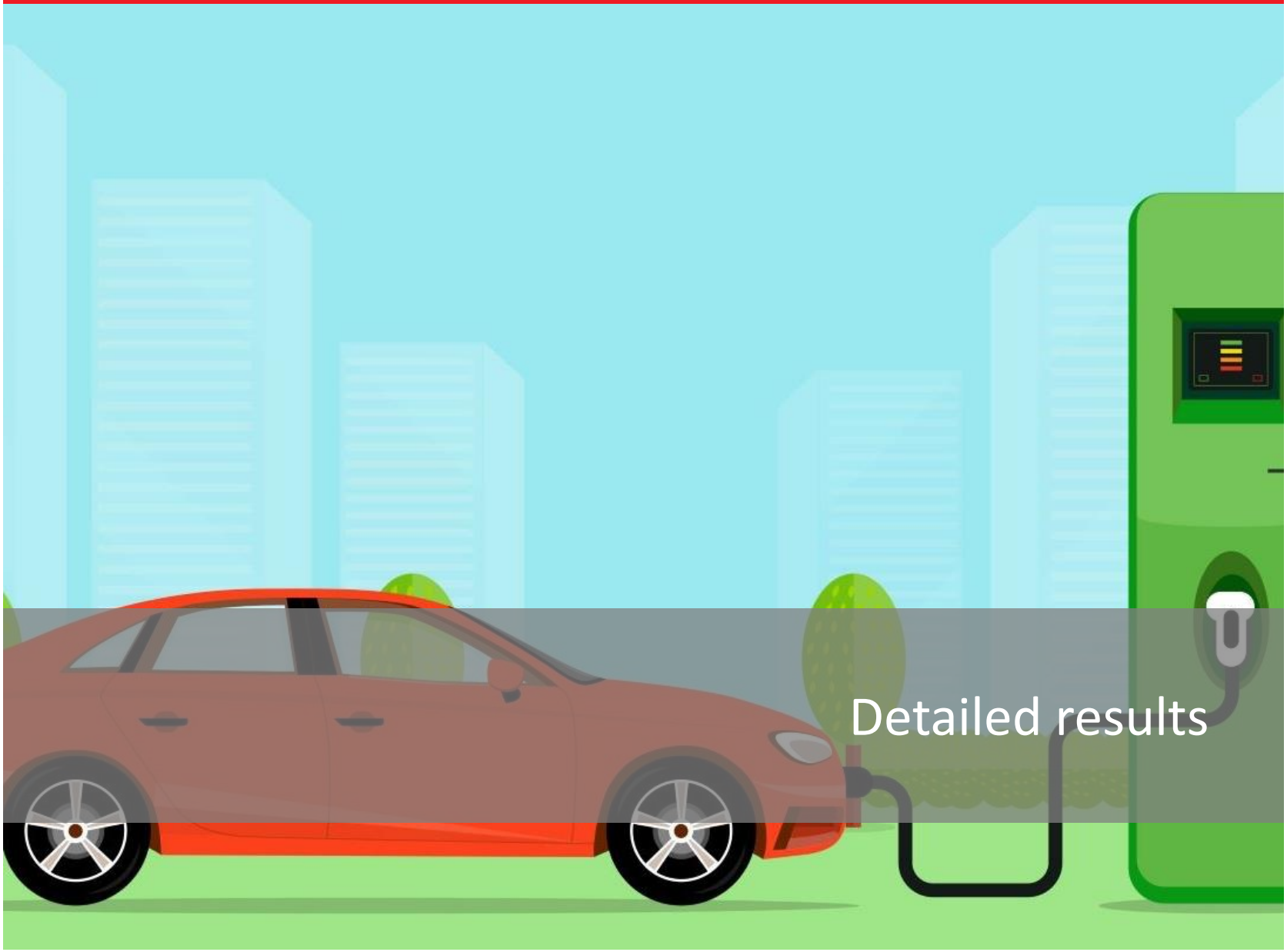
- Many users appear to be price-sensitive. Nearly one-half (48%) would like to pay less than $5 for a 30-minute charge, especially those who are aged 18-34 (53%) and 34-54 (52%) and those who live in the Lower Mainland/Fraser Valley region (52%).

Charge speed and time

- Despite being price-sensitive, over one-half of users (56%) would like to pick the fastest charger, even if the fee is a bit higher. One-third (32%) would choose the cheapest charger with a longer waiting time.
- Users' assessments of their public charging station experience are mixed. More than four in ten (43%) feel they get just enough to minimize time spent at the station, while three in ten (30%) agree they can't always wait to charge to the max. Nearly one-quarter (23%) don't mind waiting to charge to the max.

Future approaches and overall attitude

- When asking about approaches the users would like to see explored in the future, nearly one-half (48%) would like to see the amount of electricity delivered to the EV, while over one-quarter (27%) would prefer a time-varying rate (discount for charging at off-peak times).
- The large majority of users (94%) agree that EV drivers benefit from the availability of public charging stations.
- Six in ten users (59%) think that it's reasonable for BC Hydro to start charging EV drivers a fee. Interestingly, women (33%) and Lower Mainland/Fraser Valley residents (34%) are more likely to disagree with this statement compared to men and residents of other regions.


Detailed results

Around three-quarters each use fast charging stations because it's fast to charge and it's free

Why use BC Hydro's fast charging stations?

78% It's fast to charge

74% It's free

57% Location is convenient

16% I can't charge where I live

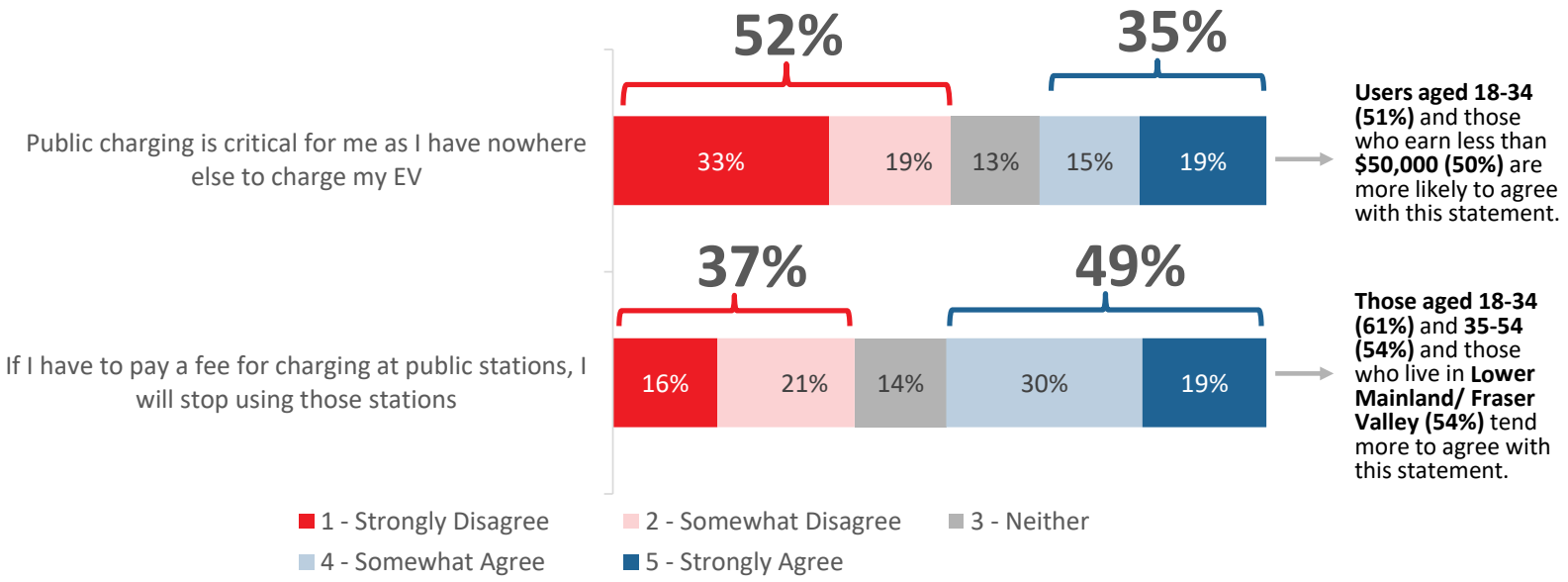
14% I can't charge where I work

	Total	18-34 (n=464)	35-54 (n=1975)	55+ (n=1404)	Lower Mainland/Fraser Valley (n=2546)	Vancouver Island and Sunshine Coast (n=957)	Thompson Okanagan Columbia/ Kootenays (n=273)	North (n=50)
It's fast to charge	78%	77%	78%	79%	78%	81%	69%	80%
It's free	74%	82%	75%	71%	76%	70%	76%	70%
Location is convenient	57%	53%	55%	61%	56%	57%	61%	66%
I can't charge where I live	16%	30%	16%	13%	19%	13%	7%	12%
I can't charge where I work	14%	25%	14%	10%	15%	13%	9%	4%

B1. Why do you use BC Hydro's fast charging stations? (Multiple mentions)
Base: Total, n=3892.

Green indicates significantly higher results compared to other groups;
Red indicates significantly lower results compared to other groups.

One-half of fast charging station users say they will stop using them if they have to pay for it

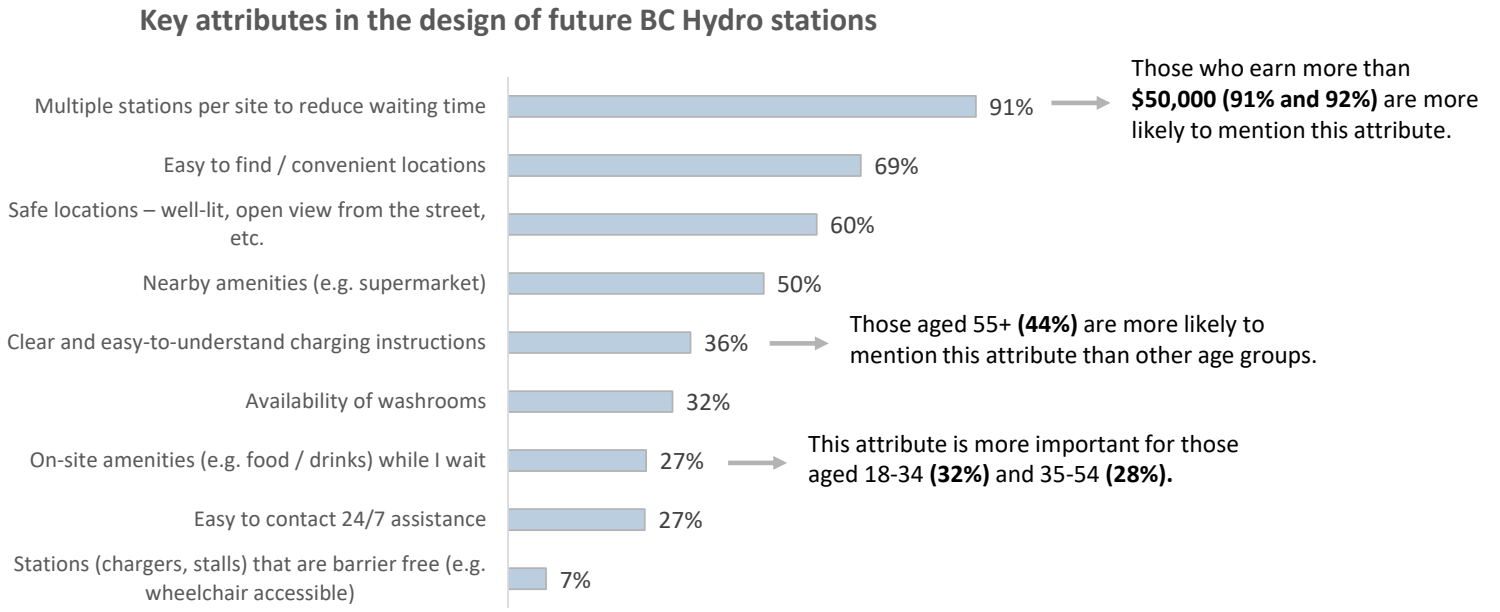


Users aged 18-34 (51%) and those who earn less than **$50,000 (50%)** are more likely to agree with this statement.

Those aged 18-34 (61%) and **35-54 (54%)** and those who live in **Lower Mainland/ Fraser Valley (54%)** tend more to agree with this statement.

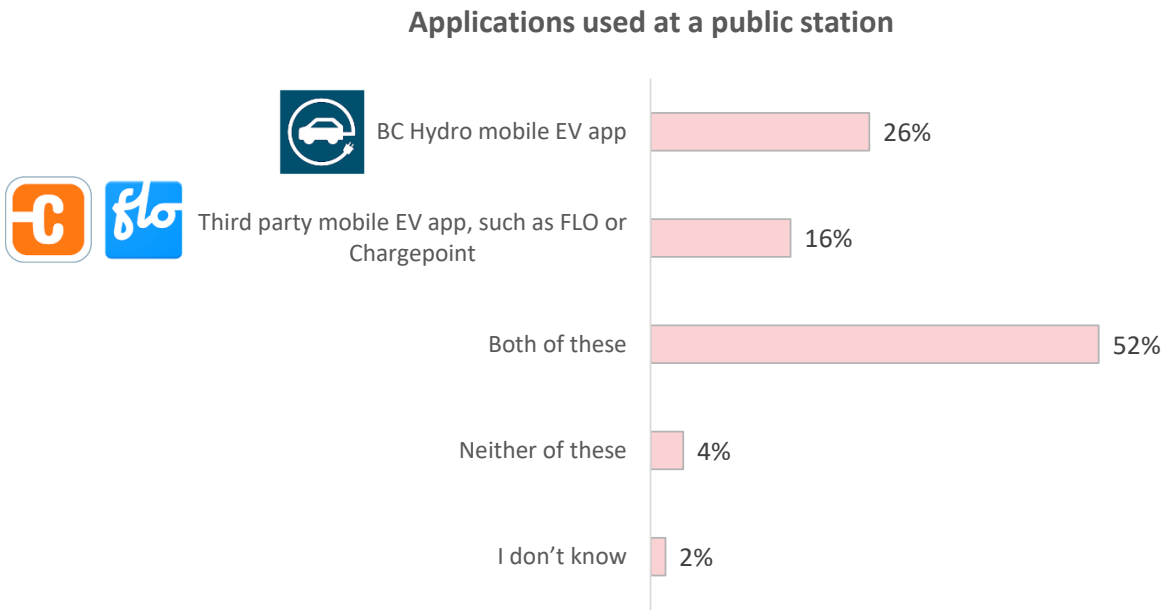
B2. Currently it is free to use BC Hydro's fast charging stations. On a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree, to what extent do you agree or disagree with each of the following statements?
Base: Total, n=4196.

Nine in ten feel having multiple stations at each site to reduce waiting time is a priority in the design of future fast charging stations



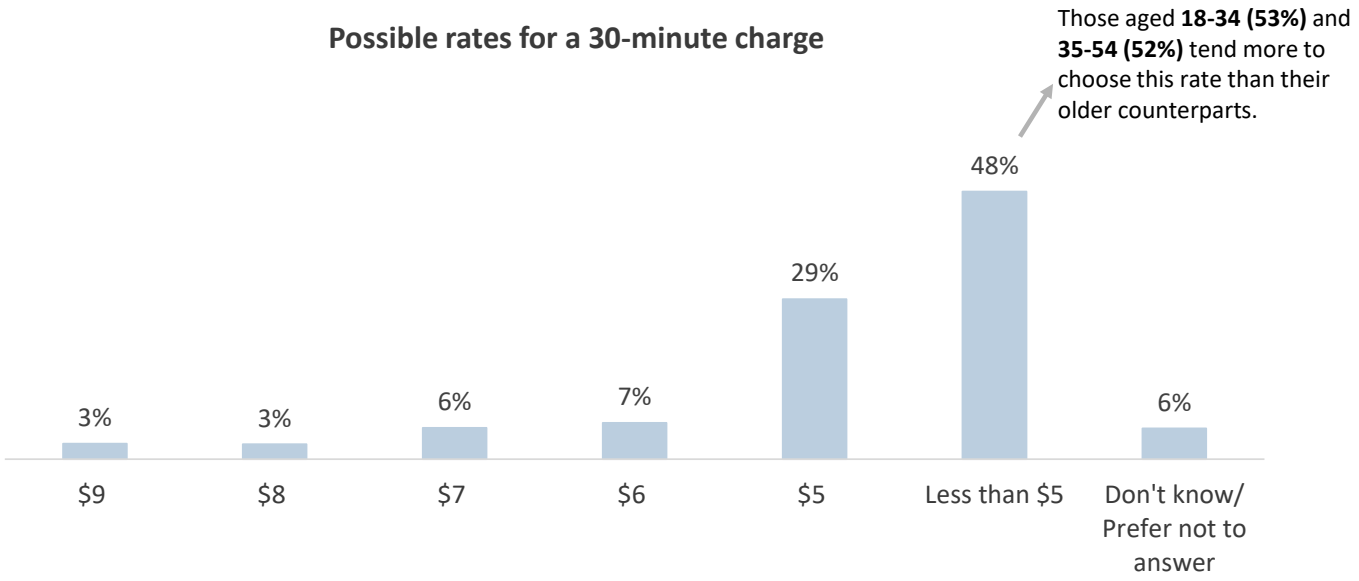
B3. Which of the following attributes would you prioritize in the design of future BC Hydro fast charging stations? (Multiple mentions)
Base: Total, n=4196.

Over one-half use both BC Hydro's mobile EV app and a third party mobile EV app (FLO or Chargepoint) at a public station



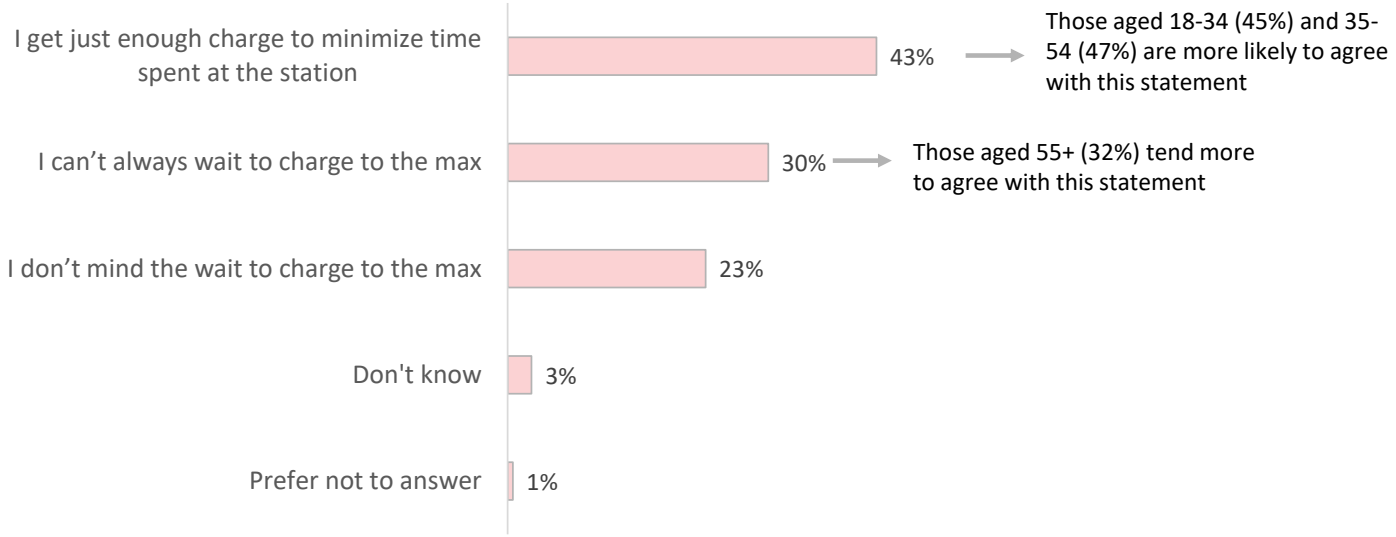
B4: Which of the following applications are you most likely to use when needing to charge at a public station:
Base: Total, n=4196.

Nearly one-half would be willing to pay less than $5 for a 30-minute charge



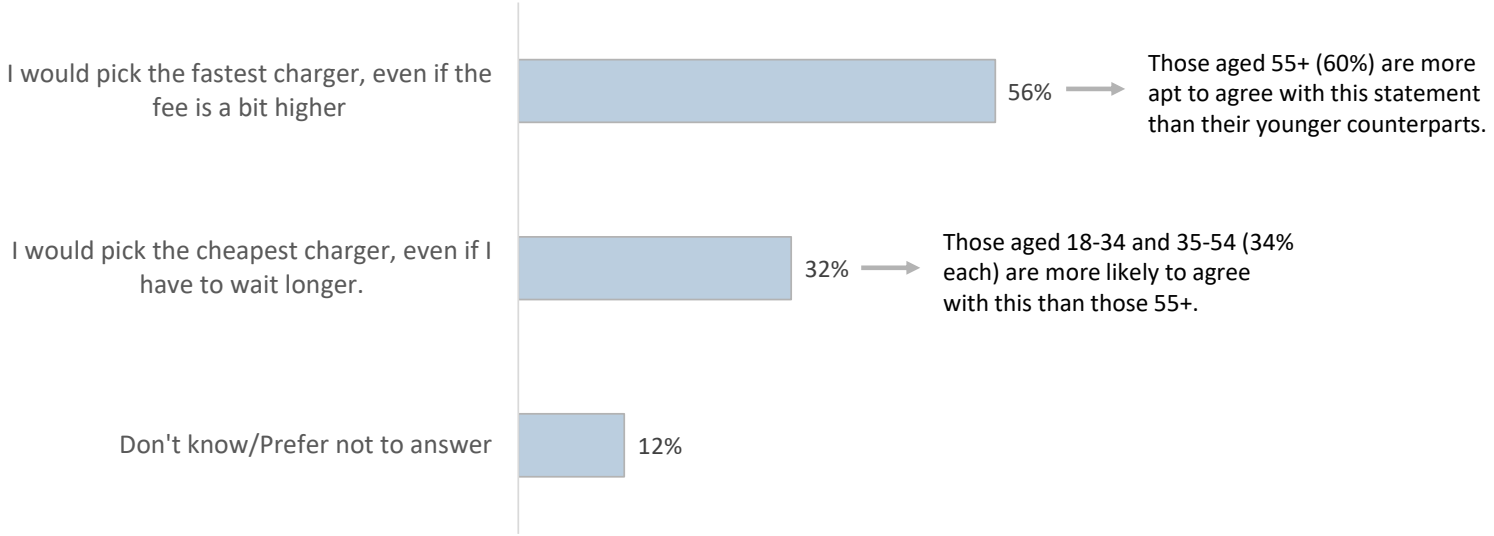
B5: Earlier we asked you to select the features you'd like to see the most in the design of future fast charging stations. If we were able to include most of the features which are important to you, what would you be willing to pay for a 30-minute charge. Assume the station power level is 50kW.
Base: Total, n=4196.

More than four in ten users feel they get just enough charge to minimize their time spent at the station



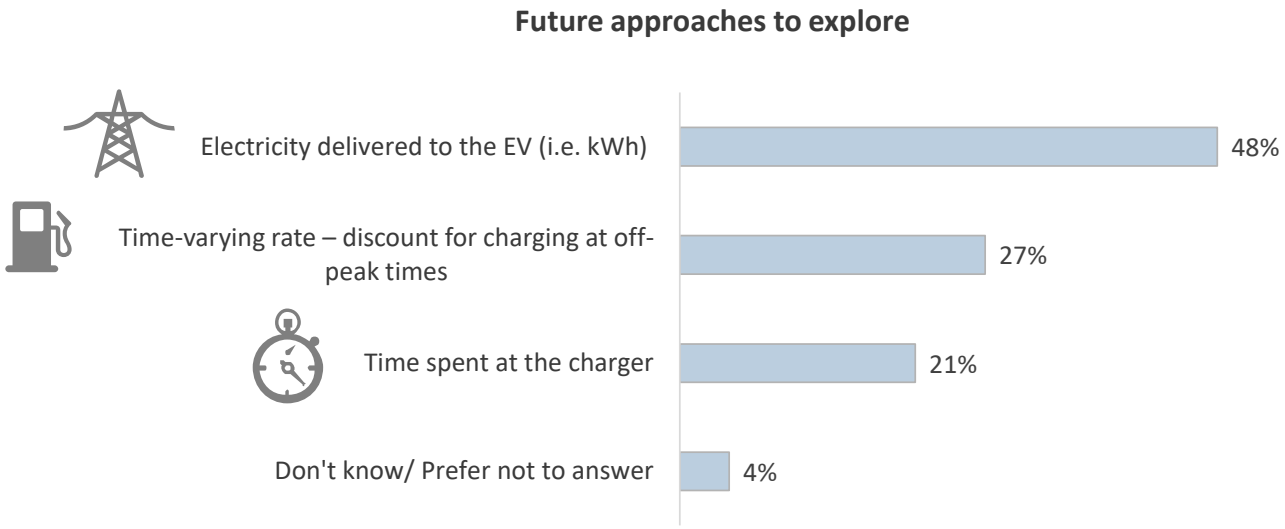
B6: Thinking of your usual public charging station experience, which of the following is most applicable to you?
Base: Total, n=4196.

Over half of charging stations users would pick the fastest charger, even if the fee is a bit higher



B7: The higher the charger power rating (e.g. 50kW, 100kW), the faster the time it takes to give your EV the same amount of charge. Assuming that fees at public charging stations would be calculated based on charging speed and time, which of the following statements would be most applicable to you?
Base: Total, n=4196.

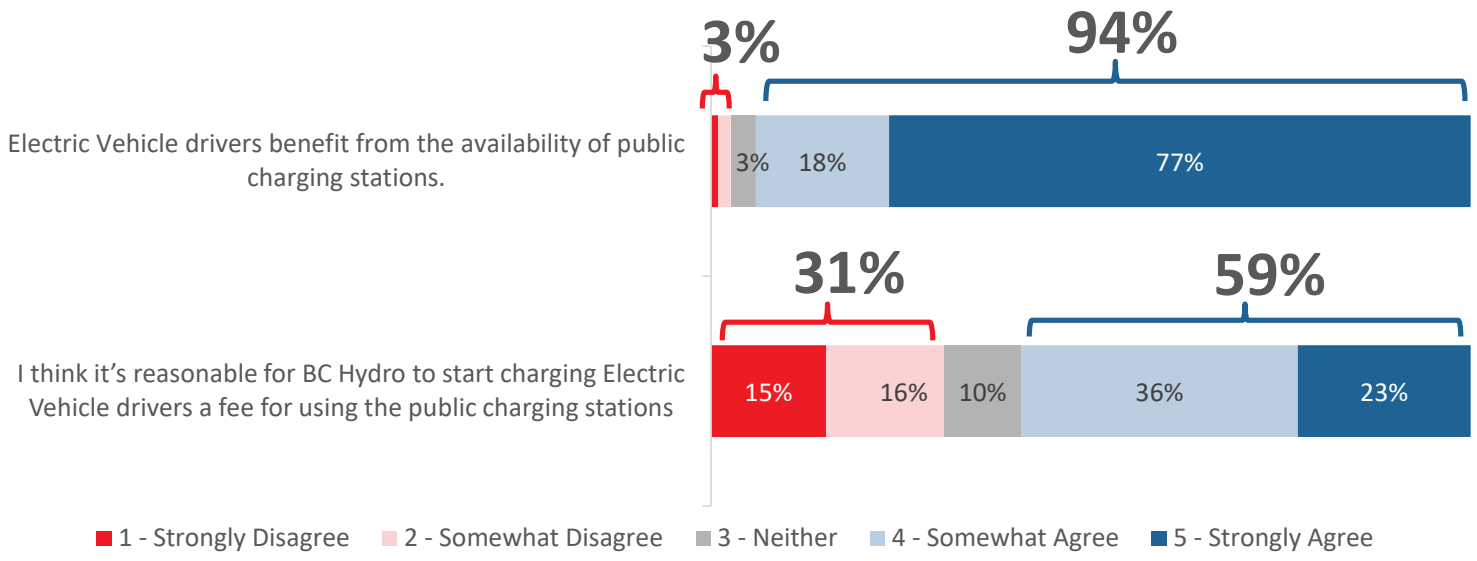
Nearly one-half of charging station users think that seeing the amount of electricity delivered to the EV should be explored in the future



B8. Which of the following approaches would you like to see explored in the future as a way to charge EV drivers for using a public charging station in your opinion?

Base: Total, n=4196.

Six in ten support the idea of introducing a fee for using public charging stations



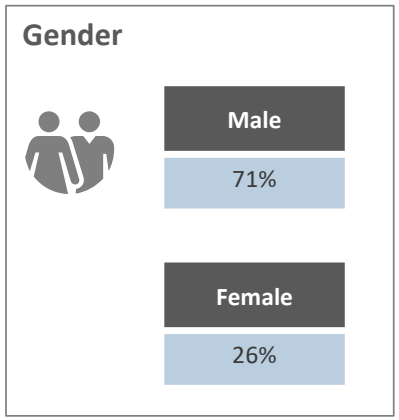
B9. To what extent do you agree or disagree with the following statements.

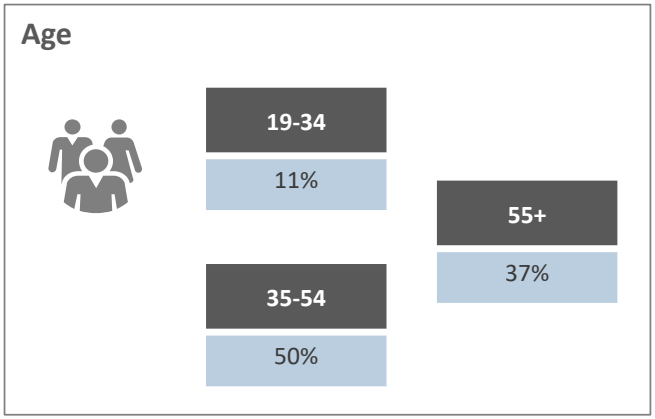
Please note mentions less than 3% are not shown on the chart

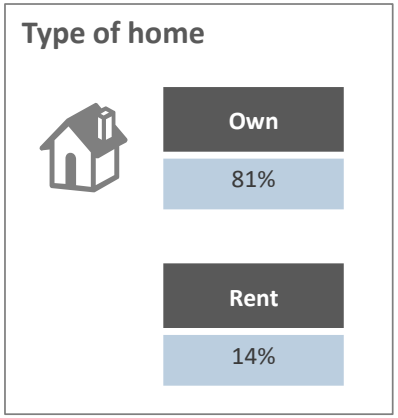
Base: Total, n=4196.

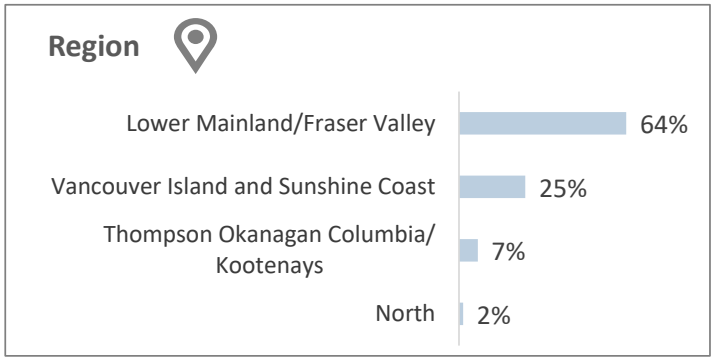
EV Demographics

Demographics



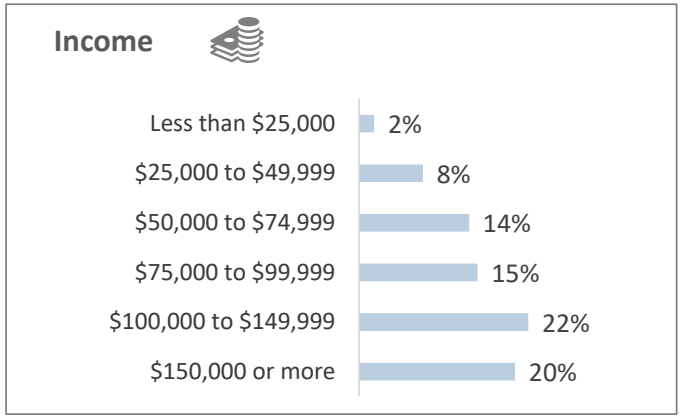


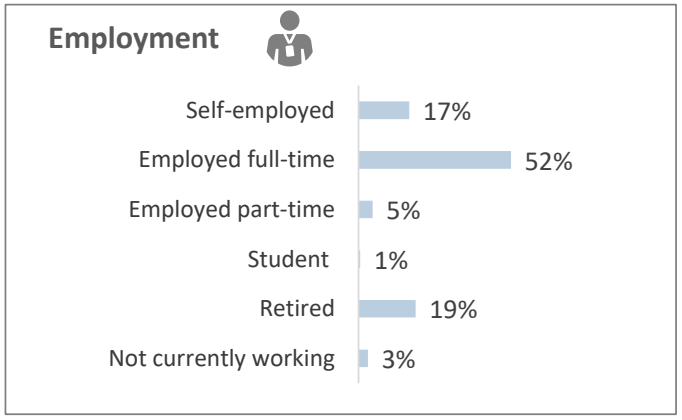




D1. Which of the following age groups do you fall under? D2. Which of the following do you identify as? D3. Which of these BC Regions do you live in?
D4. Do you currently rent or own your home?
Base: Total, n=4196.

Demographics





D5. Which of the following best describes your employment status? D6. Which of the following categories best describes your total household income before taxes?
Base: Total, n=4196.


Leger
Appendix

Questionnaire

Section B - BC Hydro EV Fast Charging Rate Survey

<Introduction> BC Hydro has installed more than 80 charging stations across the province where Electric Vehicle (EV) drivers can go to charge their EVs. BC Hydro is conducting customer research on our EV fast chargers and would like to ask you some questions to gather feedback about fast charging rates and the fast charging experience overall.

B1. Why do you use BC Hydro's fast charging stations? [Choose all that apply]

1. Location is convenient
2. It's fast to charge
3. It's free
4. I can't charge where I live
5. I can't charge where I work

95. Other [please specify]
99. Prefer not to answer

B2. Currently it is free to use BC Hydro's fast charging stations. On a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree, to what extent do you agree or disagree with each of the following statements?

1. If I have to pay a fee for charging at public stations, I will stop using those stations.
2. Public charging is critical for me as I have nowhere else to charge my EV.

Strongly Agree
Somewhat Agree
Neither
Somewhat Disagree
Strongly Disagree

B3. Which of the following attributes would you prioritize in the design of future BC Hydro fast charging stations? Please select up to five attributes.

RANDOMIZE

1. Availability of washrooms
2. On-site amenities (e.g. food / drinks) while I wait
3. Nearby amenities (e.g. supermarket)
4. Stations (chargers, stalls) that are barrier free (e.g. wheelchair accessible)
5. Clear and easy-to-understand charging instructions
6. Multiple stations per site to reduce waiting time
7. Easy to find / convenient locations
8. Easy to contact 24/7 assistance

6

Questionnaire

9. Safe locations – well-lit, open view from the street, etc.
98. I don't know (Exclusive, ANCHOR)
99. Prefer not to answer (Exclusive, ANCHOR)

B3a. Are there any other features that are important to you that you feel should be included at BC Hydro fast charging stations?
[Open end]
95. No other features I can think of
99. Prefer not to answer

B4. Which of the following applications are you most likely to use when needing to charge at a public station:
1. BC Hydro mobile EV app
2. Third party mobile EV app, such as FLO or Chargepoint
3. Both of these
4. Neither of these
98. Don't know
99. Prefer not to answer

The next section is about pricing. In terms of charging EV drivers a fee to use our public chargers, we aren't able to charge drivers like we do our residential and business customers – by units of power consumed. Instead, we are limited to time-based charging – that is, charging a fee per minute, for example.

B5. Earlier we asked you to select the features you'd like to see the most in the design of future fast charging stations. If we were able to include *most* of the features which are important to you, what would you be willing to pay for a 30 minute charge? Assume the station power level is 50kW.

1. $9 for a 30 minute charge
2. $8
3. $7
4. $6
5. $5
6. less than $5
98. Don't know
99. Prefer not to answer

B6. Thinking of your usual public charging station experience, which of the following is most applicable to you? Please select one.
1. I get just enough charge to minimize time spent at the station
2. I don't mind the wait to charge to the max.
3. I can't always wait to charge to the max.
98. Don't know
99. Prefer not to answer

B7. The higher the charger power rating (e.g. 50kW, 100kW), the faster the time it takes to give your EV the same amount of charge. Assuming that fees at public charging stations would be calculated based on charging speed and time, which of the following statements would be most applicable to you? Please select one.

ROTATE 1 and 2.
1. I would pick the fastest charger, even if the fee is a bit higher.
2. I would pick the cheapest charger, even if I have to wait longer.
98. Don't know

99. Prefer not to answer

B8. Which of the following approaches would you like to see explored in the future as a way to charge EV drivers for using a public charging station in your opinion?
Please select one.
1. Time spent at the charger
2. Electricity delivered to the EV (i.e. kWh)
3. Time-varying rate – discount for charging at off-peak times
98. Don't know
99. Prefer not to answer

B9. To what extent do you agree or disagree with the following statements:

a. Electric Vehicle drivers benefit from the availability of public charging stations.

b. I think it's reasonable for BC Hydro to start charging Electric Vehicle drivers a fee for using the public charging stations.

Strongly Agree
Somewhat Agree
Neither
Somewhat Disagree
Strongly Disagree

B10. Do you have any other feedback to provide to BC Hydro about potential EV Fast Charging Station rates and fees? [RECORD VERBATIM; PROBE AS NEEDED FOR DETAIL]
- [open end]
99. Prefer not to answer

Thank you for your responses so far. We have just a few more questions to go for classification purposes.

D1. Which of the following age groups do you fall under?

1. 19 to 24
2. 25 to 34
3. 35 to 44
4. 45 to 54
5. 55 to 64
6. 65 to 74
7. 75+
99. Prefer not to answer

D2. Which of the following do you identify as?
1. Male
2. Female
95. Other
99. Prefer not to say

D3. Which of these BC Regions do you live in?
1. Lower Mainland/Fraser Valley (Vancouver to Hope, including Whistler and Squamish)
2. Vancouver Island and Sunshine Coast (including Powell River)
3. Thompson Okanagan Columbia/Kootenays

Questionnaire

4. North (100 Mile House, Williams Lake, Prince George and north)
   99. Prefer not to answer

D4. Do you currently rent or own your home?
1. Own
2. Rent
   99. Prefer not to answer

D5. Which of the following best describes your employment status?
1. Self employed
2. Employed full-time
3. Employed part-time
4. Student
5. Retired
6. Not currently working (e.g. unemployed, homemaker, and on leave)
   95. Other (please specify)
   99. Prefer not to answer

D6. Which of the following categories best describes your total household income before taxes?
1. Less than $25,000
2. $25,000 - $49,999
3. $50,000 - $74,999
4. $75,000 - $99,999
5. $100,000 - $149,999
6. $150,000 or more
   98. Don't know
   99. Prefer not to answer

<Add in questions for contest>

Contest details

D7. Finally, would you like to enter the contest for a chance to win a $50 Amazon gift card?
1. Yes (Go to D8)
2. No (GO TO END)

D8. Please provide the following contact details to enter the contest.

Contest Terms (please attach the "BC Hydro EV Network Members Survey_Contest Rules.pdf")

Your personal information will be handled in accordance with the BC Freedom of Information and Protection of Privacy Act and will be used solely as a means of contacting you should you win the draw.

First name:
Last name:
Email address:
Phone number:

D9. Would you be interested in participating in future research from BC Hydro?
1. Yes (if yes please provide your email address)
2. No

END: Your feedback is very much appreciated. Again, thank you. For news and updates on BC Hydro EV programs, please check bchydro.com/ev.

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BC Hydro Public Electric Vehicle Fast Charging Rate Application

Appendix E

Public Engagement Presentation

BC Hydro EV Public Charging

Fast charging program & preliminary rates

Note: Call In Number for Audio: 855-353-9183
Access Code: 9157613#
(we are using WebEx for Visual Only)

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Participation instructions – 1 of 3

1. **To Hear the presentation:**
   - Please use phone number **855-353-9183**
   - Access Code **9157613#**

2. **To View the presentation:**
   - Click the link that was provided in your invitation

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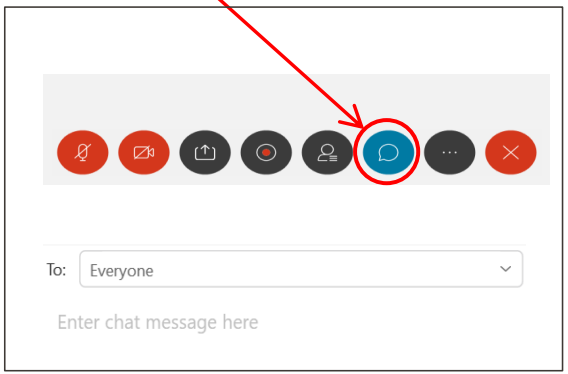
Participation instructions – 2 of 3

How to participate and ask questions in Webex

(Chat function icon)



With the large number of registrants we ask that you use the **chat function** to send us questions during the presentation. In the interest of time, please only send “questions” through the chat during this live presentation.

Thank you.

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Participation instructions – 3 of 3

How can you send us further questions and comments

We very much welcome additional questions or feedback via survey or email:

- We will be forwarding all participants a survey on December 8
- General comments, additional questions, or confidential questions can be sent to bchydroregulatorygroup@bchydro.com

Thank you.

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Agenda

- **Opening Remarks**
  Keith Anderson, Vice President, Customer Service
- **BC Hydro EV Public Charging Program**
  Mike Wenzlaff, Senior Program Manager, EVs
- **Public Charging Rates**
  Anthea Jubb, Senior Regulatory Manager, Tariffs
- **Closing Remarks**
  Fred James, Chief Regulatory Officer

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Purpose of today's session

BC Hydro is requesting your feedback on proposed rates for BC Hydro's EV fast charging service

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Welcome
BC Hydro is a Crown corporation. It's our mandate to safely provide our customers with reliable, affordable and clean electricity throughout the province.
We're here to help:
Switch our customers to electric vehicles – both charging at home and on-the-go;
Build market confidence with a robust and reliable fast charging network across the province; and
Support reduction of Greenhouse Gas Emissions as envisioned under CleanBC.
7
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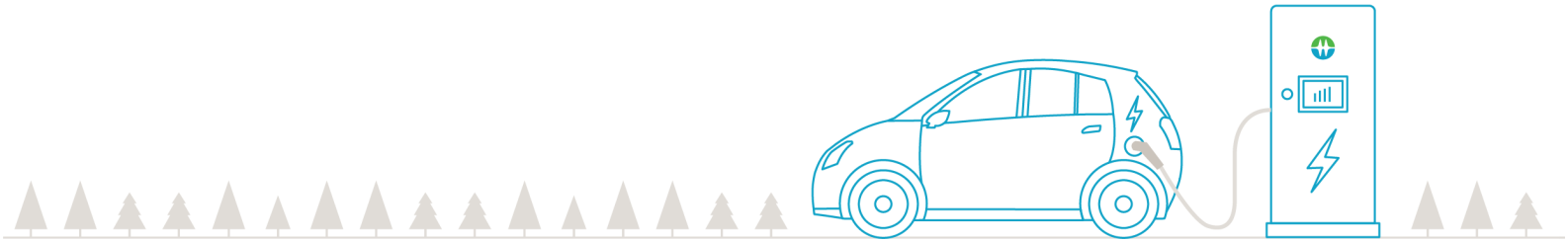
BC Hydro EV network history

We started to pilot stations in 2013

- **Commenced in 2013 –** Original demonstration project, a first in North America, to seed a network of fast charging stations from Vancouver Island to the Interior
- **Regional travel focus –** Based on consultation with stakeholders
- **Funding –** Majority of capital funding provided by Federal Natural Resources Canada and Province of B.C. EV infrastructure grant programs
- **We've been building EV driver confidence –** Equipment reliability and customer experience have greatly improved over last 7 years

Current state

BC Hydro EV charging



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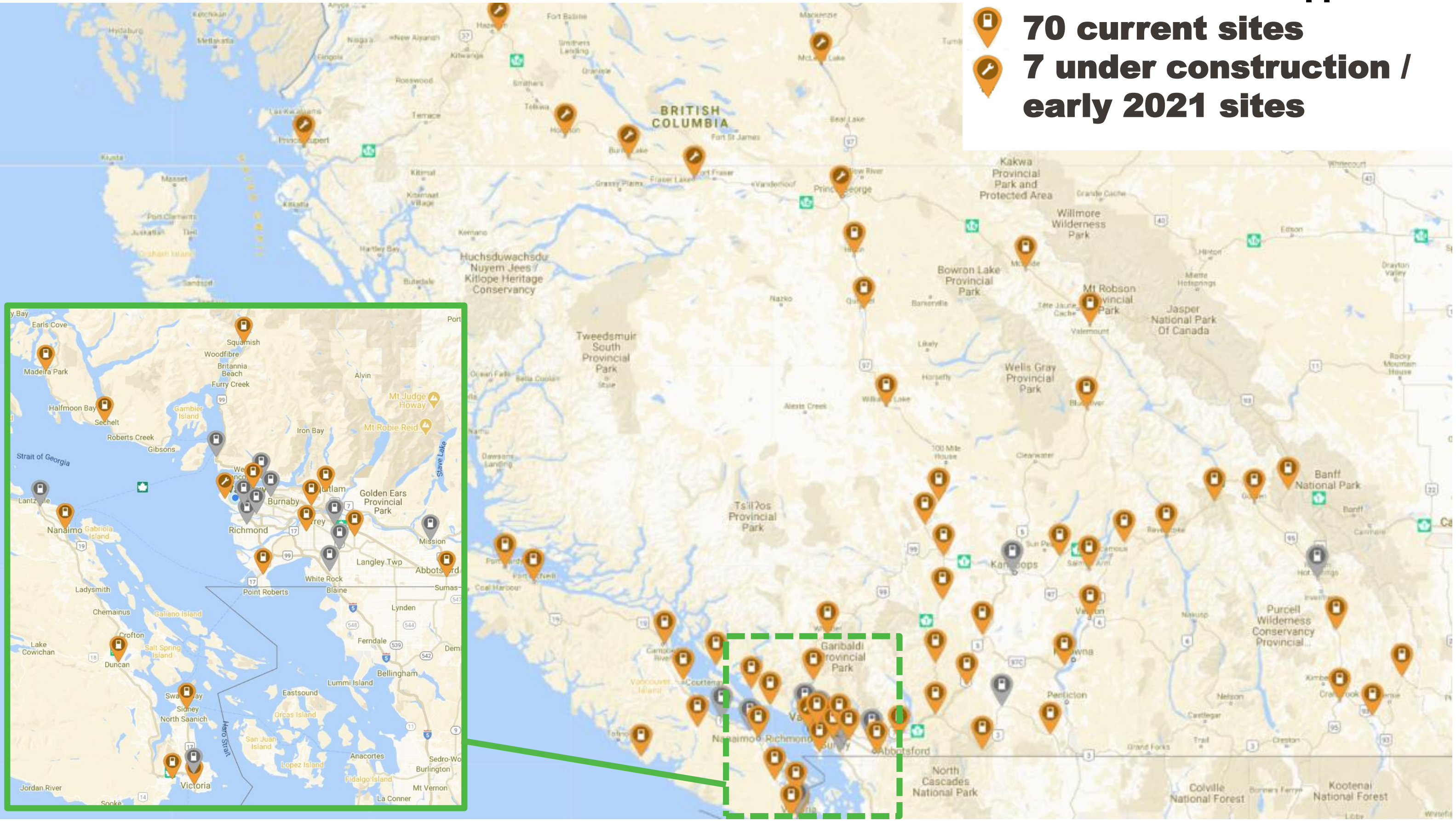
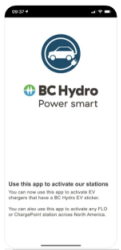

70 current sites
7 under construction / early 2021 sites
BRITISH COLUMBIA
Kakwa Provincial Park and Protected Area
Willmore Wilderness Park
Bowron Lake Provincial Park
Mt Robson Provincial Park
Jasper National Park Of Canada
Huchsduwachsdu Nuyem Jees / Kitlope Heritage Conservancy
Tweedsmuir South Provincial Park
Wells Gray Provincial Park
Banff National Park
Tsʼilʔos Provincial Park
Garibaldi Provincial Park
Purcell Wilderness Conservancy Provincial
North Cascades National Park
Colville National Forest
Kootenai National Forest
Abbotsford
Richmond
Nanaimo
Penticton
Squamish
Woodfibre
Britannia Beach
Furry Creek
Madeira Park
Halfmoon Bay
Sechelt
Roberts Creek
Gibsons
Gambier Island
Strait of Georgia
Alvin
Mt Judge Howay
Mt Robie Reid
Iron Bay
Slave Lake
Burnaby
Golden Ears Provincial Park
Mission
Gabriola Island
Langley Twp
White Rock
Point Roberts
Blaine
Sumas
Lynden
Ladysmith
Chemainus
Galiano Island
Crofton
Lake Cowichan
Salt Spring Island
Duncan
Ferndale
Bellingham
Lummi Island
Sidney
North Saanich
Eastsound
Orcas Island
Haro Strait
San Juan Island
Lopez Island
Anacortes
Sedro-Woolley
Burlington
Fidalgo Island
Mt Vernon
La Conner
Jordan River
Victoria
Sooke

BC Hydro EV network evolution

Made many improvements with others to come

- Stations open 24/7 and capable of charging all EV's that support Combined Charging System (CCS) or CHAdeMO DC connectors
- Recently improved station customer experience including more reliable chargers, lighting, accessibility and signage at many sites
- BC Hydro EV become an official EV network in 2019 – driver tools including mobile app, web portal and RFID cards, allowing both flexibility and privacy compliance
- Added roaming with FLO and ChargePoint for additional options
- Enhanced phone support from British Columbians who know B.C. roads and towns
- Installing two or more chargers at all new sites going forward
- Adding 25kW and 100kW chargers in addition to 50kW chargers at some sites



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Enabling EV travel across B.C. ...

McBride

Valemount

70 Mile House

Cache Creek

Surrey

Cloverdale

Saanich

Questions

BC Hydro
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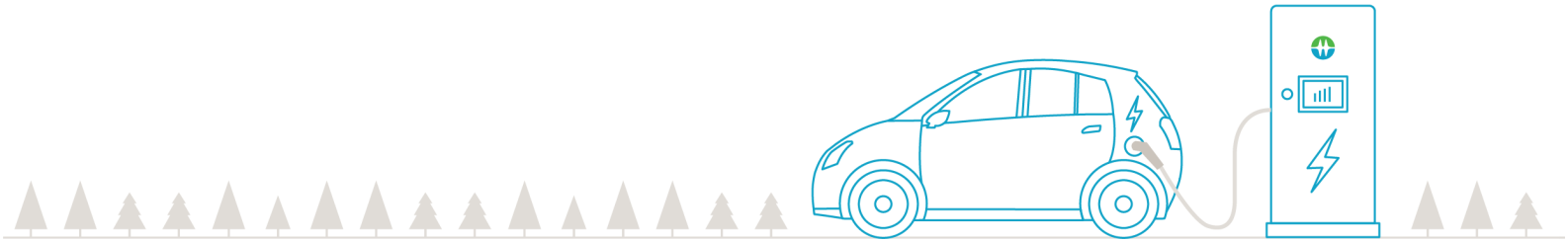
Customer research & insights

BC Hydro EV charging



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EV charging rate research summary

1. BC Hydro EV Network survey, sent to members – Leger
    - Section A Satisfaction with EV customer support (Fall 2019 & Summer 2020)
    - Section B Feedback on rates and the fast charging experience (Summer 2020)
2. In-depth individual phone interviews – BC Hydro (Summer 2020)
3. Other customer sentiment – PlugShare

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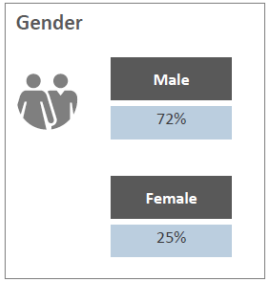
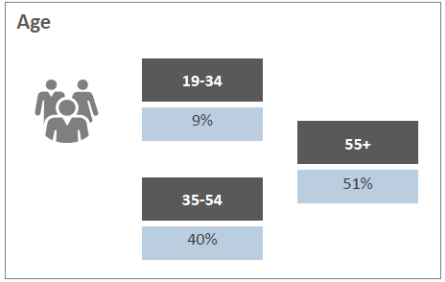
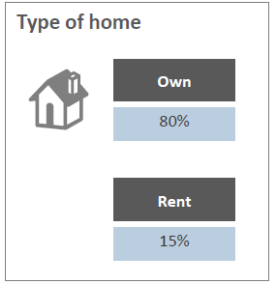
Satisfaction with EV customer support

Demographics of network members who responded to 2020 survey

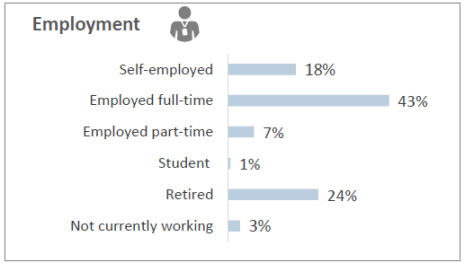


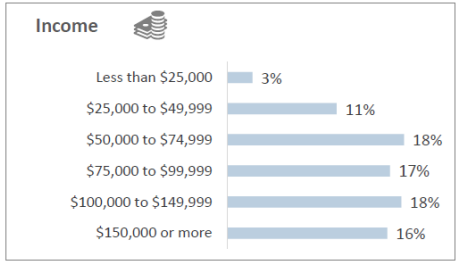


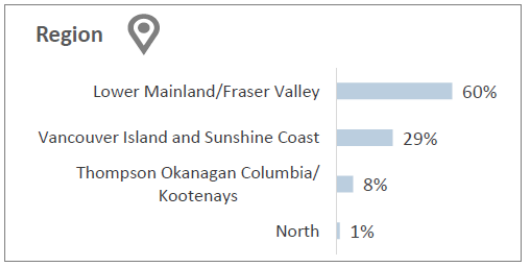


Key observations

- Most are male
- Most are 35+
- Most own their home
- Two-thirds are employed
- Most earn $50K/year +
- Almost two-thirds live in LM/FV







Source: Electric Vehicle Charging Stations Survey Section A, n=346 (Leger)

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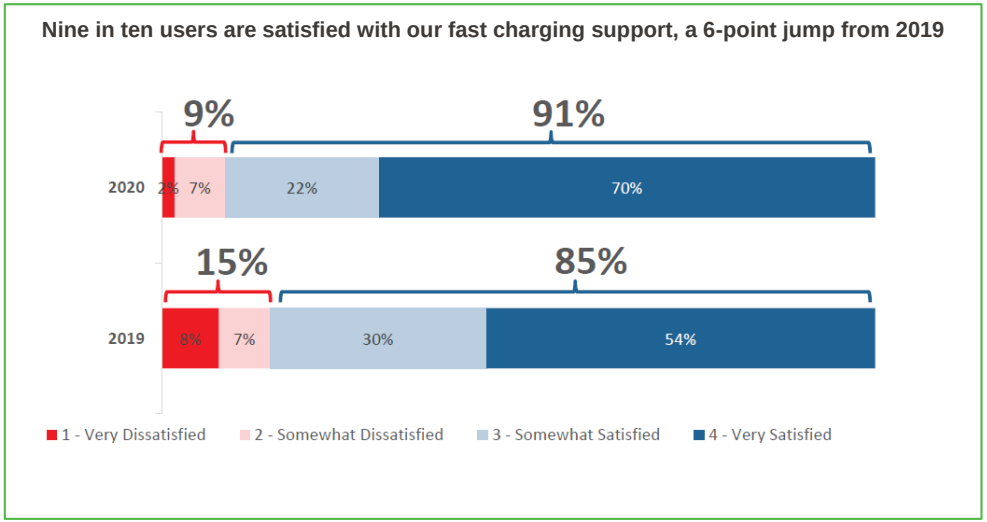
Satisfaction with EV customer support

Satisfaction has improved over last year



Source: Electric Vehicle Charging Stations Survey Section A (Leger)

Total 2020, n=269; Total 2019, n=112.

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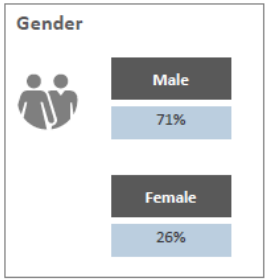
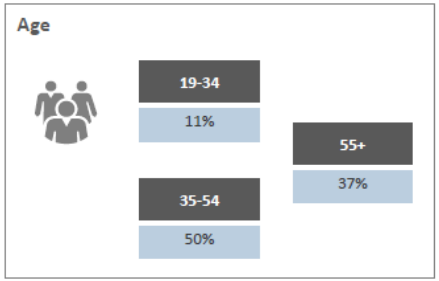
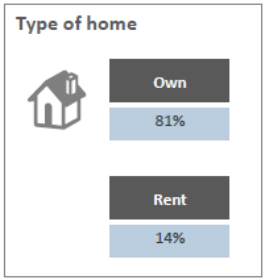
Feedback on rates and the fast charging experience

Demographics of network members who responded to this section

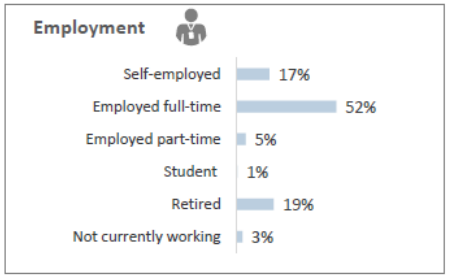


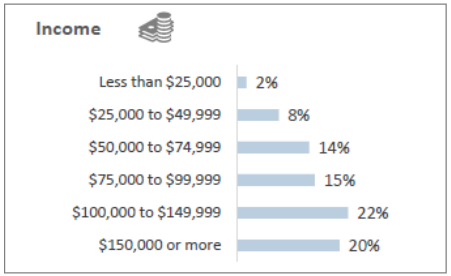


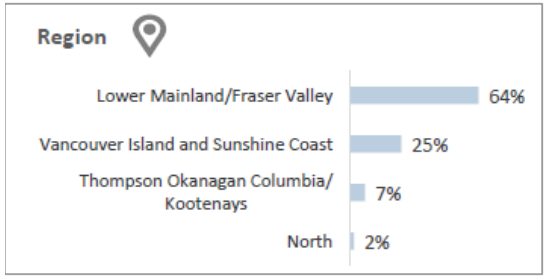


Key observations

- Most are male
- Most are 35+
- Most own their home
- Most are employed
- Most earn $50K/year +
- Two-thirds live in LM/FV







Source: Electric Vehicle Charging Stations Survey Section B, n= 4,196 (Leger)

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Feedback on rates and the fast charging experience

Almost two-thirds of respondents think it is reasonable to charge a fee

Main reasons for using BC Hydro fast charging stations

- Fast to charge
- Free service
- Convenient location

Most important elements in station experience

- Multiple chargers per site
- Easy to find / convenient locations
- Safe locations
- Nearby amenities

Support for a fee

- **Almost two-thirds think it is reasonable to charge a fee**

Time-based pricing

- Half would like to pay less than $5 for 30-min charge
- 20% would pay between $6 and $9 for 30-min charge
- Half would pay more for a faster charger

If we charge a fee

- **Half said they'd stop using the stations**
- **One-third said they have nowhere else to charge**

Support for other models

- Half would like kWh-based pricing
- One-quarter would support a discount for off-peak charging
- The rest are fine with time spent at charger

Source: Electric Vehicle Charging Stations Survey Section B, n= 4,196 (Leger)

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Feedback on rates and the fast charging experience

Summary of written comments on rates

I support a fee but …

- Should be less expensive than gas
- Should be more expensive than charging at home
- Should be less expensive than Tesla, PetroCanada, etc.
- Should be low enough to keep encouraging people to buy EVs
- You should be expanding the network and improving station reliability first

Time- vs. kWh-based pricing

- Time-based is a good idea because it encourages drivers to move along
- Time-based is very unfair – due to variability in charging output, vehicle battery, outside temperature, etc.
- "Charge us the way drivers are charged at gas stations" was the most frequently referred to analogy (by "fuel amount" versus "time spent plugged in")

I have some other ideas

- Hybrid model: charge drivers for kWh, plus time based for extended session length
- Base rate of $X to 80% charge, then increase fee
- Graduated time-based charging
- Have time-varying rates
- Free, or discount for BC Hydro customers
- Monthly subscriptions
- Location-based pricing
- Find another way to subsidize

Keep it free

- I justified the expense of buying an EV because of the free charging
- You should be rewarding EV owners; we are doing our part for the environment
- Free charging encourages EV adoption
- I will stop using your stations if you start charging a fee
- Keep it free for another year or two, or until the number of EVs reaches some critical mass

Other feedback …

- I want to see where the fees are going
- I want the fees to go into building new stations
- Provide more than one way to pay (not just credit card)
- Do more to enforce limits & etiquette
- Free up public charging stations by incentivizing at-home charging
- Improve the user experience
- Add the charging fees to my residential bill

Source: Electric Vehicle Charging Stations Survey Section B, n= 2,149 (Leger)

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In-depth individual interviews – key findings

1. Feedback on proposed fees @ 50kW

Source: Phone interviews conducted August to September, 2020

Per minute fee $0.20 ($12 / hour)	Per minute fee $0.25 ($15 / hour)	Per minute fee $0.30 ($18 / hour)
Some thought that this was the best option as drivers want the best price. Others thought this was too low as the perceived value of the service exceeds the price.	Some thought this was a reasonable fee as drivers will start to do the math and realize it's cheaper to charge at home. But there was an issue about costs to charge during the winter, which wouldn't help affordability.	Most thought this fee was too high. Would change their decision to use the station, especially if they had to pay parking on top of the charging fee.

Customer feedback on other power levels: 25kW charger: Less than half the cost of 50kW charger. 100kW: Less than double the cost of a 50kW charger.

2. Feedback on other fee structures

Subscription	Min. fee + rate	Time-varying rate	kWh-based rate	Seasonal	Urban vs rural
Most thought this wasn't a good option as drivers would overstay and abuse the system, and wouldn't benefit those who use the stations on an ad-hoc basis.	Almost no support for minimum fee. Would encourage people to stay as long as possible, would punish drivers who need a quick charge, and is problematic when stations aren't reliable.	Great option for garage orphans and people who have different shifts, smooths demand, increases utilization. Would require a different time limit overnight.	Overwhelmingly the favoured option. Seen as most fair because "in every other scenario drivers are being overcharged". One caution is it might create less urgency for a driver to vacate their spot.	Mixed reaction to this. Cheaper in winter would favour those who live in colder areas of BC. But more expensive in the summer would punish those who travel during the summer.	Good support for this. Rural stations are used by travelers and a valuable resource. Land value is less in rural areas, should be reflected in price. Gas in cheaper in rural areas too. Promotes social equity.

Summary of key insights

There is general support for a fee, with some cautionary advice

Charging a fee will improve behaviour at stations – it will push those with other options to charge elsewhere (home, work, other charging infrastructure, etc.)	Charging a fee means higher expectations of service – in return, drivers are expecting better reliability, more stations, and an improved app & station experience	Incentivize at-home charging to reduce demand at public charging stations	When people first bought EVs, they were thinking about the environment, now they are thinking about the cost of ownership, a charging fee is an extra expense
When compared to time-based charging, kWh-based charging was seen as the fairest approach – pay for electricity delivered not for the time spent at station	The price of gas is the barometer by which drivers judge a price as being “fair”	A fee punishes drivers who bought EVs to do their part for the environment and reduce their carbon footprint	Drivers also support a hybrid price structure; for example, where drivers are charged by kWh and penalized for idling time

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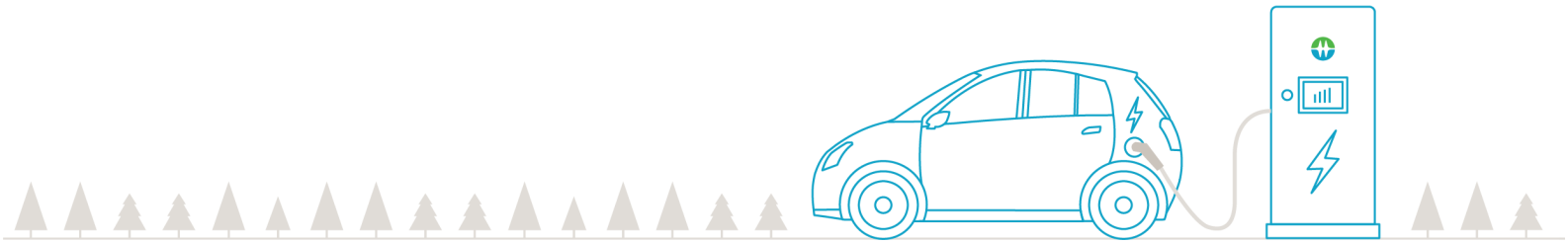
Jurisdictional scan

Public EV fast charging



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Jurisdictional scan – pricing

Source: PlugShare, Nov. 2020

Provider	Description of service & any additional amenities	Rate (cents/min) @ power level	Number of sites and chargers in B.C.
City of North Vancouver	• Single 50kW charger	20¢ 50kW	• 1 site
City of Vancouver *	• Single or 2x 50kW chargers	21¢ 50kW	• 5 sites • 9 chargers
Electrify Canada	• 4x chargers up to 350kW • Ample lighting, major retail parking lots	27¢ <90kW* 57¢ >90kW* *member discount program available	• 3 sites (additional 5 sites under construction) • 12 chargers
FortisBC *	• Single or 2x 50kW chargers	Current: 30¢ 50kW Proposed: 27¢ 50kW 54¢ 100kW	• 15 sites • 20 chargers
Hydro Quebec * Electric Circuit Network	• Basic to high quality stations • Single, 2x, 4x, 6x – 50kW, and some 100kW	19.6¢ 50kW 19.6¢ 100kW* *interim rate	• ~250 sites in Quebec
Petro-Canada	• 2x chargers up to 350kW • Ample lighting, on-site amenities/staff	27¢ up to 350kW	• 11 sites • 22 chargers
Tesla	• Proprietary stations (Tesla only) • 4 to 22 chargers per site up to 150kW	22¢ <60kW 44¢ >60kW	• 16 sites • 172 chargers

* Most comparable to BC Hydro deployments

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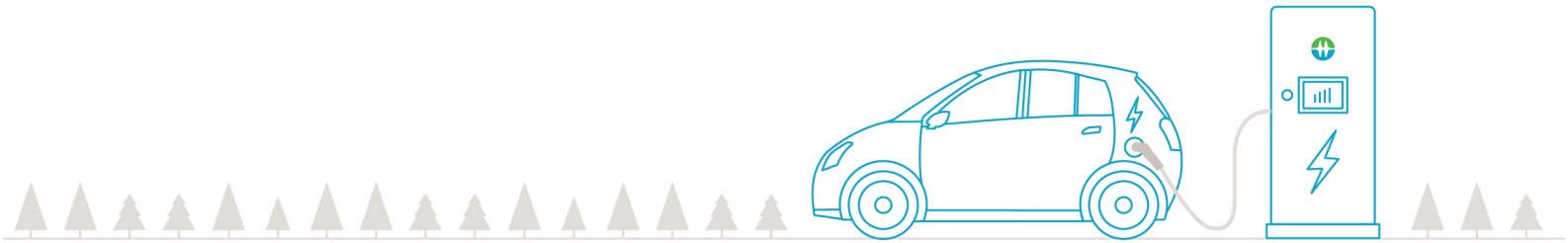
Preliminary rates

Public EV fast charging



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Regulation & regulatory context

Background

- Greenhouse Gas Reduction (Clean Energy) Regulation: Amended Jun 22, 2020
- BCUC Regulation of Electric Vehicle Charging Service Inquiry: 2018-2019
- FortisBC Rate Design and Rates for EV DCFC Service: Fall 2020
- BC Hydro Fiscal 2022 Revenue Requirements Application: Dec 2020

Rate application process

Overview

BC Hydro requires a new rate schedule to charge public EV charging stations

- Early 2021 we will apply to the BC Utilities Commission (BCUC) for approval of proposed EV Fast Charging rates
- BCUC will administer an open and transparent process to examine and decide on our rate design proposal
- All interested and affected parties may participate in the BCUC process by registering as Interested Party, sending a Letter of Comment or becoming an Intervener. More information on ways to get involved can be found at https://www.bcuc.com/get-involved/get-involved-proceeding.html.

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BC Hydro rate design objectives

Rate design objectives	How they apply to a public fast charging rate
Economic Efficiency	• Set pricing to achieve full cost recovery over the longer term, starting with recovery of electricity supply costs in the near term
Low Carbon Electrification	• Support low carbon electrification through transportation electrification
Flexibility	• Build in flexibility through repricing in three years and future redesigns such as kWh-based and time-varying-based pricing

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Rate design approach

- Energy based rate not currently feasible – lack of Measurement Canada approved DC metering
- Charge will be in cents/min - Metering/billing limitations
- Set pricing to recover electricity supply costs in the near-term
- Set pricing to achieve full cost recovery over the longer-term
- Convert Medium General Service (MGS) rate to a time-based rate ($/minute)
- Recover station capital and operating costs from all ratepayers, if meeting requirements of government regulation
- Propose evaluation and potential re-pricing in three years, which will be informed by utilization and price response data

Illustrative Rate model outcomes at 50kW

	Scenario 1	Scenario 2	Scenario 3
	Electricity supply costs	**Electricity supply + station operating costs**	**Electricity supply + station operating + capital costs**
Utilization rate	*($/min)*	*($/min)*	*($/min)*
3%	$0.25	$0.90	$1.30
5%	**$0.17**	**$0.57**	**$0.81**
10%	$0.11	$0.31	$0.43
15%	$0.09	$0.23	$0.31
20%	$0.07	$0.18	$0.24

Comments

- A 3 to 5% utilization rate aligns with published market studies
- Comparable service providers charge 20 to 30 cents/minute
- BC Hydro customers reported a willingness to pay 17-20 cents/minute

Assumptions

- Electricity supply costs valued at Fiscal 2021 Medium General Service rate (MGS), Rate Schedule 1500).
- Electric Vehicle charging information such as average charging length and average consumption per session are based on BC Hydro's 50kW station data from 2019
- Illustrative utilization rate

Key finding

- Station utilization must reach sustained average levels of 20% for the rate to be attractive and to achieve full cost recovery

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Bonbright rate design criteria

Bonbright Criteria	Grouping	Performance	Remarks
1. Price signals to encourage efficient use and discourage inefficient use	Economic efficiency	Fair	• Price level is intended to encourage efficient use of stations by encouraging usage relative to higher price levels • Per minute charge discourages inefficient use of stations by reducing wait times • However, rate does not fully reflect BC Hydro's marginal cost (rate covers MGS rate which should cover marginal energy cost and portion of marginal capacity cost)
2. Fair apportionment of costs among customers	Fairness	Fair	• Per minute charge benefits customers with larger battery size and is a disadvantage to customers with smaller battery size relative to per kWh charge • Stations are available to the public and same rate applies to all users • Over the near term, EV Public Fast Charging station revenue will not recover all costs of providing the service including capital costs (which will be covered by other ratepayers)
3. Avoid undue discrimination			
4. Customer understanding and acceptance; practical and cost-effective to implement	Practicality	Good	• The proposed rate is easy for customers to understand and practical to administer
5. Freedom from controversies as to proper interpretation			
6. Recovery of the revenue requirement	Stability	Good/Fair	• Provides stable recovery of electricity supply cost • Improve revenue recovery and revenue stability over long term by encouraging electric vehicle usage • Does not fully recover revenue requirement
7. Revenue stability			
8. Rate stability			

Illustrative Pricing for different power level chargers

More than 95% of BC Hydro's fast chargers are 50kW

- BC Hydro will soon deploy more 25kW and 100kW chargers at some locations depending on power availability.
- These power levels will also require a reasonable rate per minute

Illustrative rates			
Max power level	**Per minute rate**	**Cost for 30 mins**	**Comments**
50kW	$0.20	$6.00	• Energy supply recovery based on MGS rate
100kW	$0.31	$9.30	• Energy supply recovery based on MGS rate
25kW	$0.12	$3.60	• Will be deployed at sites where 3-phase power is limited • Energy supply recovery based on Small rate • Includes some operation and maintenance recovery

Monitoring and evaluation

How we will be monitoring and evaluating the new rate

Annual monitoring

- New load (energy, demand, load shape and load factor)
- Revenues
- Incremental costs

Three year evaluation

- Utilization
- Potential Repricing
- GHG reduction
- Customer feedback
- Availability and evolution of a Measurement Canada DC metering standard

Question

Are there additional metrics and outcomes we should monitor and evaluate?

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Question 1

What is the appropriate rate for a 50kW charger?

- Target range is between $0.20/minute and $0.25/minute
- Bottom end of the range would encourage greater utilization
- Top end of the rate would provide higher cost recovery

Question 2

Should it be the same rate for chargers with different power levels?

- BC Hydro has acquired and will soon deploy additional DC fast chargers with other power levels (25kW and 100kW)
- Simplicity for near term or variation in pricing?

Question 3

How might we increase utilization or improve experience?

- Sites / locations
- Support / communications
- Accessibility / usability
- Lighting / safety / signage
- Number of chargers per site
- Power level of chargers

Question 4

What terms and conditions are appropriate for both station users and to protect all BC Hydro customers? How do we strike the right balance?

Comparison to Current Electric Tariff Terms and Conditions	
Similar	Customers are responsible for the safety of their own property (extend to vehicle)
	BC Hydro can't guarantee service level
Unlike	BC Hydro is seeking ability to temporarily waive fee for specific charger / site for operational reasons
	BC Hydro will require collection of data specific to activation/payment
	BC Hydro can't guarantee connectivity for charger activation including mobile apps, cellular network or 3rd party roaming partners

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Closing Remarks: Rate Application Milestones

2020	• December 07	Public engagement via webinar
	• December 11	Deadline for feedback on webinar
2021	• Late January	BC Hydro will file rate application with BCUC
	• Early February	Likely date of intervener and interested party registration
	• End of February	Interim rate approval
	• Spring 2021	Rate proceeding underway
	• April 2021	Interim Rate effective date
	• Summary 2021	Rate proceeding underway

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Closing Remarks

Key contacts and process

- BC Hydro and the BCUC values your participation in the regulatory process
- Participation can be low involvement (e.g. letter of comment) or high involvement (e.g. interrogatories, legal submissions)
- Please contact BC Hydro Regulatory Group with any questions about the regulatory process: bchydroregulatorygroup@bchydro.com
- Submit your feedback form by December 11, 2020

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Contact information

BC Hydro Regulatory

- BCHydroRegulatoryGroup@bchydro.com
- For this presentation and the feedback form of the session https://www.bchydro.com/toolbar/about/planning_regulatory/regulatory.html

EV Program Support

- http://electricvehicles.bchydro.com – all EV programs
- BC Hydro EV public network information and support:
    - ev.bchydro.com
    - evsupport@bchydro.com
    - 1 866 338 3369

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BC Hydro Public Electric Vehicle Fast Charging Rate Application

Appendix F

Public Engagement Feedback

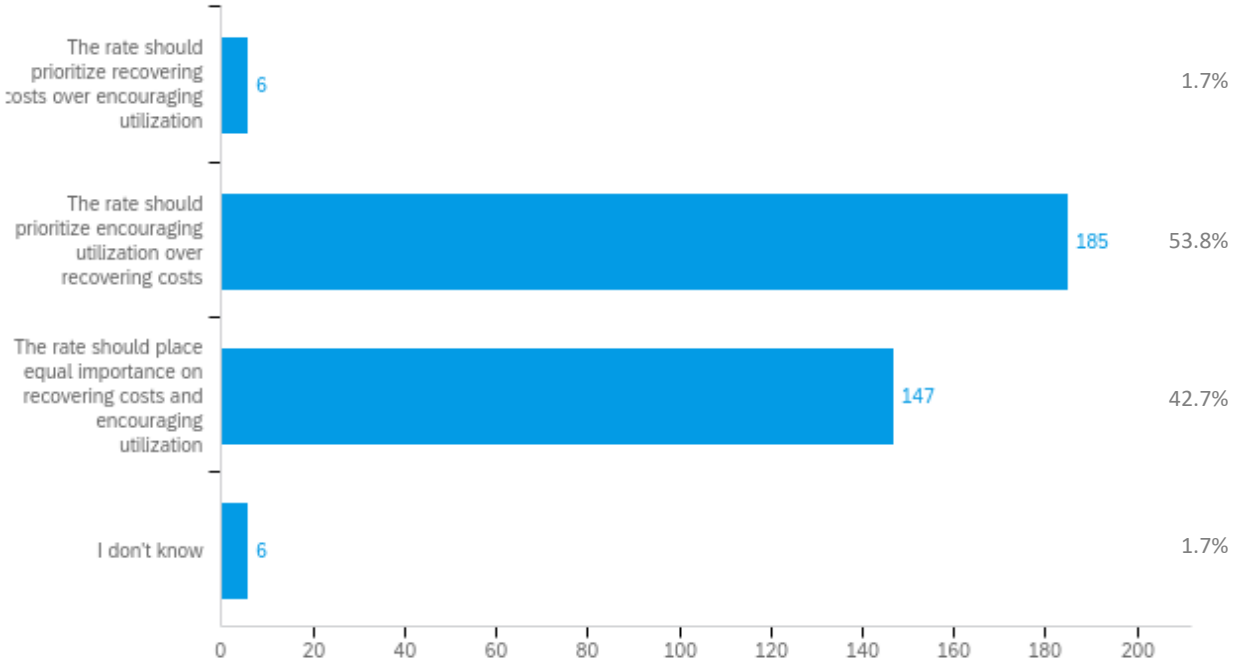
EV Fast Charging Rate Public Consultation Feedback Form Results

Following the public consultation on Dec. 7, 2020, a link to a feedback form was emailed to participants. For those who were unable to attend but wanted to provide their feedback, a link to the form was also made available on bchydro.com. The survey, which was open from Dec 7 to 17, 2020, received 359 recorded responses. Responses to the open-ended questions are included here but have been edited to correct obvious spelling errors as well as remove private information and inappropriate language.

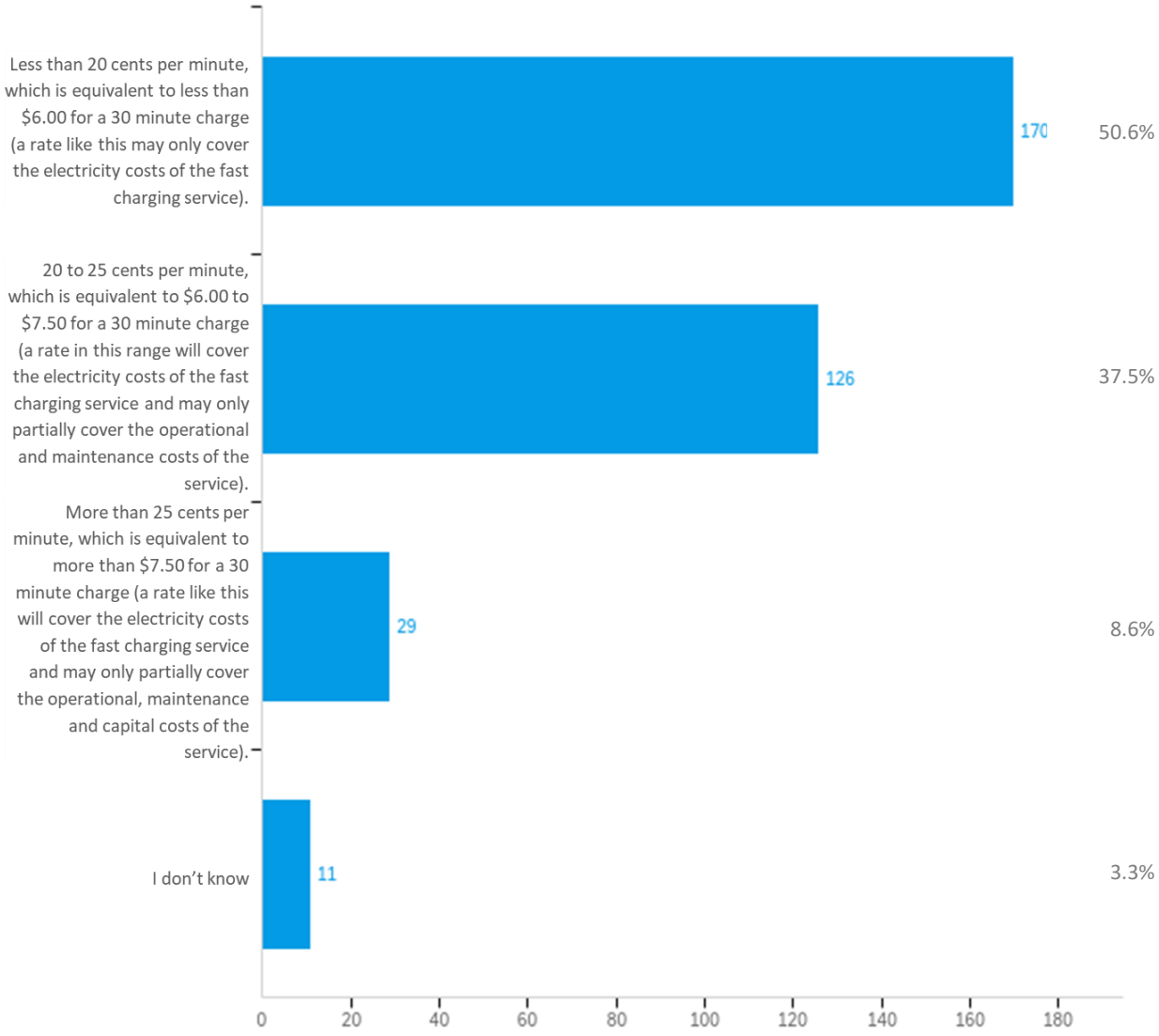
Feedback provided to us after the survey closed was added to the responses to the relevant open-ended questions.

Survey questions & results

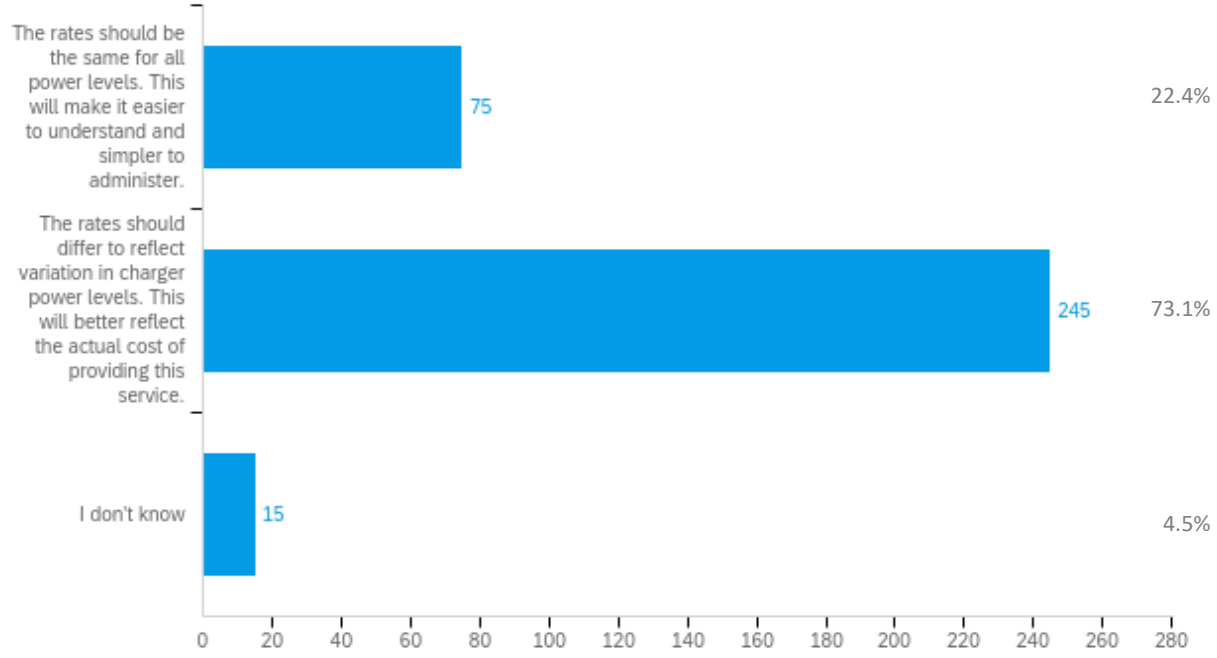
Q1 In determining the rate for DC fast charging service, how should we prioritize recovering costs associated with our fast charging service versus encouraging utilization of our fast charging stations?



Q2 In your opinion, how much should BC Hydro charge customers for using 50kW DC fast chargers?



Q3 In your opinion, how much should BC Hydro charge customers for using 25kW and 100kW chargers compared to 50kW chargers? *Note: Currently, more than 95% of BC Hydro's fast chargers are 50kW.*



Q4 Do you have any feedback on how to improve the utilization (i.e. increase the usage) of BC Hydro's fast charging service? *Note: Please make sure to not include information of a personal nature or information that could be used to identify other persons. Any such information, if provided, will be removed from your responses and discarded.*

1) Fees should be low as an incentive to promote the transition to electric transportation. Fee can be increased after a few years, and over a number of years until they are full cost recovery (charging infrastructure plus electricity plus profit); 2) Fee should be least expensive for the first 10 minutes of charge, then step up in price for each subsequent 10 minutes of charge. This would promote short use of each charging station; 3) fee should be very inexpensive for (even when assessed on a per kWh basis) for the 25 kWh; a little more expensive for the 50 kWh; and a little more expensive for the 100 kWh; and increasing step wise. This fee structure would better assure distance travelers under a time crunch have the fastest charging stations available to use; 4) BC Hydro needs to push the Canadian Government (Measurement Canada approved DC metering) to make per kWh-based pricing feasible; 5) BC Hydro needs to work with province to establish fines for ICE vehicles parking in front of EV charging stations.
Larger rebates to encourage home charging
Mobile phone apps are preferable to having to carry cards, but the apps sometimes don't work properly, or the instructions are not simple and easy to use.
1)Simplify the phone connection system 2) Reduce charging rates during normally low utilization times. 3)Locate charging stations near amenities such as restaurants which could assist in offsetting the installation costs in return for extra business they would from those charging their vehicles 4) Keep rates moderate 5) Identify, in real time, whether chargers were in use or available on the website 6) Keep the rates lower for up to 80% charge 7) Enhance the distribution and number of chargers

Charge by the Kwh. Charging by time is going to be confusing to users as different EV's charge at different rates. Dealing with this discrepancy will create unnecessary administration and cost to the tax payers. The goal should be to privatize the EV charging system and let the market determine a fair price. BCH should focus on policy that assists the private development of an EV charging system
Rate design given the current state of technology, along with issues related to being able to charge fees based strictly on energy consumption makes this a complex topic. There are many issues at play. For example the need to integrate universal design into EV charging infrastructure. The need to support 2 EV charging connector types when there is in fact no official or mandated plug connector standard. Much less the ability to support Teslas.... which given the market account for a huge market share. Many, many issues to grapple with. Further, we need to be future proofing DCFC infrastructure design both in terms of technology choices and bandwidth. Not to mention co-locating L2 charging capacity with DCFC sites. DCFC sites supporting only single or dual chargers will quickly be inadequate over the lifetime cycle of all current DCFC installations. Design needs to be as much as possible "self-policing" in terms of users limiting their charging session durations. Perhaps with a fee structure that escalates after pre-defined session durations past 30 to 40 minutes. Easier said then done.... as this only matters if there are users waiting of access! In other words.... I acknowledge that I don't have the answers.... but I have a lot of concerns! And as a Tesla owner, I marvel at the elegance and simplicity of Tesla Supercharger installations when compared to DCFC sites. And I'm not advocating for DCFC sites to support Tesla's charging connector. The opposite.... in that I'd advocate for DCFC deployment to quickly move to supporting a single connector design (CCS-Combo 1). As well for BC Hydro, and the BC Government to advocate to the federal government to move to supporting this single plug design. Tesla manufactures its vehicles for Europe and China with the local standard connector types. The current presence of three connector types is not future proofing the interests of EV deployment! I rant too much!
We need more fast charging stations!
Change the rate for different times of the day, eg 1 rate for 7am-7pm, another from 7pm-12am and a third from 12am-7am.
Also Give rough approximations relative to “equivalent tank of gas”.
Have more chargers at each location. Ensure cars with supercharger network access such as Teslas do not use your chargers. Ensure that chargers are located where there is access to washrooms, food or beverage services or shopping/recreation opportunities. Have clear signage on time limits, costs, purpose of the parking spots (not for non-electric cars to park). Have your chargers on one network (Chargepoint with the ability to see if a charger is in use so vehicles don’t head to a charger only to find it in use, especially since these chargers are spaced out across the Lower Mainland). Find out if the chargers at Surrey City Hall are for public use or not available based on the whim of the current mayor.
The federal and provincial governments have done very little to encourage green initiatives. This service should be maintained at no or little cost for early adopter EV owners who are paying through the nose fir these cars already.
Definitely require more fast charges on Vancouver Island. The island sells the most Electric Vehicles per capita because of our mild weather conditions.
There should be escalating rates for duration of charge. If you charge for 30 min (25c/min) if you charge for 60 min (25c/min for first 30 min and 50c/min for more than 30 min). Especially at DC chargers so people don’t sit at DC chargers when the charge amount is slowing down to trickle charge levels and other people are waiting.
Low price and good availability (i.e. multiple charging docks per site). BC Hydro can and should leverage provincial and federal grant $ to offset substantially all initial capital costs of DCFC's. Also, it's reasonable for the provincial government to fully/mostly fund operating and maintenance costs for another few years (until new vehicle EV market share gets to 75%+/-).
I am unable to charge at home. I would actually reconsider my purchase of EV because I need to drive to Richmond or go downtown for a fast charge. The other slow charging stations have been a pain and even though one is within a mile of me, I don't use it. I don't have time to sit for 2 hours (limit) for a small charge. The cost and ease of installing charging systems at home when you don't have a garage needs to be addressed. The UBC station was taken away a while back. That was not reasonable for me. A new one with enough stands would help but I would like to charge at home. I cannot go over a sidewalk on my corner lot. I want to do my part but this has been a challenge. The EV vehicle seems to lose charge in the cold. I don't drive too much but need to charge every 4 days in order to not have the car be vulnerable.

Encourage most charging stations to be locally supported, even community sponsored. Time limits, low cost and a dedicated user group keeps these used 24/7. Charging locally is different from charging when traveling. Trip charging can be preplanned, needs to be guaranteed and so can cost more
For long distance trips you really need Tesla supercharger level charging capability. Level 2 chargers just don't cut it. I look to BC hydro to provide such chargers. I have never charged at a Level 1 charger (except at home - regular 120V plug) and unless you stay overnight at a hotel - very limiting and problematic when travelling/vacationing, Level 2 chargers are not the answer. Too many people are using free charging instead of charging at home - no one should be justifying free or low rates because they bought their EV on that basis. I still think you need to get around time-based pricing - it should be charge based just like gas - it's not how long you take to fill the gas tank it's how much gas you have.
Some of your charging stations don't have washroom facilities close by or they are closed EG: Fast food outlets, public restrooms open 9-4pm (Hope) etc.
Implementation of charging for the service should aim at maximum utilization by keeping the fees fair and reasonable at least between stage 1 & 2 household rates per KWh. not by the time.
Tesla charges $6-$8 to charge my model 3. superchargers are fast, convenient, never bug out, and no fiddling with apps or RFID cards. Also kWh-based pricing is the ONLY way to charge for electricity. With so many variables at play (outside/battery temperature, vehicle type and condition, battery management system etc), charging customers any other way is stupid. Can you imagine charging gas/diesel at the pump by the minute, and each car/hose/tank could throttle the flow rate up or down at any given time? Why does BC have to follow the feds? Just do it!
You could make Wi-Fi available at stations and by having this you could make them more interactive eg charging rates protocols and educational. Rates could change with the time of day to encourage off peak use.
location where vicinity of shops. sophisticated applications which identify availability.
It's a balancing act. You want usage but not so much as to result in long waits and customer dissatisfaction. The best solution would have users charging primarily at home while charging stations are used for those who need it during travel times. Charging for use is a good start. I see many people who have been parked at stations for hours on end and while some might have no at home charging options, it can't be the case all the time. So in order to emphasize charger use for those who really need it during the day and aren't just being cheap. 1. put in a reasonable fee structure like you are proposing. 2. keep it simple. this idea of different rates for different levels of charger is dumb. Imagine if a litre of gas cost more at faster pumps than at a slower one???? 3. find a way to incentivize home chargers. I favour a credit on the home bill for everyone who has installed a level 2 charger. This removes some of the angst that people have about level 2 home electricity rates and charging at home without having to look at things like separate metering for car chargers. 4. Consider tying charging fees to a home electricity account when possible. I for one don't want the bother of another account when I pay Hydro monthly already. Just another thing to take care of. Would rather just pay my electrical bill once thank you.
Surely you can get an actual usage of the charge and charge that cost. We have a BMW I3 and a Mitsubishi PHEV. They don't charge the same?
Enforce time limits of 30. - 40 minutes at fast charging stations
Have more chargers at each site. Encourage public/private initiatives, so that FC stations benefit private businesses and customers where they already want to be.
You must discourage cars using the chargers above the drivers minimum need. Lineups are my biggest obstacle to using chargers
Other companies charging EV owners, charge far less than the proposed rates by BC Hydro. Your rates should be the equivalent of what is being charged in the market place. My experience is that your proposed rates is triple or higher at minimum. I will not use your charging stations if this is the result. Also, set a time limit. The free charger at our community centre has a two hour limit. After two hours your charge ends, regardless of who sling the EV is in the charger. People learn quickly and leave the charging stations for more accessibility for all.
Have space at new chargers for cars with trailers. Have more chargers at new locations and increase numbers in some locations like Cache Creek. Add locations on Hope-Princeton-Trail route

I believe to start off, people should be allowed a certain amount free per month. There should be an increasing rate the more you use it. I personally only use public chargers when absolutely needed, so in essence I am paying to charge my vehicle at home anyways.
Adding a free will definitely make it easier to charge. You won't have to worry about little battery cars like PHEV from hogging the DC fast chargers for their battery that can only charge at 10kwh or less
You need to have multiple charging stations at each location and charge a punitive rate above 39 minutes to ensure people don't just park and leave their vehicle. This will free up the charging station so more people can use it and they will reliably know they won't have to wait long
Provide a Tesla charging option. What is the point of making a service that ignores the biggest EV market?
I think there still needs more research needed and improvements before charging customers for services. More stalls to charge, improving service for a wide variety of vehicles and various areas to charge. More time and consultation still required
Expanding your network has been very positive. To improve utilization you must keep the rate low and increase it over time as more people adapt to owning an EV.
Rate should be base on energy use, like $/kwh, not by the time it was used. Even by energy used, should be limited to 1 hours used so people will have a fare use of the charging station.
The rate should be charged based on electricity delivered, not based on time, as this changes drastically based on a number of factors (ex. Temperature, model of car, if others are using the charger next to you, state of charge, etc.) We don't charge gas fillips based on the speed of the pump, only the gas delivered.
Place limits on charging times to 30min max and/or 80% charge as a maximum.
Perhaps a waitlist system tied to the app. The user will have a good idea when they can attend the site. Less parking space needed. If the fee charged is time based then more 25 Kw units next to the 50kw units.
The rate should be based on the power usage not per minute. My Kona charge rate is less that 50 KW. So it is unfair to charge per min when some EV's charge 50 to 100 KW which is cheaper for them that the EV's that charge slower which cost them more
I wouldn't worry about "utilization". The important thing is availability, because that's what makes it possible to switch to EVs. Most people will charge at home, so utilization may never be high, but we still need these stations occasionally. That's why pricing is not important either, I'll pay more for availability!
Continue to have free or subsidized service until there is wider use and acceptance of this mode of transportation. Any fees should be introduced slowly in stages to allow greater acceptance. Waiting until people can be charged for actual energy - DC metering charge. Charging by the minute will cause many to use the service less as the variables associated with charging by the minute will cause mistrust with the system.
Costs should start low to increase utilization. Higher kW rates should cost more to reflect the convenience of faster charging. This also speeds charge times allowing a customer to leave sooner and makes the charger available for more patrons.
That is a difficult question to answer. The best way to increase utilization is to keep it free. However since cost recover is important I suggest charging the regular rate for peak hours of use and having lower rates for off peak hours.
please make this fair by charging how much electricity is used not how long for. Many cars take longer to charge but use less electricity. Make it fair for every EV owner:)
I think that you are competing on Cost, Supply, Service. You can reduce cost, Offer a good supply of chargers, and provide a reliable and safe service.
As a senior on a fixed income without access to a home charger, the free charging has been a God-send for me. The prospect of paying $6 for a 30 min session is MIND BLOWING. i WOULD NOT USE IT EXCEPT IN EXTREME EMERGENCY OR UNDER A TIME CRUNCH.
more advertising from BCHydro that these stations are being built for the future
We must have per-kWh rates. Otherwise there is no price transparency or any fairness between EV owners. Would you pay more or less for a restaurant meal depending on how long it took to arrive?

Encourage charging at home for those that can will free up space at fast charging users. At a minimum, charging from home must not incur Step 2 pricing. Fast charging stations need to be convenient; destinations and at rest stops.
Chargers are not used a lot in the evenings which affects their utilization. Some people only use them because they're free. Maybe make the cost more expensive during peak usage times, and free in the evenings? Allow those who NEED it to use it (and pay), and anyone who just wants free electricity can go off peak to increase utilization.
Having a timer on the units could be useful. If I want to charge for 30 mins only but return, say 3 minutes late, if the unit could turn itself off after the timer goes, and any person parked beside and waiting could start their own session.
Utilization is partly dependent on reliability. Building more redundancy into each location (i.e. - >3 or more stations on highway interconnects / remote locations) will help. Utilization will come with greater EV uptake, and BC Hydro should plan around managing availability, congestion, and access over utilization. Utilization is only important from a business perspective if revenues are high enough, or costs low enough - it is not a valuable metric in of itself. Providing low rates that maximize utility will increase congestion at stations, worsening the user experience. This will not help to achieve the higher-level goal of increased EV adoption.
The Fast Charging should has a time of use component. Charging during off hours should be a lower cost. For individuals who cannot charge at home there should be a subscription charge which would allow them to charge their vehicles at a lower cost than gasoline.
Better lighting, better maps, City Bylaw enforcement to prevent ICE vehicles from parking in EV charging spaces, weather shelters at EV charging spaces, more education on the environmental benefits of moving to EVs, lobby for Provincial and Federal subsidies to install home EV chargers, separate metering for home chargers to prevent home power usage rates being bumped to higher tiers
I don't understand the per minute charges. It not logical to me and that reduces my interest in the service. It discourages use when the battery is 50% full as the amount charged will be less than if I wait until the battery is extremely low. So it discourages doing small charges to top up to 80-90%. I also can't calculate what it is costing me to drive using your service versus another service that charges per kwh. The government should be subsidizing the service and focusing on charging the cost of electricity, and getting far more stations out, without worrying about costs, more like it is done in the USA.
Add Tesla-compatible chargers in areas where there are no Superchargers.
I don't feel charging a per minute rate is the way to go. I believe you can charge a per kWh rate (the covers electricity and capex), and then apply an idle (per min) fee (after a grace period of 5min) for non-consumption utilization of the charging station. For context I am not dependent on your charging service except when long-distance traveling. I use your service more out of convenience (again except for long-distance travel).
Promote the charging network though social media (Facebook, Twitter etc) and on customers hydro bills. Earned media through inviting BC-based car reviewers (YouTube could be good here) and traditional TV and print journalists to use/profile the network.
I'm an EV user of more than five years and I believe the system is working well and has materially improved with time. I fully expect rates for usage will creep higher with the cost of living and think it’s important to reward/recognize users for making the switch with a lower price threshold.... which we've had, but more and more people are making the changeover. Also, my decision to buy EV was about carbon and emissions is general and I was highly encouraged to do the right thing by family members.

My thought is I usually only charge with a fast charge when I am on the road. And I scan in with my Card. Then after I charge I get an email from BC Hydro on how much I charged. You should also take in the cost of how much an EV Car is too purchase and most finance their purchase ... All worth it, you want to get more people out if gas driven vehicles. The cost of charging has to be worth the time it takes to charge ... during colder months you need to charge more often depending how far you want to or need to travel. There needs to be more charges with proper lighting on all major highways... Between Merritt and Kamloops and between Kamloops and Salmon Arm and beyond. As well as along the Yellowhead Hwy. To the Alberta Border. And if you are on a Hwy. The cost should be free or very minimal. So you can have the freedom to drive your electronic car anywhere you would like. I have personally been able to drive my Bolt do to the no cost of charging or very little cost. With your card you have the Person's address where they originated from then when they check in to charge you know if they are on a road trip . They could be charged based on their Card usage. Some people do not have a Credit Card there needs to be a way for people to pay if this is their circumstance.
Convenient locations with amenities very close (parking lots of coffee shops would be great) so that people have something to do while charging. This may also help with installation costs as the shops would like to have extra traffic.
Have ways of limiting the amount of time someone can stay at a station. Maybe a reservation system or a digital queue. So us owners know when the charger is free and don’t need to keep constantly circling back or waiting in the car until someone is done charging.
Could you PLEASE put another BC Hydro fast charger in Duncan, BC. Or a few more? We only have one and it's always busy. Us locals give up the space to those passing through on the Island Highway who need to get back on the road (for the most part) but it's inconvenient.
BC Hydro needs to lobby to get per kWh rates approved. It should be no different than how a gas station works.
The most availability that is cost effective.
Yes, target specific populations, the young who will be buying first car, carshares, professional drivers, agencies, buyers, elders buying final car., those who drive high km.
Consideration should be made also on length of time hooked beyond fully charged to discourage staying in charging spot.
Perhaps you could provide flyers/handouts to new/used EV car dealers with a QR code to videos showing *how* to set up a charging account, and how to actually use the charger? I know someone (a mechanic) who plugged in (a borrowed Tesla with CHADEMO adapter) for an hour but didn't know the routine/requirements and ended up getting no charge in their car. They were subsequently bad-mouthing EVs to their customers. How-to videos probably would have helped. I know that I'm reluctant to lend my car to my kids in situations where they may need to charge en-route.
Emphasize the cost savings vs gasoline after each transaction via an email with a social sharing link. eg: Share with your social media followers: "I just filled my EV battery for $10 and have 400km of range! That's $10 tank of gas! Thanks @bchydro @powersmart @fastcharging"
Rates should really be based on KWH up to 80% SOC not time as various cars charge at different rates. We don't base electrical rates or fuel prices based on time. This should be no different. (eg: Hydro currently doesn't charge the same fee for 1 hour of electricity in a home if ALL appliances are running vs only running one 60 watt bulb in that same hour. I don't mind paying an increased fee based on KWH but would like to see the fee kept as low as possible based on time as so many factors affect the rate of charge (eg: 30 min on a fast charge in the winter IS NOT the same as 30 min in the Spring or Summer in terms of speed of charge).
more charging stations in each location. More of the highest speed chargers possible.
Agreed that the rates should recover electricity used, plus a small amount to recover infrastructure costs, but keeping in mind that you don't want to discourage the public from adopting EV's.

Price. If it is important for society to turn away from fossil fuel, then subsidize clean electric power and tax the status quo. Hard. BC Hydro needs to be able to charge the price required to make the Fast Chargers profitable - For BC Hydro! Otherwise it is a disincentive for BC Hydro to install them. This approach is suggested for a government who wants to see this social change and work with market forces: What price does BC Hydro need to charge? Maybe $0.35/KWh? What is the price that would still entice a significant steady shift to EVs? maybe $0.15/KWh? Then Government needs to look after that difference. At least for a while until the market catches up. My 2018 Chevy Bolt charges at an average rate of 0.44KWh/min, or 2.31min/KWh. At $0.20/min, it would cost $8.88/100km (going by an average of 19.2KWh/100km over the last 7500km) $8.88/100km in charge cost alone is not an incentive to switch to EVs, and that is at the lowest range of BC Hydro's acceptability. At higher rates I would feel taken advantage of. I've had the desire several times to get rid of my EV because of incomprehensibly high chare rates at fast charge stations.
30 - 45 min charging limit lock out that only triggers when someone logs into a queue otherwise no time limits
Keep it as inexpensive as possible - that will help increase the usage.
If possible, charge by the actual KWh used instead of by time. Temperature, battery conditions, and other factors greatly affect the KWh used. I tend to avoid time-based charging as it is often unfairly high compared to charging at home (where I pay by actual useage).
Please have stand alone fast chargers. It is very frustrating to have to wait for people to finish using the slow chargers because you can only use one charger at a time. When travelling this makes a huge impact on time travelled. For island travel I have to add anywhere from 2-5 hours of time to accommodate waiting for slow charging to finish, making for a long and unpredictable trip.
I would like more fast charging stations in the Victoria/Langford area where I live. Thank you.
Price and site selection are the keys to utilization. You should explain why you chose a site with as little utilization as 3% (i.e. only used 40 minutes per day). Was this a mistake? Will it be relocated?
I find the Flo chargers to be really inferior to that of PetroCanada. While the lack of payment actually makes it a much smoother start than that of the Alberta installed ones, the installed solution is truly too reliant on a network connection. The Alberta system via ChargePoint or Flo is not great. ChargePoint supports for example an AppleWallet nfc card… but since it isn't natively supported by Flo, it doesn't work. Instead you have to open the app, navigate to your location, avoid clicking the L2 charger on the map, and then start a rapid charging session… The issue both networks face is issues when no network connection can be made to the app. In short, to encourage usage, it needs to have an easier option: credit card tap to pay. We have a Flo charger and Petro Canada charger on the north side of our city (Calgary), my wife always calls for support if she needs to DCFC. I refuse to send her to the flo station as the instructions I feel I would need to give her are unreasonable and confusing. If nothing else, just accept tap to pay from credit cards on site.
also encourage home owners to use their charger at low usage times by charging lower rates during these times, and offer incentives for installing home charging stations
I have to say I strongly have to say that these chargers should be free. I use BC Hydro as my home utility company so feel that I have helped pay for it already. If the system needs to pay for itself I would support raising the rates for residential home use to pay for it. The Transition to EV has to happen faster than the current rate to avoid drastic climate change and keeping the chargers Free will help. I would also encourage BC Hydro to look into DC Bidirectional chargers for providing Grid Stabilization and Emergency Power from CHADEMO Electric Cars. The Nissan Leaf was used after the Tsunami in Japan to deliver power to areas that had lost it. I would talk to companies like Wallbox for example to get more info. The chargers are already over utilized on Vancouver island where I travel most. Some charging stations should be doubled in capacity. Especially Qualicum foods and Courteney need expanding.
More locations
tailor the charging to the best rate to ensure minimal damage to the battery.
Hopefully no car will have to wait in line to charge
More Level 2 stations as many more used EVs that cannot use Level 3!
We need per KWh pricing, not per minute. Per minute is a rip off or a huge bonus depending on your vehicle and battery temp. Per KWh is way for fair and transparent for people to understand.

Charging cost should be charged based on KW instead of time. Payless for charging under 80%. Prevents those that stay plugged in. Charge even more $$ if you stay plugged in after charging to 100%.
They need to be accessible. There are hardly any on Vancouver island, especially in more rural areas. I understand that they ate going to be more coming, but to start charging for a service that is quite inconvenient to get to is not the best way to go about doing it. I live in Sooke, and the closest fast charger is in Langford not very convenient if you ask me. The next closest is in Downton Victoria, or Port Renfrew. Again, neither are very accessible. On top of that, they are in piss poor locations. Why would they not be at malls or other locations with services? The Langford one for example has a Wendy's and Tim Horton's close by, other than that there is really nothing to do. No bathrooms unless you go to the fact food store, no vending machines, nothing to make it a service that should have much of a cost to it.
Keep them free of charge
This should be a loss leader for the next 5 years. Range anxiety is a big issue for EV uptake. Being able to say "there's free charger's everywhere" makes people more likely to buy. More EVs will make BC Hydro a TON more money than a few cents per minute.
Increase CHAdeMO connectors on sites, as this has become the standard outside of Tesla.
The lots that host the fast chargers should subsidize the cost of usage for EV owners such as free parking for consumers who park while shopping at whole foods
The cost for charging close to the urban areas should be more than the rural areas. This would encourage people to start looking into purchasing EV cars & SUVs. I think installing more DC charging along the and near Highways. When the start of the Model T Fords there was hardly any hard payment roads and to get more ice on the new roads is to build the hard surface roads thus the rapid increase of cars which left the auto makers to make more cars. Bite the bullet and build more DC stations but not too try and recoup the money quickly but a steady lower rate. Volume of chargers is the way to get a better financial payback.
Not free, but a recovery cost over the period of expected warrantee
Consider: If I have to charge at a 25KWH station, I will have to stay there for over an hour. If I charge at a 150 KWH station, I am gone in 20 minutes. People driving gas vehicles will not want to switch to EV if they have to spend 4 times longer to fill their vehicle.
Have hybrid charge rate as found in many US private sector charging system providers. ie a simple rate for 80% charge then a very high time charge for those lingering until they have achieved 80% charge. This promotes more effective and efficient utilization of your available chargers.
Consistency. I was unable to use the BC Hydro charger in Princeton, because the activation method differed from the activation method of other BC Hydro chargers elsewhere on my trip.
Install multiple DC fast chargers. Like a Tesla Supercharger network. They have multiple stalls with fixed rates if one stall is used per minute, and costs are halved if 2 stalls back to back are used which lowers KWs going to a specific car. With BC Hydro's current setup, if a DC fast charger is used, only one vehicle can use it. By having multiple stations, preferably 7-10 next to one another, you will have less congestion for users waiting on the DC fast chargers in the areas where they are implemented. I as a Tesla owner would have more reasons to now consider using and paying for BC Hydro DC fast chargers if that is the case because if I want to pay for fast charging, my time has become more important that I would be willing to pay for a fast charging
Dependability and ease of use is critical. Too often stations are down. Also, it would be great if we didn't need to have multiple apps to gain access. I own two EVs but I don't feel my refueling should be overly subsidized. Just charge me fair value for the electricity I consume. This will eliminate push back from the public that feels EV owners are getting a free ride.
Tie our card / app to our B.C. Hydro account and give a discount to British Columbians using the service. Recoup network / electric costs in part with higher rates for those from out of province.
I think it is important to encourage EV ownership at this time - but also recover the cost of electric power. I only use \Hydro chargers when traveling - and increased cost will discourage me from traveling in my electric vehicle.. and discourage tourism in BC!
If we really want to improve the environment we as a society need to invest and subsidize electric vehicle usage. I think it is fair to recover the cost of the electricity but the infrastructure should be expected to be subsidized by society as a whole.

You could charge on the alternating current usage on the feeder side as a kwh charge. It would not be an exact correlation to the DC delivery but would be a more " fair" charge for usage of the service, as opposed to time based billing. This might also avoid certification of a DC meter for kwh billing. People understand that there are some kwh lost due to the conversion of ac to DC, just as there are kwh lost from the charger station to the cars battery pack. Also it would be nice to have an j1772 charger station available at the same location,.
The time connected should at least be 1 hour
When I answered the question rates should be the same for all power levels, what I want to make clear is that the rates should be the same when billed by KW delivered and not by the time it takes to deliver the power. I believe in some US states including California, chargers are billing by KW and not by the minute. It's the same when buying gas or diesel, you are billed by how many liters you buy not how long it takes to deliver the gas or diesel. This is an important distinction especially in BC when the time it takes to deliver power takes longer in the winter than it does in the summer especially when it comes to 100 kw/hour chargers. Billing by the KW makes the most sense as it covers all powers levels of chargers with one rate. Thank you for opportunity to participate in your survey.
Not sure if I this is covered later or if I get to make notes later so..... rates should be by the kWh not by the minute. A slower charger is going to cost me more to get the same charge making it not fiscally responsible for the consumer to utilize the service
I don’t think there should be any charge. Most people do most of their charging at home and are paying for their power already. BC hydro shouldn’t be charging anything for public charging. We and they are trying to do our part to save our environment.
Start charging by KWH consumption and start increasing rate after one hour to encourage moving on.
Advertisement & really low or free rates
1) Work with the city and promote green living by asking all residential and commercial buildings to start offering electrical vehicle charging at the buildings. Currently many people who live in apartments/condominiums are not allowed to charge at their buildings. 2) Offer more charging stations so the wait time is not so long. 3) Limit charging time at all charging stations to speed up the lines. 4) Charging stations should be as accessible as gas stations.
Government subsidies that are currently given to unenvironmental industries like oil and gas should be made available to more environmentally friendly energy systems like renewable electricity.
It seems with public chargers, there is a amount of time at the beginning where the charger and vehicle negotiate the appropriate (and available) charging rate. Including say the first 5 minutes (while this is occurring) at no charge would help offset this.
Place in high traffic areas, close to amenities, convenient locations along highways.
cost should be based on energy used, not time.
Higher peak hours cost (conversely, discounted off-peak hours)
Add usage to home hydro bill and rate should be same as the rate fir home use hydro !
Keeping the price low and having more than one charge station at every location.
Include a flier either online or when a bill is files with the consumer
More marketing
The rates shouldn’t be based on time, but based on KW used to charge the car, with a max charging at fast charging of 40 minutes. To enforce this, the chargers should automatically turn off. It would be great if BC hydro explained the breakdown of price on the chargers to mitigate changes in the system. Also - is there a public funds reporting? This way EV users can see where the money is going and have a voice on upcoming expansions and projects.

BCH should focus on providing power in an efficient and cost effective manner. Implementing lower rates to encourage EV adoption, while an admirable public policy goal, should not be done if all ratepayers (the vast majority of whom do not own nor operate EVs) have to subsidize these lower EV rates. Lower income ratepayers will be unfairly penalized by this form of cost transference. If BC Gov't wants to encourage EV use, as part of an overall carbon reduction strategy, then it should fund this policy with money received through taxation, which is much less regressive than hydro rates. BC Gov't should subsidize BCH with General Revenue funds. If BCH wants to encourage EV usage to expand electrical need and thereby increase future revenues, then like non-public sector companies using loss leader strategies to increase future product/service demand, the costs associated with upfront losses should be capitalized and recovered through those future revenues, not from existing ratepayers. The current retail gasoline market is a badly flawed oligopoly that needs to be replaced. BCH has a chance to develop an EV charging process that is transparent, fair, and encourages free market competition. I'm concerned that the current proposal will not achieve this. EV owner since 2014
Have the phone apps activate the charging stations and make the price - slightly above home charging costs.
Institute a time limit, or preferably a charge level limit, for any one session. I.e. charge ceases at 80%, regardless of time
I think we need to continue pushing/selling the idea of EV's as many people can't see the value of electric vehicles.
Reward Points system so customers accumulate enough points and rewarded a free charge say
1) Rate is the most significant factor. 2) Location and availability; need multiple charging stations at each location. 3)Variable time-based rates can be developed to deter excessive (to 100%) charging unless vitally important. 4) Peak-use hours and off-peak charging may need price adjustments to encourage broader hours of utilization. 5) Small battery capacity EVs already are effectively penalized by less efficient charging rates as battery capacity is reached. 6) Some way to separate local traffic and through travelling highway traffic. Discourage local EVs at some stations, prioritize highway traffic at others. 7) Amenities and services (especially internet/WiFi) adjacent to stations, especially for through traffic; eg Fishtrap Canyon has rudimentary toilets and this should be the VERY minimum standard! 8) Variety of payment options; Charge to home BCHydro account is my preference, Credit card, RFID account card, Internet/smartphone to established account.
When establishing a rate BC Hydro needs to pay for the cost of the electricity consumed and the public needs to understand that they will charge their vehicle FIVE TIMES faster if they use a BC Hydro level 3 dc quick charger than their level 2 home charger. A level 2 home charger delivers 6 kilowatts of energy per hour and provides my car with 32 kilometers additional range at a cost of $1.00 per hour using step 2 electricity cost of approximately 15 cents per kilowatt. A BC Hydro Level 3 DC Quick Charger provides my car with 41 kilowatts of energy in an hour and gives me an additional 160 kilometers range in that hour and if we assume the commercial cost is 12 cents per kilowatt then that costs BC Hydro $5.00 per hour. I receive 5 times the range in that hour from a BC Hydro level 3 DC Quick Charger and the rate that BC Hydro probably charges for the electricity to commercial customer covers the energy cost. This does not cover the cost of the equipment installation or maintenance. So 20 cents per minute or $12.00 per hour will contribute to guaranteeing that the Level 3 DC Quick Chargers will be available when i need them. I would also suggest that pricing could also be adjusted to double the per minute charge to 40 cents per minute once the charging equipment registers that the vehicle plugged in has reached a full charge encouraging the vehicle owner to move the vehicle quickly.
Utilization should reflect the lowest possible cost as the goal is to have greener energy usage, an incentive to leave gas
Need more outlets for each charging station. I have a Kia Soul EV, my daughter has a Tesla Model S. She goes into a Tesla charging station and there are 8 outlets.
the focus should be on building fast charge stations. the number 1 reason people don’t buy EV vehicles is they state it takes too long to charge and they can’t go on road trips. effort needs to be made to make charging fast, and if that costs a bit more for the user. it would be fine, still a great savings to gas vehicles.

The issue with varying rates for 25 and 100 respectively is the availability of such stations. A few stations (with 50 in relatively close proximity) would result in the 25 and 100 not being used thus wasting resources. In my mind, the 25 stations are a waste of time. The efficiency of charging for a 1/2 hour or hour makes stopping hard to justify. Emergencies only I guess. As for the 100, again, I fail to see the advantage. Why not install all 50s at this time?
There have to be incentives to have people buy and use EV vehicles. BC has said that in the near further we will only have EV cars so we need far more charger and ones that can allow vehicles to travel across the province
It should remain free or at least cheaper than Tesla chargers.
Keep the rates as low as possible but more than 'at home' to ensure the chargers remain available and are not used as parking spots. Implement maximum parking time, maybe longer for 25kW chargers and shorter for 100kW.
Until the utilization rate is greater than 50% BCH should not attempt cost recovery, but rather apply for exemption using fossil fuel incentives/funding to develop this infrastructure. Also, BCH has a significant customer-facing learning curve with EVSE - the quality of customer experience will affect utilization and this needs to be costed and supported.
if it's not possible to charge by kWh, at least have a 2 tier per minute charge. ie less than 20c/min for cars where the charging rate ramps down from 50kW to less than 10, and 25c/min for cars that can charge at a sustained rate of 50 kW
After 30 minutes the rate should increase if another customer is waiting. Alerts by text message could be used
Identify popular routes and place fast changing stations in such a way as to make longer trips doable with EV's of modest range. Example of Hwy 19 north of Campbell River.
By using time as the measurement of payment, you are punishing those with the most environmentally friendly cars, the small battery used EV's. An i3 for example has a 15kw/h battery, and because of that it will go 80km on a 20 min charge. That would only be 11kw/h charged, whereas a new Tesla p100 would be able to go 250-300km on that 20min charge, making it much less expensive for them. At the rate of 20 cents a minute I am looking at comparable costs to just putting gasoline in my range extender and operating it as a gas car, AND I wouldn't have to wait for charges, fuel ups take maybe 2 minutes.
Set the charge limit to 80% so cars will not camp. or charge a much higher rate if you go over 80%. setup a reservation system
Keep the costs as low as possible and put a minimum of two chargers at each location. Place units on all major highways including the north of BC so people can use their electric cars to explore all of BC.
More multiple charger sites. Tesla sites have many chargers so one can be assured of faster charging without a wait. Siting near other facilities such as wifi, cafes, restrooms etc. Keeping charging costs low. Increased kw so charge time and wait times are lessened. More strategic locations along travel routes. Fill in on the secondary travel routes.
Linking the app directly to one's existing BC Hydro account and making it as easy if not easier than pumping up a car with gas would be better. Allowing for a UI other than the clunky app in case your phone is dead / not with you would be great as well.
Location is key as well as the number of chargers at the location. Develop destinations for charging where people can expect a fast charge with little or no wait for a charger
As an EV owner I worry that the rate will increase annually to the point where it is not cost effective to own an EV. I believe those of us that have committed to driving electric should receive some kind of a discount on our Hydro bill. I charge mostly at home but cannot install a home charger.
Increasing the utilization is a two sided question. As utilization increases, the line ups at the stations increase in time and number of vehicles. It's not just a wait time, its a wait at your car time so it is dead time to the end user. This is a big detraction. I think that a special rate equal to home cost should be made available for renters who do not have access to a power outlet and are near to their home. I think a special rate for people in owned condos should be higher than a renter's rate but have the same qualifications. Thus, I think an RFIF card could be developed that is much smarter.

If BC Hydro charging stations start charging and they aren't a lot cheaper than other charging stations I will go to the other charging stations. I like their locations a lot better for example Petro Canada charging stations.
There should be significantly more charging stations, comparable in amount to regular gas stations. Both outlets should be working simultaneously.
I feel at this point with such low EV adoption, increasing EV uptake and charger utilization is far more important.
Please offer lower rates for people for home chargers and off time rates, so less load on the fast charging stations. Remove step 2 rates for the home EV charging people.
Since all PHEV and many early EV cannot charge at 50 or even 25Kw - the rate should reflect that mix. You are doing all your calculations basic on the theory max charging level. What has your testing time show is the actual avg charge rate? The charging also slows down as the battery charge increases. If you are going to go for a cost recovery - it should be based on actual costs, not the theory of the costs.
better signage, display costs online and on signs so people can decide if they want this charger or another.
Ensure all are included on PlugShare; Make the facilities as visible as practical (e.g. signage, standard appearance); provide and maintain enough outlets to avoid people finding the units unavailable.
Put card readers on the charging stations so people can use credit and debit cards to pay just like at a gas pump Cost should be based on the electricity delivered as soon as "measurements Canada" approves a device. The USA charging stations bill for electricity delivered and only charge for time spent if car remains plugged in after a grace period at the end of charging
Clear highway signs and advertising on where stations are located, as in many cases they are difficult to locate even with the app.
More outlets per station, to reduce line ups. Ensure that there are stations on all major highways. Keep rates free or low until a much larger percentage of vehicles are EV. Encourage municipalities to fine ICE vehicles that block chargers or use EV parking spots. Allow users with BC Hydro home accounts to have their away-from-home charging as an item on their regular bill. Drop the $15 fee for RFID cards, especially if/when the charging itself is no longer free.
The charge should reflect the same cost as you would pay at home. The fast chargers are a convenience when you are traveling or away from home
From my experience utilization of chargers in Vancouver city is already very high. However, if you would like to increase utilization in rural areas (e.g. BC interior) you'd better to support tesla connector since CHAdeMO adapter is very expensive, limited to 50kw and is not supported by any EV manufacturers any more (Nissan leaf is the last one to use it, Nissan switches to ccs for future models). And tesla represents >60% of the EV market.
When I have used BCHydro fast chargers, they are almost always in use, so the utilization seems to be high already.
Make charging stations convenient to use in locations, like park and rides, that promote other forms of transport.
Ensure that the fast chargers are accurately updated on apps like PlugShare or other network, and identify low-usage periods by hour of the week, where the app could direct EV users looking for a charge to come at a less busy time, instead of simply heading out hoping it's available when they get there.
We are buying energy or distance travelled and not time. If you want to make the best use of your chargers then add penalties for people who leave their cars connected when charging is complete.
1. Place EVSEs adjacent to amenities useful to travelling EV users (e.g. restrooms, restaurants, vehicle services) 2. Advertise EVSE locations by using road signs, EV user groups, etc. 3. Make EVSEs easier to use (e.g. credit cards, sheltered parking, simple instructions, ready access to help)

I think it is important to have more DC fast chargers spread out throughout all of Vancouver Island. Where the usage is more, like at Collwood Exchange on Vancouver Island, at least one additional fast charger should be considered. I think where there is the opportunity to build more than one at a popular destination, then more than one should be built; think Tesla supercharger network. I also think that there should be a discount for those who use it more frequently. All in all I am pretty satisfied with the network so far. Would love to see a key fob with NFC that works with all chargers on network, this would simplify and enrich the charge experience! Thank you.

Ensure availability: multiple chargers, aggressive maintenance, incentivize short hook ups, real time web updates on availability, multiple charging options on major routes. Improve charging experience: easy to locate, good lighting, safe venue, co-located with other services (eg gas station, coffee shops, restaurants, place of interest, etc) Ensure pricing value: must be cheaper than gas to keep people buying and using EVs for longer trips away from home charger

Provide free charging for first year of EV ownership. Provide squeegees at stations so that one can clean windshields.

It seems to me the vast majority of EV's are Teslas. However, without a Chademo adaptor, Teslas are unable to utilize BC Hydro chargers. Not sure but get the ability to add a Tesla connection to your chargers at least add a J1772 connection. All Teslas come with a J1772 adaptor

There needs to be continuing financial incentives to encourage EV purchases in BC The rebates only return a portion of the GST and PST on a purchase price well above that of a ICE vehicle. If you are going to charge for using your stations, that charge needs to reflect a substantial saving in cost per km driven compared to gas vehicles.

I think you will increase utilization by keeping it free. I would however have a limit on the time a vehicle can be on the charger, 60 minutes, at that point the charger cuts off and if the vehicle is not removed from the charger a idle rate applies. This will increase usage by more people and keep the network available for the most number of users

I have only used one that is close to where I live and work. It is a double connecting fast charger fairly recently replaces and quite reliable. There is a third space to queue up off the travel lane and it can minimize jockeying to a large extent if those ahead of you park judiciously. The City limits usage to 40 minutes and I can charge up the SOUL EV in less than that. 1 time in 20 someone might stay too long or abandon their car to have a coffee but that isn't BC Hydro's fault and the line seems to move well.

Well it’s a time of transition - and some vehicles, like my Chevy Volt, is limited due to the internal inverter, which means it takes a long time to charge a relatively small battery. For example, my Chevy Volt has an 18Kwh battery pack that takes a minimum of 4.5 hours to charge (due to a 3300 Watt inverter limitation). If I get charged $7.5/30 mins, I will charge for 4.5 hours with a cost of $67.50 ($7.5 x 9 (9; 30 min segments to get to 4.5 hours)). Alternatively I could buy approx two tanks of gas (30 litre tank) for $67.50. So even $7.5 / 30 mins of charging is not economical for me, and so I will never use the chargers. This might be the same issue for other EVs. My preference would be to pay for energy used, but I’m sure you don’t want my Volt tying up assets for 4.5 hours, so perhaps it’s a good strategic move. I still like what you are doing and support you because at least you are making changes and adding infrastructure. One last comment is I wish there was a greater push to ensure that condo developers follow building codes to ensure tenants have access to electricity. For example. I looked at the North Vancouver building codes and it’s in the Code that each stall should have access to an electrical plug. However, in my recent search for a condo, even new builds do not provide access to plugs (in the underground parkades). Without a greater push in building codes the move to electrification will be a difficult one for all of us.

Make it cheaper, make barrier free to use (accessible without RFID card). Once EV adoption rates are above 50% then crank the rates.

Make it look more like residential billing accounts. Two tier rate, one for actual power (KWh) consumed (subject to Weights and Measures approval), the other a time on charge (demand) rate.

Put them where ppl will spend 30-60mins or longer while doing other things. Partner with trans Canada to put them at rest stops.

More road signage to publicly available charging stations. Possibly looking at a fast charger that’s capped at 10 minutes of usage per user each hour (or other specific time limit) for people who need a quick boost and can head on their way instead of waiting for a vehicle to get a full charge. Better integration of mobile apps for fast chargers - as an EV owner I have approximately 7 different apps all storing my credit card information to charge due to the multitude of different companies.

Charging rates represent only one factor. BC Hydro rates should generally reflect market rates and the incentives for using BCH chargers should be the same as for other systems, notably: accessibility (i.e., universal access) and ease of access, security, proximity to major routes and towns, amenities, reliability of stations, and help lines or on-site help for station oversight and customer problems.
Maintain your chargers better and have more stations at each location. Britton Creek chargers were broken for month before the recent upgrade. That's a critical location along that route. Imagine all gas stations in Merritt were broken for 2 months? Right now, about 90% of the time, BC Hydro charging stations are either broken or occupied. Charging fees for use should reduce usage in the short term, but demand will far outstrip supply even with a fee. Right now, it's terrible that most locations have only 1 high speed charging station. Tesla has up to 22 high speed stations at some of it's Vancouver locations. That is an infrastructure capable of meeting EV demand. 1 station at a location does not even meet current demand (by a long shot). You should also have some chargers that are faster than 50kW.... because 50kW is actually about 40 kW and requires more time to charge. Petro Canada chargers can put energy into our Bolt at a 53kW rate. Meaning I spend less time charging and others will have more access to the chargers there.
The roll out of charging stations across the province has been good. This needs to continue. Use at key stations should be monitored to see if there is a need for more stations at particular geolocations. The one at the Coquihalla Summit being a good example of a need to increase availability due to energy requirements for that particular stretch of highway.
1. 100 kW chargers will be a big improvement. These should be rolled out asap. There is still a need for faster chargers, however, as it doesn't take an engineer to realize that as society electrifies cars will be able to charge at ever faster rates. Keep up with Tesla. 2. The questions on this survey are misleading. "Should BCH charge the same for 50 kW and 100 kW chargers" means different things if the charge is per kW-hour. If you do the sensible thing and charge for energy provided, then the speed of the charger doesn't matter. Of course, the convenience of faster charging means everyone will try to use the faster chargers, so perhaps a discount for the slower ones, which also encourages uptake without cutting so much into cost recovery? 3. We are very close to an EV tipping point, at which EV sales will outpace ICE sales and then accelerate. Car manufacturers will stop selling ICE cars before legislative bans come into force. It is essential that BCH continue to build out and augment its network to stay ahead of this _accelerating_ curve.
Hydro working with Cities and municipalities in ticketing vehicles who are abusing parking violations and or time of charge
Charge by kWh, not by the minute plus the cost to cover maintenance and other fees. Charging speed is defined by different factors: ambient air temperature, battery temperature, battery status, etc.
the more affordable it is, the more it will be used. implement idle charging fees
Insure good physical access to the stations.
Keep increasing the number of stations away from the major centres so people will be able to travel longer distances in their electric cars
Limit actual time in the space to a max. Of 30 minutes.
Better signage above stations, and better signage around sites (e.g. from parking lot entrances to the actual charger). Locations near amenities.
There is a wide variety of capabilities in EV charging. A car that can only take 25kw would essentially subsidize the car that can take 100kw. As its likely that the car with 100 is probably a much higher end car that seems unreasonable.
Keep the rate above what the domestic cost of electricity is but lower than what Petro Canada or other commercial sellers charge
I feel if we keep costs of energy low we will be better positioned to have the masses adopt ev cars and thus increase users to keep costs lower. It is a cost that will pay off in the future
All Teslas to use the chargers by providing an adapter. Its a pain seeing this everywhere but the most popular EV cant even use them
Ideally, both kWh and time would be factors in determining cost. I understand that metering DC charging is a matter currently before federal regulators.

Make it easier to begin charging please. It takes me a few minutes to figure it out every time! Also some charging stations are locked and not available and there's no indication until I arrived at the station. Please show the charging station clearly on the app.
Rates should be reasonable and include idling fees (ie. for DCFC charging time over 40 minutes) to encourage quicker turnovers.
25 & 50kWh chargers are obsolete, with the exception of urban areas where cars are parked for long periods of time. Highway and motorway minimum should be 100kWh. Providing higher speed chargers will support adoption and promote usage. But like a gas pump, you should be charging for energy purchased, not time spent delivering energy. Saying that is not possible is a lie - because it is currently being measured at the charge stations. So...honesty will promote usage.
Have multi fast chargers at charging locations
Yes - a nice detailed mail out along with the Hydro Bill to all BC hydro-users in BC. I would also recommend that there be some type of a rebate system for recommending other users who are signing up for BC hydro-EV cards.
I would like to express my thoughts on being charged for electricity for my EV. My hydro rated at home increase as I now charge two cars at home daily so this bumps me over the lower tier cost for home electric rates. This is unfair. Do we not want to be green abs have the cleanest greenest north American region. Why penalize us who are leading that charge. Now we have to pay at charge at the province's charging stations. A double whammy. Why don't you just charge a further gasoline tax to incentivize they transition. Surely you and your cohorts in Victoria can see how that would been fit society as a whole. It would be like wearing a mask for the greater good. My two cents
You need to focus on a charging structure that discourages longer stays than needed - perhaps also encouraging local amenities (who may perhaps sponsor the charger costs) to keep users local during charging. Alert them via text or e-mail as charging nears completion so they can be ready to unplug and move on. Encourage users to go for 80% top-up rather than sitting for another 30 mins to add that last bit - slowly. Perhaps charging for time based on the peak kW delivered. Also look at designing chargers that will support 2-bays - moving from charging car #1 to charging car #2 when car #1 charging is complete (80%). That way the 'dwell period' with an unused charger waiting for the car to be moved will be eliminated.
Free for another 2 years. Currently it is already way more expensive to buy an EV so if charging is not free, I will probably move back to gas. We have to drive in ugly cars, more expensive, less autonomy, cold inside in winter, live with range anxiety so if free charging is not there, there is no point for this suffering.
There is an inherent conflict between a public utility seeking to establish rates to recover capital and operating costs and a government seeking to combat climate change with encouraging a shift from ICE vehicles to EV vehicles. This rate setting process attempts to do both with some attempt to encourage EV usage. In my view it would be clearer if BC Hydro sought specific government funding to pay for some or all of these costs and then set rates to recover the rest of the costs.
The Rates NEED to be per KWH not per minute. Charging per min is WRONG and should be illegal. At a DC fast charger their should be a time limit and once the car is over the time limit the price should be per minute and cost a LOT per minute to encourage people to share the chargers. Use the overage fees to help cover the costs of the stations.
After listening to the webinar on Monday, Dec 7th, 2020, my feedback follows ; BC Hydro should be able to build more fast-charging stations across BC, such as between cities, communities, towns. In the Coquitlam area; 2 stations at Superstore, and sometimes those 2 stations are in use. There are more EVs on the street of GVRD, and we do not have enough charging stations. I was traveling to Indonesia, Singapore, and the EU from 2017 to 2019. I was very surprised by how much fast charging they have within a radius of 50 km. In Indonesia's big cities, they installed a fast-charging station in the enclosed or outdoor parking lot at least 6 stations with 2 different outlets, and almost every gas station within the cities has 1 regular charging, 1 fast charging. Singapore has double the amount of people who has EV cars per capita. France, Germany, Switzerland, Austria has many charging stations within the cities, autobahn. Yes, my Flo membership worked in the EU. They charged me between 3.5 to 5 Euro per 30 minutes to 1 hour. Hope my feedback is helpful for BC Hydro to move forward with the plan. Thank you
Have more charging stations. Encourage car dealerships to inform new EV customers about where and how to charge publicly.

Each location seems to require different methods to make it work. Making them all the same would be very helpful. Placing the chargers in well-lite and public places would make access after dark more secure. Being able to book charging sessions so you could plan a long distance trip would be very helpful (although likely impractical given how rude some people are at the chargers.)
High rate day time peak hours Lowest rate night time lowest use hours
Have more stations where there is more use.
The overall gas and oil subsidy should be renamed to Energy Subsidy with categories of energy types of renewable and non-renewable. The subsidy, regardless of programs the subsidy is given under, should be apportioned based on the % of EV vehicles in BC vs % of non-EV in BC. For example, if EVs accounts for 10% of registered vehicles in BC vehicles, the % of subsidies provided should be 10%. Additionally, the same % of EV s registered in BC should be diverted to environmental recovery funding. In this way, adoption of EVs is increasingly rewarded by the offsetting of additional cost of EV adoption, and the environmental recovery is funded providing the funds necessary for the environmental cleanup efforts we all need. Also, this will act as the back charging of the environmental pollution costs to BC the oil and gas industry generates. We are Canada's leader in EV adoptions. Let's take an even cleaner leadership stake in our environment.
More fast charger stations, at a particular location. The fear of having to wait if a single other user is charger is discouraging
I understand that at this time you cannot charge by KWH and must charge by time. This generally makes the actual amount of power a driver gets in direct relation to how big the battery is and fast the car can accept it. In simple terms the more expensive the car the cheaper the power. This disincentivizes a whole class of vehicles, like probably the most successful EV the Nissan Leaf or any of the plug in hybrids like the Chev Volt. To really improve utilization you will need to eventually move to a per KWH rate. Hopefully you will continue to work with Measurement Canada and possibly consider making the switch even before the three year first phase is completed.
The use of a fast charger should only be used when travelling or when home charging isn't available. Keep pricing moderate to encourage use by all.
Increased locations and 24 hour access.
Keep the cost similar to that of home charging (ie 0.12 per kWh or equivalent per minute charge). Also, make the charging process less inconvenient regarding waiting for others to finish charge. People will not use the chargers if they drive there only to find a wait for using them. To solve this: -Have accurate status of station availability (including how long wait is for charger). -maybe a waitlist or reservation queue? More chargers per station.
I hope that you will be able to charge based on the kilowatts drawn within the next 3-5 years. I consider this a more fair way to charge for usage. I realize that there will have to be a premium added to pay for infrastructure. Right now people pay $2-$2.50 for parking at some charging stations, so there is a willingness to pay for the service.
Utilization will increase will electric car purchases. The other questions are do you want to discourage home usage or other providers of charging services. I have a home charger but know of others who don't. Any of the rates you are proposing would not demand an investment in home charging.
prevent users from leaving their vehicles on the charger, blocking others from using the charger. Possibly hiking the rates drastically if they leave it on the charger past a certain amount of time
A lot of people think that being charged money to charge is not fair I totally agree with it. Although I love free. I only use fast chargers to get enough to get to my destination, not for daily use.
don't make public charging too expensive compared to home charging, i.e. worst case rate at home is 0.14 per kWh. Much more is not encouraging to utilization increase
Keep price lower than competitors. Having a discounted price during off-peak hours might increase utilization. .20 to .25 per minute is a good start while car buyers consider changing to an EV. More EVs on the road will increase utilization.
Limit the amount of time a vehicle may charge. Many charge stations have certain vehicle models parked for extended periods of time limiting accessibility. After a predetermined time period or if the vehicle charge stops, a maintenance charge is applied to the account so as to help free up the charger.

Certainly free charging would be the fastest way
Make them more accessible and by this I mean both more reliable and enough of them that you never need to wait more than 5 minutes for an available charger.
Should be free to encourage ev use, as marginal cost of electricity is negligible. If have to wait 30mins to charge, I might as well use gas. The overall cost to provide free fast charging against savings in health care and environmental damage is worth it.
Suggest the first 30 mins be free for the 50Kwh which is inline with your competitions
Provide cheaper off peak rates, e.g. at night. Charge idle fees when charging is complete or when delivered power falls to L2 charge rates like 6kW
Can't BC Hydro charge based on metered electricity actually delivered to the vehicle? This would be an easy to understand equivalent of $/litre. Given that charge rates vary between vehicles, state of charge, and even temperature, I think charging per minute is problematic and inequitable, especially to EV drivers in older cars. [If the goal is to limit the amount of time someone stays at a charger, this could handled differently (e.g. session cut offs).]
same pricing model across entire network so drivers will use stations that are close instead of hunting for the best deal.
I strongly recommend to provide this service for free since it will encourage to buy more people electric car to keep clean environment.
A per kilowatt charge is the only way that a fee makes sense, then the fee for the electricity can be accounted for separately from the cost recovery portion. Also this allows the users to be clear about the amount of electricity purchased and easily used to calculate additional range added.
There should be an incentive for BC Hydro customers to charge at BC Hydro charging stations
The fact that a per-kwh pricing structure is what was "overwhelmingly preferred" but isn't being considered because there's apparently no approved metric for measuring that is absurd. I pay for my household electricity by the kwh. Why should my car be any different? That's beyond stupid.
Address home charging costs. EV owners that charge at home should be allowed to stay on level 1 kw charge. This would give smother incentive for purchase EVs
Faster is always more expensive...
Charging per minute disadvantages those with slower charging vehicles. Recommend charging per kWh delivered, perhaps with different rates for faster delivery.
The priority should be encouraging EV adoption and use. It should not be "recovering costs". Look for political direction in this regard and do not proceed on the basis that money should be charged at this point in time.
Locations that are attractive, where folks can spend 20-40 min to eat, shop, tour etc. Locations in major transit centers out the east side of the city. Also to incentivize folks to move towards and EV purchase, that have longer commutes into Vancouver, that can charge along Hwy 1 near major overpasses.
More chargers at each site to allow less uncertainty about how long a charging stop will take. Wider distribution of chargers. Ideally there would be a fast charger every 200 km on every major highway in B.C. This would reduce “where will I charge” anxiety when travelling to more remote parts of BC
Add a high idle cost to ensure that people do not continue to use a charger after they are charged.
Keep the rates low until utilization rates have increased to a sustainable level.
Reduce prices at non peak hours? Never make them free - they should at least always cover electricity costs
Encouraging the expanded ease and use of electric cars and trucks should be highly encouraged. Cost, reliability and convenience are ultimate.
It will be important to move to kWh-based costing once IC sorts out metering issues. The vast variation in charge rate between vehicles makes per minute rates inherently unequal and unfair for some. The perception of fairness will impact the usage of the stations.

I would pay more for a 100kWh charger than a 25 or 50. Quicker in & out for people. Slower charge means there is usually a line-up.
Pricing should aim to utilize stations and could even be dynamic for stations within the city where drivers have options and a highly utilized station should probably be more expensive than a station that doesn't get used enough. Highway stations should have a middle of the road pricing structure that makes them cheaper than gas stations.
Higher EV adoption will result in higher utilization. Recommend looking at doing a couple of higher profile charging sites to help gather media attention. Charging sites like Gridserve's Electric Forecourt in the UK really help get the word out about EVs.
When there are only two charging spots at most stations, it would be really useful for the app to show more information besides "IN USE". Like for how long has a station been in use and what percentage is the person's battery at? It helps me to time things so I can get there as someone else's session is nearing to a close.
Prevent internal combustion vehicles from parking in charger spots. Keep the price to charge low.
Ensure that they can charge Tesla cars. These are the most popular electric vehicles. These cars are the reason that any manufacturer is producing electric cars and the fact that BC Hydro made such a massive blunder by excluding the format is embarrassing as a British Columbian.
Low or no rate for off peak times to encourage people to use the chargers during off peak times.
Place the chargers in the parking lots of restaurants, not by town halls and etc.
get the fee closer to the residential charges until EV adoption is over 25%
Uniform costs across all sites. Better app notification. Costs per kWh.
Please ensure easy use at a station - plug in and card tap. Petro Canada uses a simple credit card tap. Don't make it complicated.
Keep the price reasonable. For the record, I do not think charging by the minute is a good practice. No other form of energy is charged for (petrol, diesel, natural gas, coal, what-have-you) on a time-spent-delivering basis. Nor should it be. Electricity is measured in kWh. Unless it is sold in those units it is not clear what cost per unit is being charged. In my experience, a level 3 Hydro charger delivers one kWh of energy roughly every two minutes. At $0.25/minute, a kWh will cost around $0.50. Level 3 private EV energy dispensers presently charge an average of $0.30/min. (approx. $0.60/kwh). Neither of the two I've dealt with -- Petrocan and Flo -- provide an invoice to document what actual amount of electricity has been purchased or what its unit-cost is. Drivers of fossil-fueled vehicles are shown this basic transaction data at the pump, as well as on their purchase receipts. EV drivers deserve the same basic courtesy. If BC Hydro insists on selling power on a per-minute basis, I hope you will at least continue to follow it up with the same itemized invoice you presently provide.
Many EV owners do not know that BC Hydro has its own EV charging stations. However, most do not care either. Most EV drivers want to be able to charge their cars at the most convenient locations for the best possible price. To increase usage, there will need to be a continued increase in the number / availability of stations. Is the goal to increase usage of BC Hydro stations? Or is the goal to get more people into EVs? I would argue the latter should be the focus. As the number of EVs on the road continues to increase, naturally the usage at all charging stations will increase.
Add more stations, improve reliability and availability, and lower the cost to use them
Electric vehicles adoption rate will go up as there are more vehicle buying options available. The utilization is going to increase, whether BC Hydro encourages it or not. I think Hydro needs to facilitate electric vehicle usage and the utilization rates will follow. In short, build more locations so that the province is connected and build multiple chargers at each location so that the EV public can be facilitated. With EV cars and charging it really is a case of build it and they will come. It cannot be the other way around. So build the EV charging network for the future and utilization will eventually increase.
Building them across the province, not just in the south.
Since the stations were free, I believe the stations were used well already. To improve utilization when the rates kick in, I think more (ideally ALL) stations should have faster charging rates. 50kW still takes over an hour to fully charge (80-90%) a longer range BEV. Also, it says it’s “50kW” but really only charges at 42kW max.

Instead of providing feedback on how to improve utilization, I wanted to provide feedback on future compatibility. If we are to ban gas powered cars in the future, it's more wise to plan an infrastructure that can charge more than 2 cars in a populated parking lot like Metrotown or Richmond center. It's silly to focus on 2 car charging stalls when clearly that's not going to be enough to satisfy the mass in the coming years. Instead of thinking of ways to satisfy us, the lesser population, maybe we should plan on how we can improve infrastructures so we can charge over 40 vehicles per mall. Once the infrastructure is in place, then we can decide on how to recover the cost. We wouldn't want to spend all the money to build a 2 lane bridge, just to satisfy us and then spend more money to demolish it to build a 10 lane bridge in the future. This is the same concept here in my opinion. If the target is to ban gas cars by 2030, we need build more stations before we can start to deal with cost and recovery.

Allow for being able to book a charging session so that people don't waste their time waiting in line. Keep the cost to that of home charging to ensure there is equity between those with the money to have charging at home and those who have no choice but to use public charging stations. Despite the higher cost of EV's, their design allows for cheaper running costs. Having expensive charging rates undermines this equation which is an important selling point of EV's.

We need laws (like this one: https://www.cbc.ca/news/canada/kitchener-waterloo/electric-vehicle-parking-fine-1.5394288) to prevent non EV vehicles from parking in EV charging areas. Likewise, we need a way to penalize EV's charging too long (like Tesla does for superchargers)

I answered "I don't know", because me answer is, per minute charging is not the right way. This lack of DC charging monitoring needs to be corrected, ASAP. Then you can charge based on electricity used, and then you can charge an idle fee to encourage people to move on. Come on, BC Hydro...get with the times or you will get left behind.

From my perspective, the most important reason for DCFC is to support travel away from home. Certainty of availability is the single most important thing for me. Routine charging should be occurring at locations other than DCFC, and BC Hydro should work with municipalities to ensure all drivers have local charging opportunities.

Obviously a lower charge (or free) will increase utilization. Which brings me to my question no one would answer during the Webex presentation. Why now? Why are you submitting a rate application now? The DCFC's have been free since 2013. We have a declared climate emergency. We should be encouraging EV's to replace ICE cars ASAP. The timing seems counter productive. Yes, charging one day, but not now. A public subsidy, if that is what it would be, is required to off-set the billions given to fossil fuel companies as subsidies. I cannot understand the decision to go this route now, when Canada is obligated to do it's part to keep global temperature increases to below 1.5C.

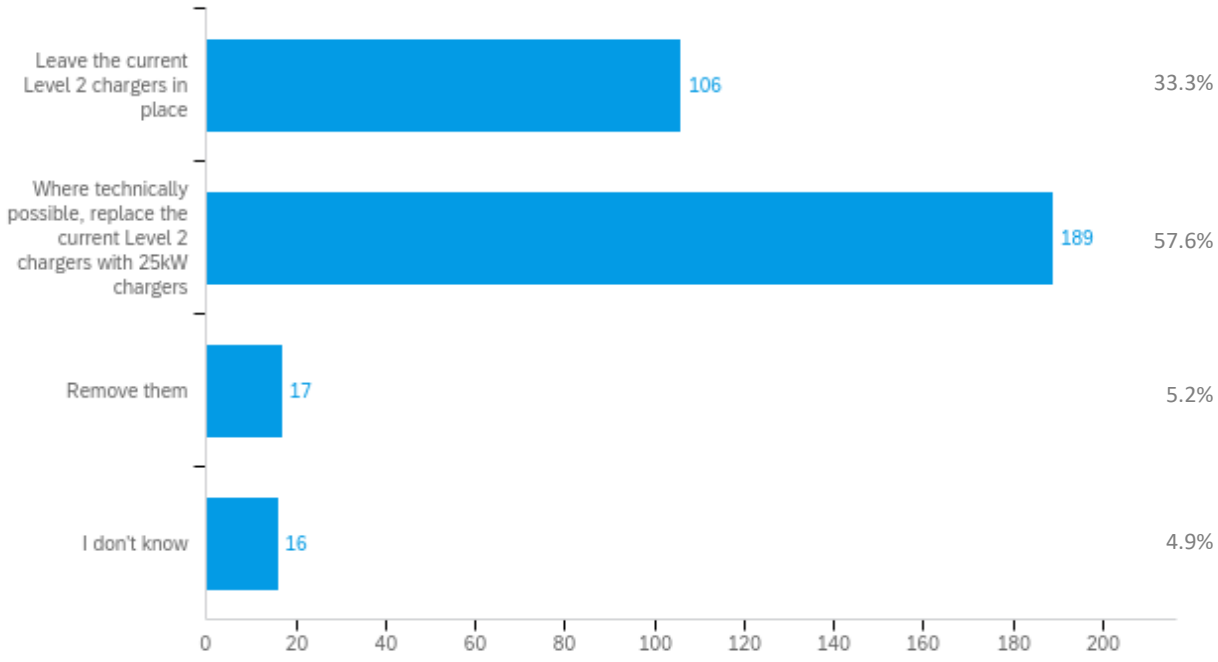
The main rate should be per kWh, not per minute. The per minute rate discriminates against older or less expensive EVs that cannot charge at the maximum posted rate and thus subsidizes new expensive EVs that can charge at a much faster kWh rate. If you cannot use now the per kWh metering, you should wait until you do.

Paying per Kwh is the best and fairest option, just like we do at home.

Added post-survey close. Feedback provided to BC Hydro Call Centre representative: Hello, I am no longer able to fill in the feedback form regarding the proposed EV fast charging tariff. However, I do have one serious objection to the proposed fee structure. I strongly believe that "per minute" charging is highly discriminatory, in particular against owners who cannot charge at a full 50 kW rate. From my personal experience the BC Hydro 50 kW chargers provide anywhere between 12 and 43 kW, the smaller numbers are in the winter. Please see below the enclosed copy of my today receipt from FLO, which shows that it took close to 50 mins to provide me with 13.8 kWh. Using your middle proposed rate of $0.25 per minute, this charge will then cost me $12.50, or $0.91 per kWh. This is more expensive than other fast chargers, such as Tesla superchargers. Even if I was able to get 25 kW (a more realistic rate during our west coast winter), I would still be charged $0.60 per kWh. We live in an older condo building which has no electric chargers. Our strata are not planning to install EV chargers, while the current bylaw does not allow us to use the few electrical receptacles in the garage (except for 'vacuuming' the cars). If I lived in a house, I would be paying a 5 times cheaper rate of about $0.12 per kWh for an overnight charging of my EV. As you do measure the kWh used by each customer, you can easily bill us using an optimal per kWh rate. The objection that "... it might create less urgency for a driver to vacate their spot", can be easily overcome by increasing (doubling?) this rate after 40 mins of charge. I am grateful that you read my feedback and hope you can reconsider the proposed rate structure to a per kWh rate. Wishing you a Happy and Healthy New Year!

Added post-survey close. Feedback provided to BCUC: Hello, I called the BC Hydro EV charging customer help line at 1 866-338-3369 and was told that BC Hydro will apply with you to start charging users in early 2021. The rep also stated that they sent emails in August and December 2020 to notify users regarding this issue but I never received these emails. I think they are lying and want to charge EV drivers because they are losing money on their bad decisions like Site C and in the manner in which they rolled out the fast chargers. I chose an EV, stretching my budget, believing EV charging would remain free since hydro electricity is so cheap in this province, the governments of BC and Canada have incentive to encourage higher adoption of clean fuel vehicles to mitigate climate change, etc. Look at the true cost of gasoline in comparison: https://www.smartcitiesdive.com/ex/sustainablecitiescollective/true-cost-gasoline-15-gallon/26284/ That is a whopping 5 dollars per litre in CAD but the government keeps subsidizing fossil fuel companies and consumers while effectively clawing back the EV rebate by charging rates for EV station usage that are higher than the cost of generating that electricity. Furthermore, the government has allowed private companies such as Flo and others to profit from for-fee charging utilizing existing electricity infrastructure which is a complete sham. It costs them nothing to build that last quarter mile in the form of the station itself so effectively the taxpayer is subsidizing these cherry picking companies to profit from drivers who are trying to do the right thing for the future of BC, Canada and the planet. Canada is already a climate pariah and allowing BC Hydro to charge fees for EV charging is another step in the wrong direction. If we don't start acting now to transform our economy, Canada will fall further behind technologically and will suffer a myriad of consequences from the results of climate change spiraling out of control and the loss of markets for fossil fuels as other countries become fully self-dependent on alternative sources of energy. I am a patriot with a long term view and I feel as though the key decision makers are not considering the plight of young Canadians and those yet born. Thus, this is not only an environmental issue but a human rights one where the key decision makers, many who are older, are making decisions to improve their own quality of lives at the expense of younger and future generations. This is a shame since you also depended on your ancestors to hand you a habitable planet. Please check with BC Hydro why they claim to have sent emails to users in August and December when they actually have not.

Q5 BC Hydro currently has a few Level 2 (240V) chargers that serve as a back-up charging option. In the future, Level 2 charging service will likely not be a core offering from BC Hydro. What should we do with these current Level 2 chargers?



Q6 You indicated that we should leave the current Level 2 chargers in place. Could you tell us why?

You may as well get as much use out the capital and installation costs already invested. The cost of the electricity delivered by these charging stations is minimal. Over time, these stations can be upgraded to 25 kWh (or as great a power delivery as possible) when these stations require sufficient repair or replacement.
They are there and they work. Replacing them costs money unnecessary to spend
If this results in the availability of more charge points, it spreads the load a bit. Sometimes a top-up is all one needs when traveling. Some older cars also can't take advantage of the higher-capacity chargers, so this provides them with as much juice as they can handle without occupying a slot that would be more useful to a newer car.
DCFC stations should all include some L2 chargers. Unless already in place by other parties at the same site. This is for redundancy. Also, already 3rd party providers of DCFC stations are moving away from installing all DCFC chargers that support both CHAdeMO & CCS-Combo 1 connectors. Given that almost all EV manufacturers have moved or are moving to CCS-Combo 1, then there is the need to have some support for the older CHAdeMO EVs. Keeping in mind that typically these vehicles have smaller battery packs. Further, DCFC infrastructure should be targeting BEVs, and not PHEVs such as the Mitsubishi Outlander. I think that it is the wrong direction to go in not integrating L2 capacity at all DCFC sites
Currently the charging infrastructure is not adequate to support widespread adoption of electrical vehicles. Removing them would reduce the infrastructure further. Although these chargers are not as popular or efficient, for those individuals who desperately need to charge their vehicle (e. g. a fast charger is not available) these are very valuable. Plus if someone is waiting for a fast charger they can use these level 2 chargers if they are near the fast chargers and those are currently in use.
Rapid(er) charging is crucial for ease of use and to ensure more people can use the stations.
I don’t think the province has enough L2 public chargers for the future. I would love to see L2’s be added in some more urban charger locations, or locations with parks or attractions - example Manning Park, Vancouver, etc.
I was only allowed one selection. Suspect the cost of removing the chargers and upgrading them to 25kW DCFC's might not make economic sense. However, if it did, I would support removing the level 2 chargers and replacing them with 25kW DCFC's
I have had a few fast chargers that were not working due to software or hardware problems. Having a L2 station maybe just enough to help a customer make it to another charger rather than need a tow.
Entirely location dependent. If it’s in a long stay setting leave them. They are also useful for hybrid drivers whose vehicle can’t take a fast charge anyway.
small battery EV such as PHEV can still use it if it's located in convenient location.
Charge appropriately for them bit leave them as an option
If more options are available to users. Especially those with older ev’s why not continue to offer support for them as well as high level users?
If it ain't broke why fix it!
When out one needs fast changes
Since it's there, can be just leaved it there as a backup.
This would save capital costs for BC Hydro. Why replace the Level 2 Chargers as they most likely would be trashed. If there is greater demand perhaps leave the Level Two and also add Level three chargers
Since electric charging options are currently limited. Additional options are still a good idea.
Good alternative when fast charging is in use and sometimes just a top up is all that’s needed
f the L3 are in use they are good in a pinch.

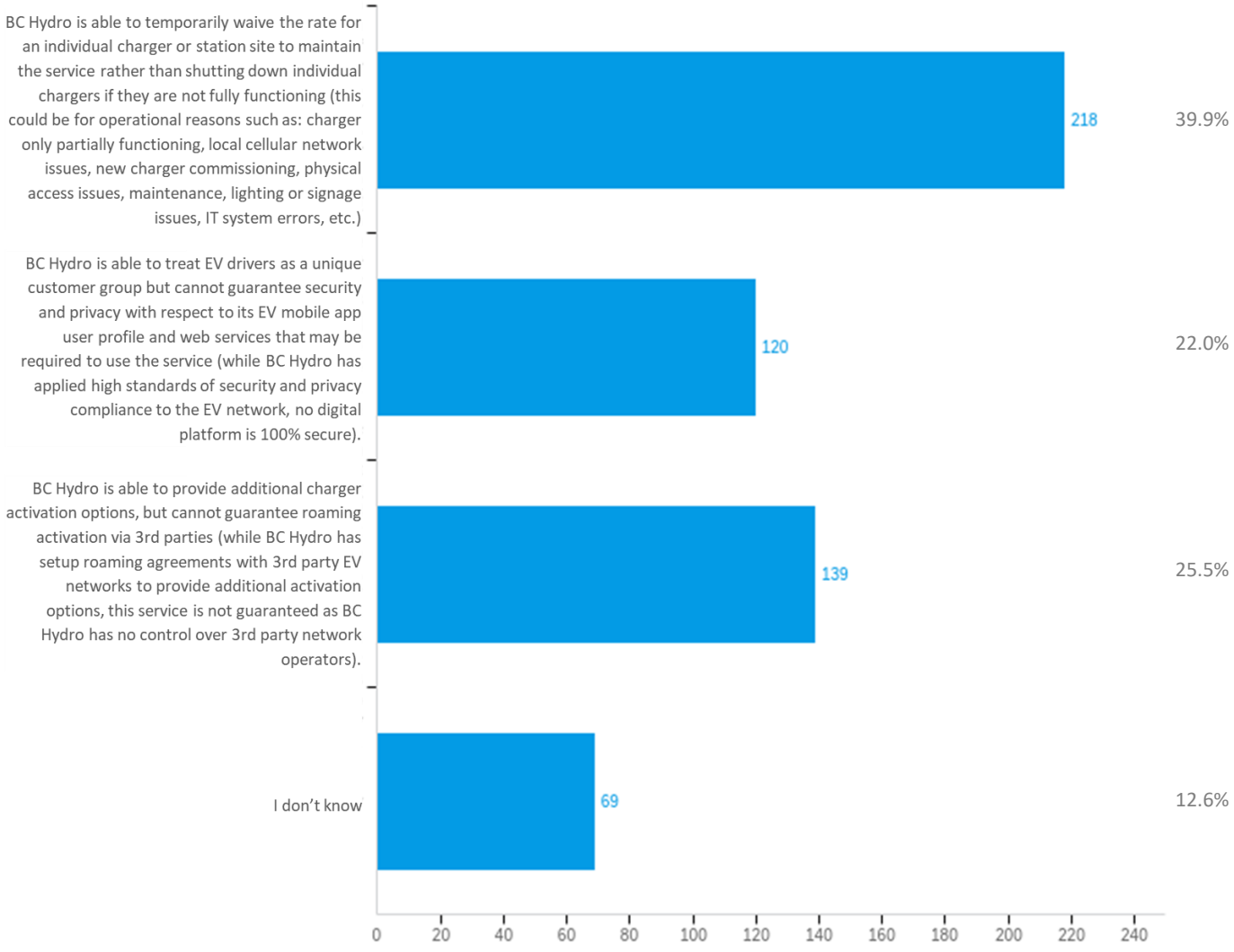
Level 2 chargers are nice to use when you are going for coffee and just need a bit of top-up
It is more efficient for cars needing full charges to cover a great distance to stop using a supercharger and move to a nearby level 2 when the supercharging energy delivery rate drops to near that of a level 2 charger (at high SOC levels). This allows a much shorter wait time for a level 3 charger if demand is high. A level 2bis also a useful backup in case the supercharger is not working. Some EVs will not permit a supercharge when at very low SOC, and then the level 2 could be used to increase that SOC to be able to use the supercharger. EV charging demand is rising fast, and taking out any chargers makes no sense.
Having a backup is a good idea because so many people are charging and it would be a waste to decommission them. In a remote area this suggestion is not ideal but in an urban area it would be fine to charge for 1+hours if a person is out shopping or eating.
Because they could be left at no charge or you could make the 25Kwh chargers free or less than 20 cents and charge between 20-25cents for the higher output chargers then that gives EV users a choice. At least if they are free than someone can still charge until the higher fast charging station becomes available. Like in Hope. The worst case would be you run out of charge and you are stranded. .
Not all EVs have DC fast charge capabilities. Others, like the Leaf, in high temperature conditions can only charge at low rates equivalent to level 2.
The level 2 chargers work for all types of EVs and work in a pinch or for overnight trips for those willing to leave the car there. I think they should remain free to use though.
Sometimes the fast chargers are busy or OOO and L2 can provide critical range to get to the next charger.
As there are currently wait times to access L3 chargers these could be used to start the charging process or in winter to "warm" the batteries to increase the rate of level 3 charging.
Because they are already installed, no sense in spending more money to remove them. Plus they still might come in handy in some situations.
More is better
So that they can still be used, instead of making them obsolete. That would appear to be wasteful.
Some people may not have the required adapter to use the fast DC chargers. (Example: Tesla's require a $600 CHAdeMO adapter.) The L2 charger uses a J1772 connector that virtually any EV can use.
They're already there and working so save labour time and money by leaving them.
Level 2 chargers are very useful for owners of EVs without fast charging capabilities. Leave the L2 chargers in place until they stop working, then remove.
My EV cannot use Level 3; same for many older EVs as well!
So there’s a backup in case the main chargers are broken, unfortunately a not uncommon occurrence in the past few years. Also great in case all chargers are being used. BC Hydro needs to install minimum 4 chargers at 100kw per location, ideally way more in some locations.
They are useful in certain circumstances
Switching them out will cost you more money. Focus your spending on level 3 chargers. Maybe in 7 years or as they become damaged or obsolete switch them out at a later date.
They are still useful when you are waiting on the small amount of fast chargers.
Provides options
Some people may be relying on them
Yes because many people, like myself use level 2 and they are better on the battery life then using a level 3
The more the better
Like gas stations, availability for EVs to charge is crucial especially with battery degradation and cold climates affecting range. Might not be a revenue stream for you but implementing multiple stalls of DC fast chargers should help recoup that over time

Level 2 chargers serve a purpose for those who just need to take more time somewhere or want to trickle charge the last 20%. Also, we simply need more infrastructure out there and so it seems silly to rip out something before the end of its useful life.
For example a Tesla cannot use the fast chargers without a $600+ adapter. But could use the level 2 in a pinch. With the 600$ buy in to tesla, it is over a year pay back to justify the use of this network.
still serve those shopping or dining and do not need a fast charge. This means they do not need to race back to their car when charge is complete. I would like to see more L2 units to go with fast chargers. This allows people to get some charge when waiting for an L3 or if they need just a small charge.
The more charge stations the better
Leave it in place because people are used to it being there
Given we know that most vehicles charge to ~70 to 80% fast then slow down most vehicles would be 'expected' to stop charging and move on at that point. If someone is looking to top up then being able to move from the DC Fast charger to a Level 2 to finish would improve the availability of the fast charger as well as offer some charging while the fast charger is busy.
Level 2 chargers are more battery friendly than level 3. In some cases one could charge to 80% on the quick charger (level3) and top up on the level 2
The level 2 chargers provide an opportunity for those who require a full charge to move to them if someone is waiting to charge at a supercharger. Once a car is near full charge the rate drops to that of a level 2 charger so it makes no difference which one they are using
If I'm opportunity charging, I'd much rather use level 2 than level 3. Also, if I'm going to be longer than 15 minutes while running an errand, I don't like to park at a level 3 and be in other peoples' way. With the extremely limited availability of level 3 chargers, I only use them when necessary and otherwise prefer level 2.
For EV emergencies
If there is a line up for a fast charger and you are over 80%, tone could consider changing to the slower charger. To assist in this motivation, the rates on the slower charger could be less. This may also be attractive to local people leaving the faster charges available for travelers.
it is always good to have a backup. if I arrived at a fast charger and found it out of order or busy I can still get a slower charge with a level 2 charger.
I believe the cost of keeping these in place is small compared to the cost of building new L2 chargers in the area. Also, having multiple charging outlets in one location enhances their visibility.
It is better to have a charger in place than no charger for more people to use. If they could be upgraded that would be good too
More options are best. I have an Smart EV with very short range. I have needed to use lvl2 chargers to get me home and my car does not support anything faster.
Many PHEVs can only use L2. PHEVs are not evs,but it is a start.
The vast majority of EVs are Teslas. All Teslas come with a J1772 adaptor. This would allow the majority of EV users to continue to use those BC Hydro chargers.
Some cars don't do fast charging.
Additional charging options for busy time periods
See my previous comment re: internal inverter limitations on some vehicles (eg Chevy volt - 3300 watt inverter that takes 4.5 hours to charge regardless of the power supply).
cost of installation and unit has already been paid. It's already there. Could put in a meter to charge for using it.
Convert them for pay-for-use stalls to make try to recoup some money off of them if possible.
If they are already in place and working what would be the point of removing them.
They are useful for those who want to charge while they shop.
a waste to remove them.

There is a need.
Because as more EV cars on the road, most charging stations are in use all the time! The more charging stations the better
It allows users to charge at L2 if the user wants to charge slower if they are staying at the charge point for a longer period of time. Such as maybe they can have a meal nearby.
Because it's the most cost effective use of tax payer money and it has been a proven method of charging. Just add to the infrastructure don't reduce. Add more 25 50 and 100 kwh chargers don't remove anything.
ALL level 3 DC fast chargers should have a few level 2 240Vac charges at the same location so when the DC fast charger is busy someone can use the slower Level 2 charger as back up. As well some people park all day at level 3 chargers and they would be better off with a level 2 charger.
At peak use hours can serve people who require some charge if fast chargers are backed up with people waiting. Some users prefer slow charge to preserve battery life
They may be useful for long-term / overnight charging.
The cost to replace them with something else is a waste of money. Leave them in place if they're being used
These should be in places where fast charging is not needed. Street parking, parks, etc. Please look at how hydro Quebec has placed their level 2 chargers
Some people prefer to use Level 2 chargers because they are easier on the battery. Giving those people the option would be a positive thing. There are currently two level 2 chargers right beside the Tesla charging station in Victoria. Many times you will see a Tesla owner choose the Level 2 charger because of the strain the Tesla Superchargers put on the battery over time.
Since Level 2 chargers provide still a good back-up solution where you can also leave a vehicle for more than half an hour plugged in without being penalized or making other people wait for you to come back to the car and to move it. This makes more sense in urban areas with more amenities close by to spend time at.
I had an issue with my charging port, and for a while could not use a Level 3 charger. It was important that there were Level 2 stations available.
There has been times that the fast charger is in use or down. At least I can charge to get home
Some vehicles will not accept DC fast charging. Unless private L2 chargers are available nearby for the same cost per KW/h it would be unfair to those owners to be discriminated. At least until EV's catch up with current fast charging tech.
Ev owners charge their vehicles whenever possible, not to fully charge but to partially charge whenever is convenient. Even fast charges take time and if done often enough, are harmful to the batteries. Level 2 chargers are not harmful.
Some people only need a Level 2 charge and in some cases can ONLY accept a Level 2 charge, and we need to do whatever we can to encourage decarbonization (PHEV's for instance). Likely I would price the Level 2 at $1 per hour.
L2 have significantly better reliability, and as a backup, reliability is critical, and can be used to provide heat when you are stuck due to road closures.
Most charging solutions are in areas that are multifunctional (shopping centres, stores, malls etc) so the user has the option of a long shop/eat/wander or a short one. For example in Pacific Centre I have the option of Level 3 charging or Tesla Supercharging, which one I use depends upon how long I will be in the mall.
Not all EVs have the BC hydro connections, other EVs require adapters.
When DCFC's fail a L2 with no authorization is a good back up. Also for all those complaining about paying for charging they will have a L2 option which might then encourage them to install an L2 at home or work.
25kw chargers are not as compatible with all vehicles. Tesla vehicles include adapters to use standard level 2 charges. Leave them in place. The reality is that Tesla vehicles make up a very large percentage of electric vehicles.

There are any PHEV vehicles in market and coming to market that can only use that service.
many PHEV can't use the CCS charging and can only use the J1773. Leaving in place would give them an option to charge
Less costly option for EV owners and J1772 accessible to all EV types.
Not all Nissan leafs work with the dc formats. Also BC Hydro is ignoring The Tesla format when they are the most popular electric car so this would allow people with a model 3 to charge.
for emergency use by EV owners
They are a worst case backup in case there is an issue with DCFC and somebody arrives with very little charge.
Paying crews to remove existing chargers is an extra expense with no real benefit.
On road trips where we want to charge and go as fast as possible, we want DC fast charging. Level 2 chargers just don't cut it. However, if there are existing level 2 chargers in locations where one might leave a car for an extended period of time or overnight, then one could charge at a level 2 station and not take up space at a fast charger. For example maybe you concentrate level 2 chargers in areas where there are a lot of condo owners which may not have access to electricity at home. Many of them may wish to charge overnight.
They seem to be more reliable than the DCFCs. They would also help if there is much demand.
They are a sunk cost and continue to provide value.
You have already invested in their installation. Removing them is throwing away this money when the cost to keep them is significantly less. They are a great solution for where there are existing DCFC stations in high use or as a back-up when the DCFC station is not working.

Q7 In your opinion, which of the following should BC Hydro adopt as part of its fast charging service? Select all the ones you agree with. *Note: The items in the list below are not reflected in the BC Hydro Electric Tariff's existing terms and conditions. We would like your opinion on which, if any of these we should adopt.*



Q8 Is there any other feedback that you would like BC Hydro to consider before we file our application for a fast charging service rate? *Note: Please make sure to not include information of a personal nature or information that could be used to identify other persons. Any such information, if provided, will be removed from your responses and discarded.*

Until ICE vehicles pay fully for the pollution they generate, EVs should not have to pay for the full cost of the electricity. With no tail pipe, no fine particulate emission and no burning of chemicals, electric vehicles do not pollute the air. This saves lives, reduces health care costs and reduces the taxes people need to pay to support health care. According to Health Canada, about 14,600 people die prematurely due to air pollution every year. In BC, an electric vehicle emits about 98% less greenhouse gases (CO2) than the conventional gas or diesel vehicle.
Cut it out
Follow the Norwegian model of incentivizing the use of EV's as much as possible until the majority of vehicles being sold in BC are EV's. Then the incentives can gradually be reduced.
The information session could have been more professionally done. There were long gaps between speakers, the voice quality was moderate, the question were too slowly relayed to the person answering the questions and it was difficult to follow the chat section and the speakers. The session should have been live at least 15 minutes prior to the start of the session
I really appreciate BC Hydro's efforts in deploying DCFC infrastructure. This is a challenging task and the reality is that we are in the process of inventing the future. The process will be at times messy and challenging! Kudos to BC Hydro...
A majority of survey respondents what energy based charging, not length of time based charging. Who cares about there not being a certified measuring device? Off the shelf energy measurement is available right now. It may not be super accurate but it will be good enough compared with time based charging, which during Winter, means my charging costs are doubled.
The PUBLIC dc fast charging should be roughly similar to charging privately at home or business, on a kWh basis.
The costs need to be considerably lower than gas prices .... we need more EV's on the road to cut down emissions!! BC hydro is on track!
While BC is one of the Canadian/NA leaders in EV adoption, we still have a long way to go to make a significant impact on our transportation related GHG emissions. Also, the EV "charging model" is far from coalesced/converged; the cost metric(s), site design and equipment (including storage enabled chargers to allow DCFC when only single phase power is available at remote sites) are still being optimized. So, while many EV enthusiasts are more than happy to pay charging fees, charging fees are seen by the MAJORITY non-EV enthusiast as one more disincentive to get an EV, on top of the currently substantial difference in capital cost. Accordingly, while it is tempting, especially in these COVID19 budget shortfall times, to try to recover as much cost as possible from the EV charging stations that BC Hydro has been so good at deploying, we risk stalling out EV adoption if we charge too much, too soon. WE MUST KEEP OUR EYE ON THE BIG PICTURE GOAL, AND THAT IS REDUCING OUR GHG EMISSIONS. BC Hydro must also consider that an increase in EV uptake will increase the amount of residential electricity sold under the higher margin Step 2 rate. This is likely to make up for any initial costs in funding charging station installation, operation and maintenance until EV's become mainstream.
Some of the slow charging stations (Flo) shut off if you go for a walk. Another reason to get rid of them. They were free but not helpful when you need a charge and want to go to work
No, your team does a great job & I am thankful you are doing this. I have expected to be paying for the use of your stations before now and hope you have collected enough data to get this up & keep adding stations. The future will require a min of 6 DCFC at major locations but for a yr. 2 should be the minimum.
Regarding my usage at BC Hydro Charging stations. I have been using between 55-60 KWh. per visit. Applying a cost of 20c/KW against time, 20 cent /min it is 30% more expensive. So cost per KWh. at the rate of my previous note would be my recommendation.

I drive an EV to reduce greenhouse gases I cannot find how you're encouraging the use of charging on the one hand yet dumping tons of our money into site C to help generating fracking carbon emissions activities .?
the rate should be reasonable enough to switch to EV
Since BC Hydro wants to treat EV Owners like a separate consumer group, I would very much like it if EV charging stations are treated the same. Too many instances of ICE vehicles parked where they shouldn't be. BC Hydro should be saying to Gov. that these spaces should be covered under the Motor Vehicle act and expressly prohibit parking for not charging vehicles at any time. Tow them and/or ticket them if need be but time to send a very clear message to non EV drivers. "You don't have to buy one but you don't get to use the spaces specifically set aside for charging".
Although not specific to this application, it needs to be mentioned that those users who charger at their homes and cross the threshold to step 2 rates are unfairly being charged more to own an EV! When the goal is to have more EV users on the road, this is a deterrent. All home hydro users have an account and can easily prove EV ownership, to which there should be an adjustment on Step 2 charges for the good of greenhouse gas reduction.
I still say you should charge for what is used not a set time. If you can time it, then you should be able to measure the quantity of consumption as a function of time. Or you should be able to measure the time and charge a by the minute "time" charge not by the half hour. Do I get charged an hour for 35 minutes!?. Also charge a "fine" if people overstay at the charger so as to promote "etiquette training". We charge at home with the 2 cars on a 110 and we have zero issues, so other than long trips, in the city you don't need super chargers but just toppers while you are shopping or at the restaurant or the movies.
LISTEN to feedback from current EV drivers and incorporate their needs into your system!! WORK with small businesses to share fast-charging terminals with them to encourage working together to make the fast-charging network part of the green efforts of businesses and consumers.
Make sure implement much high rate for those occurring the charging spot after charge is down.
Keep the rate low. Currently we pay $2.00 an hour for first two hours and $5.00 after that. People move their EV's before the higher rate kicks in. I am willing to pay, but not your proposed rates of $6.00 an hour, especially when there are public free charging stations. And, you should look at incentives for people who are charging at home. Sure the rebates to assist with an at home charger were good, but covered less than 1/3 the cost of installation. And now, we have lost any rebates in relation to our home hydro usage, (like reducing by 10%) which I have been able to meet in the past. Acknowledging the use of a renewable resource with positive environment and social impacts, would go a long way. You are going to disenfranchise EV's. Maybe that's what you want to do.
More locations, higher power at existing locations
Yes all home charging of av vehicles should be at the lowest charging tariff. This would encourage level 2 home charging. Should be separate from home use. To encourage ev purchasing
If rates are going to be in place, they should start off lower to get people accustomed to paying.
You need to commit to quite a number of geographically diverse locations if you really want to encourage people to use EV's
Charging by the minute will penalize users of vehicles which cannot charge at the maximum rate of the charger as they will pay more for their energy than those who have more capable vehicles. Is this fair? Does slower charging tying up the charger justify charging more for the energy?
Still need more improvements and more bc residents using ev before charges are implemented. Customers will chose to charge at home which may be cheaper than using bc hydro charging stations which people won't use
Hopefully in the future you can charge by the KW and not by time, as each EV charges at a different rate. Therefore if it is timed, some people will pay more than others for the same amount of electricity.
No
BC hydro should pressure the government in regards to climate change. Gas and gas cars should have to pay for the pollution they cause, making EVs seem far more attractive
Maximum charging times should be limited to 30min max and/or 80% battery charge. Whichever comes first as it will help reduce backlog of vehicles that need to wait for a charger

It seems BC Hydro is committed to charging fees on a time based system. Since cars vary in charge rates [kw] and some like mine will vary kw accepted while charging, the fee per minute should be based on what kw rate the car is receiving/accepting as the session proceeds.
There is a requirement for the 25KW chargers because most EV's charge slower at 80% so an EV could move to the 25KW so another EV that needs a big charge can get that charger. Without enough chargers there is the range anxiety so keep as many as possible in touristy areas .
Increase the availability and convenience, don't worry too much about the price because electricity is always going to be cheaper than the gasoline alternative. Build more more more stations because EV uptake is going to keep rising.
I do not believe that BC Hydro should be charging fees until they are able to actually charge for the power distributed - so using DC meters. Think of the outcry if people were charged for gasoline based on how long it took to fill their tank. This essentially is what BC Hydro is trying to do. Right now trying to charge with BC Hydro's chargers can be quite confusing. Charging a fee based on time will cause further confusion and outright mistrust especially when people are being charged different amounts for energy based on their vehicle software, initial battery charge level, temperature and charging station capability and I'm sure different other factors. I wonder if there should be a time of day differential built into future charging rate similar to that done in other provinces to encourage EV charging to be done in the evening and overnight when demand is lower? I think providing users with a simple calculator to determine viability and cost of using a specific charger would be advantageous. I would assume most EV owners are not electricians or electrical engineers. As an electrician I'm not sure that I even understand all the variables that will determine how much charge I will get over a certain period of time. I do not think the average EV owner has any idea of what paying by the minute really means and BC Hydro should not be taking advantage of this!
The ev charging rates should reflect the need to encourage users to charge and move on to free up the station. Rates should increase after 2 hrs use (or 90% charge) so customers will vacate the station and allow others access.
base it on electricity used not time at the charger please!
I think that these fast stations need to be subsidized by BCH to assist the EV system to get off the ground. They would tend to be in the more rural areas and leave to the more urban areas to commercial enterprises who would compete more on location and additional services provided.
Some kind of discount for seniors. Many have purchased EVs for their retirement. If I was able to charge at home it would cost me less than $3 for a full charge from 20-100%. But I cannot I have a 2014 Leaf with less than 100K range. I do less than 5000K a year (I am in my 4th year of ownership) so I use fast chargers if going up island or to Vancouver. At the rates you are proposing I might as well go back to polluting the atmosphere. A trip up island would cost as much as driving an ICE. The first L3s would cost me on average $3 a charge. That was reasonable. $6 is usurious. Won't worry Tesla owners I am sure, but it sure will impact me. Hillside Mall have put in Switch Energy chargers & since it is a 10 minute walk for me I would go back to using those - if I could get their app working, which I cannot so that is useless too.
it would be nice to have a discount for homeowners that already have a utility bill...and to possibly just add it to their utility bill instead of having to keep a balance on the Hydro Card
Many jurisdictions have enabled per kWh charges, and this is only fair given the different charging rates of different vehicles.
See my other comment about rates during certain hours of the day.

BC Hydro needs to consider equity more broadly. Slide deck indicates that most surveyed people were wealthy, white, home-owning males. BC Hydro does not appear to have done enough to consider issues of gender, race, or wealth in designing this program. This has impacts on the equitability of not only EV charging rates, but also site selection and design (e.g. - safety & security). Similarly, BC Hydro lists 'regional travel focus' as a primary goal, based on feedback from stakeholders. But the numerous groups not consulted may also wish to see, for example, a focus on providing affordable DCFC services in low income or remote communities that will not be served by profit-driven EV charging providers. The proposed rates cite electrical consumption costs and capital costs in their model, to be recovered in the short- and long-term, respectively. Additional fixed operating costs, such as data network services and demand charges are not listed. These should be part of the consideration in BC Hydro's business case in areas where BC Hydro will be competing with other EV charging providers in the medium term. BC Hydro should have to recover the same costs as BCUCA-exempted DCFC providers, with the exception of remote locations. This means that BC Hydro's business casing should either recover the same utility extension, consumption, and demand charge costs that others need to; or, should adjust those rates to reflect a more feasible business case for all. A focus on 'good behaviour' (i.e. - reasonable turnover) is important in cities and towns. However, for highway locations with few amenities, this is less of a concern. The focus in these locations should be on reliability and minimizing queues.
BC Hydro should not be in a monopoly position with respect to fast charging
It would be great if BC Hydro could provide fast chargers at locations outside major centres, making long distance travel possible where it otherwise would not be. But 50 kW is the bare minimum for a "fast" charger. To make long distance practical, 100 kW chargers are much more useful. I would pay more for the faster charge rate. As a Tesla owner I currently cannot use the BC Hydro network, unless I purchase an expensive CHAdeMO adaptor. I won't do that unless there are enough 100 kW charging stations that I can have a reasonable expectation of being able to find one available when I'm on a road trip.
kWh + idle penalty (with 5min grace) is preferred to per min rate
Try to keep costs as low as possible. There is so much more freedom in driving an EV Car than a gas driven car at least in this case due to low finances. After expenses are paid.
If not able to utilize the current level 2 chargers in their current locations, they should be offered to small businesses to increase availability of stations and encourage EV adoption.
Please keep it way below gasoline prices. We need there to be an incentive.
I didn’t understand the last question but I think you should work with other companies to offer all charge port options (ex.Tesla). I also think you should be sure to maintain the charger spaces. Treat them similar to a convenience store and ensure the parking lots are plowed of snow and have garbage removal. You could partner with businesses that offer the services that road tripping people need and they can ensure proper maintenance of the charge spaces (ex. Convenience stores, restaurants, truck stops).
You always need more than one charger at a location
Locations security, user monitoring,ie not EV parking, Rapid resolution of maintenance issues, Keep in mind older EV need closer spacing of charging Especially in northern, rural remote places no other charging options. Helpful to be near transportation hubs, ferry? Hospitals, Carshare, rentals Be sure to keep in mind slowest uptake will be dependent On costs associated and most folks rent and have no EV home charging.
I think that it is good to have a time component for all charging sessions to encourage people to move along. Obviously a kWh component to the pricing would be ideal if/when it is technically possible. You should also consider adding a fine or tow-away mechanism for those who are parked in a charging spot but not actively charging (either a non-EV blocking a charger, or an EV that plugs in for the entire day and leaves)
I applaud BC Hydro for the work involved in setting up these Fast Charging Stations and encourage them to keep adding them throughout the province to help advance the public's use of zero emissions electric vehicles.

Yes. I urge BC Hydro to let the governments (BC & Fed) know that if it wants to see a serious change to EVs, Gov't needs to subsidize the utility so it can operate profitably at a price that still entices drivers to switch to EVs. If BC Hydro can not generate profits from installing fast chargers then the utility has no incentive to switch to an electric transport sector and the commitment to the Paris Agreement will fail. Charging rates profitable to the BC Hydro will be too high for consumers to want to switch to EVs. That's where government has to pick up the difference. Market forces then will help drive the change to electric transportation. Let's not forget that the hydrocarbon sector enjoys huge subsidies.
Sooke needs a fast charging station like colwood
Keep any of the costs low to promote the use of EVs in this province
Having to download multiple different apps and have different accounts is frustrating. Moving towards a simple tap credit card system would be much easier. I have used BC Hydro chargers that use two different apps (BCHydro and Greenlots). At least simplify this with only one app.
During the initial years, this program should be looked at as incentivizing the conversion to electric vehicles -- in much the same way as the Power Smart incentive programs were used to encourage conservation. The objective is to build a business and encourage electrification as rapidly as possible, not necessarily to make a profit -- that will come as utilization increases.
Label the stations with peak kW charging speeds. Jaffray BC is more like 16kW-19kW
Please keep Free till Mass adoption has occurred, please take costs from Residential Hydro Customer rates.
cost of charging should be near or slightly higher then level 2 household rate
More Level 1 & 2 in rural areas needed.
Per KWh pricing and you need min 4 100-150 kw chargers per location.
I would like my level 3 charging cost to be billed or added to my home BCHydro bill. Can our home level 2 charger be charged at a lower rate?
Don't start charging until you have a proper system and facilities in place. It will only discourage people from getting EVs.
BC hydro is also making money when people have to upgrade their hydro boxes at home . And they charge at home and it Should not be charged in public
Need to be able use a credit card. There will be out of country people will drive an EV from a friend etc. come up from the USA that does not have the right station card and are in a tough situation.
Continue to permit/promote private owned DC fast chargers (such as Greenlots), so there isn't a monopoly.
Have look at the Fair grid system in the UK and seek to partner with qualified vendors to set up the equivalent of "truck stop" service for the long distance EV driver. on major highways and communities in BC
Charging stations (especially in remote areas) should make every effort to avoid denying service in the face of technical obstacles, for safety reasons (avoid stranded drivers).
Add more chargers more stalls in convenient locations like Tesla Superchargers
Clearly EV adoption is an important piece of our GHG reduction puzzle - anything and everything possible should be done to encourage their adoption throughout the province.
At 0.20 to 0.25 $/min I won’t be using the chargers unless absolutely necessary. I suspect many others are the same. If this is the price point then I’d suggest expanding the network on highways and routes where charging is required. Adding extra chargers at existing sites would avoid having to wait for another user. Hwy 97 to Williams lake for example. Or Hwy 20 to Bella Coola.
I use my home charger mostly.. Only use fast chargers for travel - would like to see more as it makes EV travel reasonable. But the costs should encourage that travel. not discourage it compared to inconvenience and cost. Otherwise I will rent a gas or hybrid vehicle for long distance travel!

I had attended your most recent presentation. I believe you figures around ev cars in bc is high. I had seen a recent article that showed a 13% adoption. 65% of the evs in bc are tesla. So you are looking at around 9000 cars that could you this service. And the handful of Tesla that purchased the dc adapter. (50?). I think your consumer base is too low to charge a fee at this time. Even your presentation was based on a 20% utilization. To me, that does not sound like a viable business yet. I thank you for getting the infrastructure built early. But it would be better to charge a fee based on usage (kwh). I know there are technical hurdles to overcome. I'm sure you are aware that cars cannot charge at a constant rate. So even a 100kw charger will not be at a 100kw for the entire charge cycle. Depending on many factors, (state of charge, temperature, etc.), a battery will likely average 50% or less of the chargers stated rate. So I'm pretty sure not all time on the charger is equal. Which leads to a large difference of value the customer gets with time based billing.
The rate has to be slightly higher than the cost to charge at home
Thanks for installing more and more High Speed chargers throughout BC. Hopefully you will start to add more chargers at more popular locations where there are frequent wait times. Also Please add more 100 KW/Hour chargers as 50 KW Chargers are still slow compared to the new Electrify Canada stations offering 150 KW/Hour and even 350 KW/Hour as well as Petro Canada stations are now offering 200 KW /hour Stations. For EV adoption to really take off we need to look to the future especially when so many ICE vehicles only need approximately 10 minutes or less to fill up their tanks. EV drivers currently are getting a great deal when so many BC Hydro chargers don't charge anything and this is fine for promoting EV adoption and sustainable transportation but eventually it's only fair for EV drivers to pay for the electricity they use. Even if the total cost of the electricity, infrastructure and maintenance is covered including profit margin it's still significantly cheaper than gas or diesel.
In 100 mile House there is a charging station at the visitors information. In my opinion it is the best. It’s free fast no cards or Wi-Fi necessary. Just plug in press start and start charging.
Whatever the rate will be, I think it has to be low or free to encourage more new sales of EVs.
1) Work with the city and come up with a plan to help those who are struggling financially, perhaps a package that caters to the lower income families. 2) The rates must be cheaper than gas. 3) Offer promotions to residential and commercial buildings for installing or allowing EV charging at the buildings. 4) Offer promotional offers to general public.
Charging per kilowatt rates are more appropriate and equitable for all and should be a near-term goal.
Focus to increase utilization before setting price. Request merchants like Superstore to partly subsidize... people charging there are spending money at Superstore
There should be no difference in charging cost for us users whether we charge at home or at bc hydro charge stations. For bc residents the charges for using charge station should be added to the home hydro bill at same rates
Locations near shopping or food services would be very beneficial.
More level 3 chargers required
No
Once rates have been implemented, is it possible to view the usage and add more stations on high traffic charging stations? Is it possible to create a community forum, where BC Hydro and EV users can communicate and create an online community that’s moderated by BC Hydro? This would allow for community users to inject ideas, and also have an understanding why some ideas won’t/can’t work (power, funding, etc)
This relates to the presentation. The slides were comprehensive and easy to follow. The presenters should introduce each slide, explain the layout/components and any highlights. Unfortunately, they had a tendency to read the slides, word for word.
The rate should reflect the kms an EV gets/hr.
There is some speculation in the EV manufacturing industry that future vehicles will have only CCS ports and not CHAdeMO. Given the long expected life of existing EVs with CHAdeMO ports, it will be important to maintain these ports at BC Hydro charging stations for many years into the future.
should consider raising the 2nd level for homes as many of us are now in the 2nd level due to ev's. This would encourage more at charging causing less requirement for fast chargers.

People will pay for a premium for great service as long as they see value in it and superb service is consistent
EVs are particularly vulnerable to change that interferes with ability to recharge. If communication or connectivity issues occur, it could lead to serious consequences in many locations. Perhaps an emergency connection protocol is needed as the fee is implemented, and even to continue afterward, as travelling or new EV operators come into the market. Likewise, the safety of users is part of this consideration. I have encountered connectivity issues and was forced to return to a charging station many km back, that I had passed by believing that I would be able to use the more distant station.
I recognize the need to charge customers for using the fast charging service. However, at least until there is a critical mass of users, it seems very important NOT to be excessive in amounts. Hopefully BCHydro will not set rates on par with what we see private firms charging (i.e. Petro Canada).
I think if we are going to have to pay which is expected then we should be able to book a time to do that especially when traveling across the province
Id like it if bc hydro can keep the charging free or at least provide at home charging at a discounted rate.
It's imperative the DC Fast chargers (any charger) remain as functional as possible. The ability to waive tariffs for things like network problems would be highly desirable.
What's the point of offering electricity with software/app/internet support, yet not be prepared to secure it or protect it? BCH needs to address these issues as basic infrastructure. This is a good demonstration of the learning curve BCH needs to embark upon.
The question of the road maintenance tax included in the price of gasoline. It would only seem fair if EV owners paid for their share of the road
do not set to high as it will discourage usage. but needs to be more than home based charging to free up the stations for users that have long work commutes
The hourly rate should be different in the parts of BC that experience cold weather since the batteries need to warm up prior to charging. The fast charger should be place close enough together so that they can be reached with an 80 percent charge so that the cost of charging is reduced. Presently they are too far apart and I need a full charge to make the trip which would result in me paying almost as much to charge the last 20 percent as it was to charge up to 80 percent due to the decline in the rate of charge. Ideally if you could base the hourly rate on a certain range of charge rates that would alleviate the problem.
Charge for hosts for chargers as they encourage consumers to a location. Delay charging until Measurement Canada has provided standards for consumption billing. Recognize carbon pricing of "avoided pollution" in electric (clean) fuel pricing. Combined consumer billing that recognizes that home charging is frequently at step 2 rates even though we should be encouraging use of a renewable energy source. Therefore the rate could be reduced for offsite charging.
I think that this is a horrible mistake at this point. Given that an EV costs a good $10k more than equivalent ICE vehicles, any people earning less than the upper middle class could justify the increased up-front cost as a prepayment of the "fuel" required to operate the car. For example, when buying an ICE, you can assume that based on driving habits you'll spend at least $1,000 a year on maintenance and fuel which, over time, makes an ICE just as expensive as an EV. If you add a cost to charge stations, of which we already subsidize by paying for electricity, that mitigates the perceived cost advantage of EVs and thereby discourages EV adoption. Too soon, man, too soon. Maybe try shutting down that money pit at site C if you're interested in saving money.
Many of us only own our EV's and have to occasionally depend on the Hydro chargers
The second and third options in this question were confusing to me.
Please have the chargers more accessible closer to highway and restaurant. Trans Canada
The introduction of the Fast Charging Rate in a matter of a few months would cause a disastrous impact on the EV promotion in BC: potential EV drivers will be discouraged to consider EVs if the cost of charging+charging time sacrifice+frustration caused by long waiting lines at charging stations etc. The amount of charging stations should become equal to the amount of gas stations. Only after this goal had been achieved the talk about Charging Rate should be put into consideration. Charging EVs should be a convenience but not a burden. While charging at home is important and obligatory, it is only a partial solution for those drivers who make 300+ km driving per day.

Make fast charging service bill as tax credit.
it save on 'personal' info issues. Why not have the chargers just take visa by tap. Why do you need an account?
I believe credit cards should also be an acceptable form of payment. not everyone wants to have a different card or app.
During the webinar I got the impression the application would set the rate for three years. It is unclear to me what happens if Measurement Canada certifies kwhr billing well before the three years are up. Does that mean we are stuck with time service rate charging for a minimum of three years? or could you shift to kwhr billing as soon as it is approved? Given there is a substantial preference for charging based on kwhr usage can you make your submission a two part one: time rate now and kwhr rate as soon as Measurement Canada gets their job done?
EV drivers should be able to drive seamlessly around the province and country EV drivers should not have to download an app to use charging stations. All charging stations should have credit/debit card readers, no matter which charging jurisdiction the “stations” are located Please ensure that the provincial charging grid is simple
Please ensure all stations within your network are operating properly. If one station is down (as was the case in Duncan last summer), it should be repaired asap. The stations should be easily accessible from main roads and highways throughout the province.
I live within 2 blocks of a charge station, but always use my level 2 charger at home unless I am on an out-of-town trip that require me to use a public charger. Increasing the cost at public chargers after an 80% charge has been reached is reasonable and should in theory reduce charger hogging and wait times. However, this should be done only after enough public chargers have been installed that it is possible for a relatively low capacity vehicle to reliably reach the next public charger on the highway system.
Think about this: tesla superchargers right now cost around $12 for 30 min, which allows to fill 80% of the battery because it is a 150kw charger. For 30 min at BC Hydro at 50kw rate I get only 40% of battery.... I would not pay more than $6 for this.
For long distance trips, there needs to be more chargers available, and they need to be reliable. Charging adds hours to long distance trips if you have to wait for others to use a small number of chargers.
It is very important to EV owners to have access to plentiful DCFC options for highway trips in key rural communities based on their location. For example the fast charger in tiny Spences Bridge is a regionally important location for some folks travelling long distance from A to B.
Please stop Site C development. It is a very bad use of our finances and violates treaties our ancestors signed.
Colder weather means batteries take less electricity at a time. Rates should reflect rate of charge, and 25kW is sufficient for cold-weather charging which is why I suggested L2 chargers be upgraded to 25kW. Oftentimes, I'd prefer 2x 25kW chargers vs 1x50kW. Allowing more vehicles to charge is more important in urban areas and places with many amenities, where 50kW and 100kW should be provided in rural areas which attract mostly stopover traffic.
Provide quicker charger login and activation like Bluetooth connection automatically as we drive up with our phones.
Many EVs are still sold without plugs for Level 3 DCFC EVSEs and can use only Level 2s. This should be considered when planning future rollout.
BC Hydro should cut the fat of administration and not profit the chargers. FLO is a disaster. Their profits are almost criminal. $20 an hour in Alberta is ridiculous. $4.00 of power for $20 is $16 profit if car accepts 50 kw. Summer max is usually 48 to 49 kw/h and winter is in the 30s. Kw used pricing would solve the problem? I was surprised at pricing as an email about a month ago was suggestions between 0$ and 9$ per hour, but now it looks like much higher. At home, my charge costs are less than $8.00 for full charge and should be only slightly more at public stations. For traveling, costs have to be kept down to keep ev purchase a positive option and not more expensive than buying an ice vehicle that fills in 10 minutes and if needed can carry extra fuel for emergencies. High price charging may reverse the demand for evs.

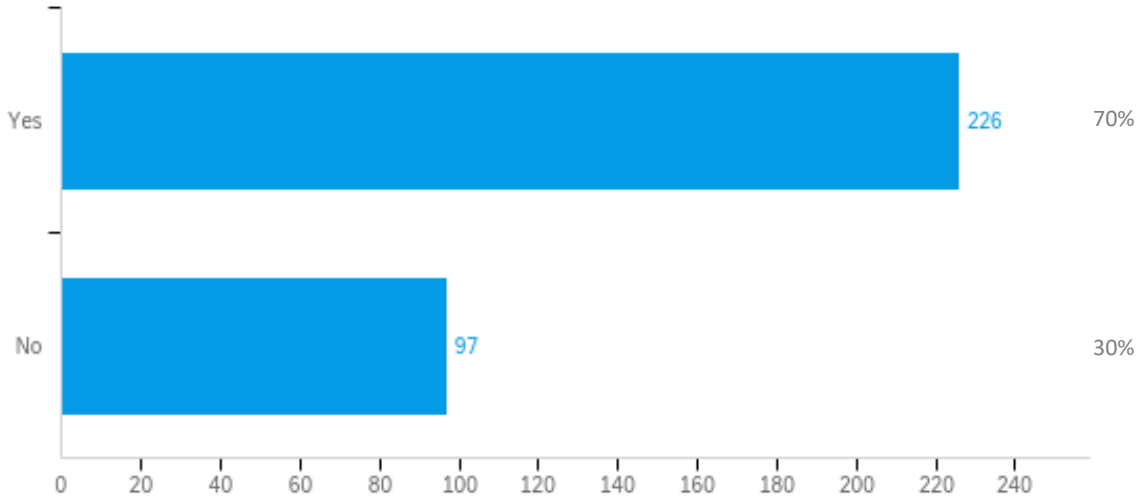
This may not be part of your specific application. But in general BC Hydro should provide lower cost charging rates for home EV charging. Most EV's have the ability to set the time when they charge. Perhaps somehow a lower rate between midnight and 7am. This is likely when there isn't much demand on the hydro network. It would also even out demand rather than have all the EV's charging during peak energy consumption times
No, when fees come in I will likely very rarely use the BC Hydro EV charging network
don't know the intricacies of an application for a service rate but a phase in period may be useful so that current users and the new ones that arrive daily can get used to the levy -- it is pretty seamless now since I expect we all have had to set up a card account with an initial deposit.
EV adoption rates are still very low. It's too early to put market rates on public charging. As a society let's subsidize public charging until EV adoption rates are higher.
Two level rate: one to partially recover operating costs by KWh - similar to residential rates, the other, a connect fee, to partially recover capital and deter long inactive connect times.
It is paramount that BC Hydro maintain the charging stations it operates so they are reliable and any service interruptions are quickly remedied. This is particularly important in rural and remote areas. If at all possible, the BC Hydro app should reflect the status of BCH charging stations in real time, so if there are service interruptions, the faulty units are immediately identified on the app. EV drivers rely on charging stations being fully operational in the same way that ICE drivers rely on gas stations.
Get more chargers in place ASAP. I care far less about the rates (up to a point) than a functioning infrastructure that can handle the demand without making EV drivers wait every time they go to a station. Making me wait 40 minutes to charge at your stations or have me find that your stations are broken is far more of a problem than whether you charge $0.20/minute or $0.25/minute.
Charger service should remain subsidized for some time yet in order to encourage more people to switch to EVs.
That last question was incomprehensible
to promote EV growth in BC the rate should incentivize people to use our public stations. The price point should be similar to that of the customer wanting to charge at home.
Charge by kWh, not minute.
for residential level 2 charges, this level should be raised due to charging at home and using more electricity. if home charging rates are lower, would encourage charging at home. consider placing chargers every 200km so that there are options to travel around BC
Price similarly to other providers so as not to be too high and lose out on business. PetroCan about .27/minute.
Include time of use provisions to pricing to encourage utilization off peak. Ensure it is clear how much parking costs contribute to pricing.
You haven’t asked about ways to minimize lineups. If you cannot charge per minute of use then you have to implement some kind of a power shut off so that nobody stays at a fast charger for longer than 20 or 30 minutes. This is one incentive for your charging in the first place. People should charge at home overnight when they can instead of relying on free public power.
Fast chargers are the way to go. I think there should be a tier system 1hour or 1/2 is free and then charge after that based on consumption. That gives everyone an incentive and keeps the chargers available
Please make more stations available
Please try to focus DCFC installations out of major city areas to encourage people to do the majority of charging at home. Currently many EV drivers are over dependent on public DCFC charging, because it’s free. DCFCs should be used when going on long trips, and not intercity driving.
As before, charge for energy purchased, not the time it takes to purchase it. you don't pay more at a gas pump because it has a bigger nozzle. Charging per kWh delivered is best. Faster chargers, more customers charging per hour. It's a simple equation.

Make EV's the most attractive thing possible abs usually money takes people fear away from range anxiety. Climate change due to carbon emissions is the biggest threat to humanity today. Why won't your organization which is a crown corporation try some social engineering that benefits all. Stores do it with bags and bulk foods, police with seatbelts abs driving under the influence. Work with Victoria to make this happen.
It is important that it is NOT BC Hydro's job to subsidize EVs. If the government(s) wish to sponsor BC Hydro (and potentially others) then that is fine but why should non EV users subsidize EVs. Also why should public EV charger users have access to 'free electricity' when home charging users have to pay full price? You should also look into the idea of leveraging smart meters to allow differential rates for home-based chargers to match what public chargers end up offering. Consider the option of a charging rate based on current % utilization at an individual station - so charges would be higher during busy periods, encouraging quick turn-around and more fair access. Whilst rates could be lower during quiet times - encouraging non-home-owners to charge their EV's at less busy times.
i would like the kwh I use at the BC Hydro fast charger to be added to my home account and receive only one bill of the combine consumptions. Price should follow the pricing currently in place on BCHydro account (level1 and 2) Perhaps a monthly fix fee for using fast charger to support the maintenance
Charge per KWH!!!!! And mark it up 25% over normal rates for the area. Then charge per minute after the vehicle has charged more then the max time limit for the charger!
Make sure that the phone-in help line remains fully operational at each charging station
Could BC Hydro look at lower rates for off-peak charging? This is done in Ontario. It would allow people to choose to charge at a cheaper rate and free up "prime time" charging to increase overall usage. If this applied to home usage it would likely increase the overall number of EV drivers.
Thank you for your charging stations and the excellent service.
EVs have a higher cost than non-EVs, even base models. The higher costs are an adoption impediment. Range anxiety is another adoption impediment. Whatever model is chosen, it must eliminate these and any other adoption impediments.
I would like to see pricing based on kWh used. That's how you bill me at home. I also would like BC Hydro to consider a tiered rate for home use. That will promote users to charge their cars at home at a cheaper rate between 1100pm - 0500am. We pay .09 cents a kWh to a point and then it jumps to .12 cents. A cheaper after hours rate would have me charge at home more often
Per minute charging is inherently unfair because the charger or car may not be able to accept full charge power at all times and temperatures. Almost everyone agrees per kWh rates are best. BC Hydro should do whatever it can to make charging rates as close as possible to per kWh. If BC hydro cannot have kWh metering, there should be multiple per minute rate tiers to simulate kWh billing: eg (0-10 kw; $0.05 per minute, 10-20 kw; $0.10 per minute, 20-40 kw; $0.20 per minute) and so on. This could be user selectable at the charger or in the app. Tesla superchargers do this with two tiers but more tiers are better. Also, the ideal rate should be the same as the home charging residential rate to make it fair for those who do not have access to home charging. It is ironic that we don't have kWh metering while we wait for an accurate method to be approved. While we are waiting, were are forced to have inaccurate billing with per minutes rates!
Not everyone with an EV has a garage or carport where they can install a charging station. And in my building it will take a while before the owners are willing to install 1 or 2 charging stations. Public charging stations are important at home as well as while travelling.
As my vehicle maxes out at 35 kw for charging, the difference between 50 and 100 kw chargers is not relevant to me. Of more interest is the ability to pay for kwh with some incentive (or disincentive) to move off the charger quickly
Please keep level two chargers at sites. They provide a way to charge, when busy also if chargers are down
keep increasing charging infrastructure
If the priority is to encourage EV users then keep the rates as low as possible
It is worth keeping in mind that we have climate targets to meet and we are only just in the early adopter phase of EV charging therefore we need to err on the side of accessibility for now.

Make vend free option standard so it's plug and play without fiddling after a long drive. Make it as easy as possible so we can all have clean future.
Please make this service affordable.
Please make sure to include per kWh pricing and variable pricing based on time of day
25kw stations are probably more appropriate for aging CHAdeMO vehicles and keeping the 25kw stations as CHAdeMO only versions would keep larger battery vehicles from using it to reduce their cost if they are not in a hurry.
So long as there's always an RFID card reader on the charging station, it's all good. I don't rely on phone-based apps because they're just too unreliable and slow...I always use my RFID card because it always works and it's the fastest authorization method. I just keep my assorted collection of cards in the car on my sun visor - BC Hydro card, ChargePoint card, FLO card, etc.
Faster is better... focus on remote locations and leave urban centres to the private sector. Go where the private sector will not that mandate in my opinion as a public utility.
An application for a rate is not a wise idea at this time. The priority should be encouraging EV adoption. Seek political guidance before making an application to charge money. Reducing the utilization of EV charging stations is not a good idea. Discouraging EV adoption is also unwise. Wait until there is much greater adoption before trying to add a fee. No cost EV charging is one of the most effective ways to encourage EV adoption.
BC Hydro EV stations should adopt the most common connection type for EVs being sold. I am not certain the CHAdeMO connection type is the most common at this time.
The rate should be variable to ensure that it is always reflective of the price of gas and diesel. The rate should not be more that 50% of the cost of gas or diesel until such a time that EV charging is as readily available and as fast as gas or diesel options.
Please make sure that this is done in conjunction with the introduction of time of use billing for home services or other “EV specific” rates because as it stands now most EV users are being pushed into higher rates thanks to the tier 2 system and adding more fees for the DCFC seems punitive
Level 2 devices should be made available at all DCFC locations until there is adequate redundancy of DCFC units to ensure reliability. Too often, a DCFC location is down without prior notice and the driver is left scrambling to find an alternate charging option, often with little charge remaining in the battery. A Level 2 as a backup would be valuable and would also allow 'topping off' the battery while allowing another driver to connect to the DCFC unit.
While I have a charger at home and use that for most of my charging needs, sometimes I need to charge public. I live in Surrey/Cloverdale and there are so few level3 chargers available (that aren't part of a dealership) that it's frustrating. Would like more charging options. Would like chargers at grocery stores and the mall (maybe lower 25kW chargers and several available)
Compare your fees to Tesla superchargers or people will be deterred from using your stations.
People with bc hydro accounts (a bc hydro bill for their residence, should not be charged anything as they have through their regular rates, paid for the system. All others should be charged an appropriate rate. Additionally, plug in Hybrids should never be allowed on the network as they have gasoline engines.
Please keep in mind that people purchasing EVs now are leading the change from fossil fuels to less carbon intensive modes of transport so they should be encouraged and rewarded for this.
Osoyoos could use a second fast charger. It's a natural stopping point, and people could be stuck if the one charger is out of service.
I have already commented at length a few steps back on why I disagree with charging by the minute, rather than by the unit(s) of energy sold (kWh). In my experience, private sellers use by-the-minute charging only and since they do not display kWh's purchased, have managed to pretty well conceal the more-than-healthy mark-up they are adding to the energy they sell. I have done some investigating on my own into this matter and based on the information I've managed to access, it appears they are retailing electricity to EV drivers at an approximate mark-up of 1000%.

Per kWh pricing is the most fair. This is the case on faster stations like the 100 kW systems. Someone who drives a first generation Nissan Leaf or Mitsubishi iMiev, cannot utilize the benefits of a 100kW station. If there were 25 kW or 50 kW stations located at the same site as the 100 kW stations, there is choice for the early adopters. This is not the case currently and therefore a time based system is not equitable for older EV owners. Eventually, this will not be an issue, but for at least the next decade, paying per kWh is the best option in my opinion.
Oil and gas companies in Canada currently receive $600 million in non tax related subsidies, and an estimated $1-5 billion in tax related subsidies. Keeping those subsidies while removing an incentive to use electric vehicles seems asinine, backwards, and completely antithetical to the government's stated objective of encouraging the adoption of clean transportation.
Build for the future not yesterday. Build more chargers at each charging location. Two chargers at each location is an absolute minimum, we should really be looking at three or four chargers at each location.
In the longer term, charges should be per kWh, not time. I understand the issue with Measurement Canada. I suggest hybrid options, with higher rates per kWh for faster chargers, and rates rising after 80% charge is reached.
Please be sure to make your rate competitive compared to other third party charging solutions (Tesla supercharger).
Thank you for a great presentation
Is it possible for government to receive a fee from electric car manufacturer to supplement the cost of building charging station, and keep the charging rate to a minimal? If the cost is not reasonable, then no one will use it, and then it would be pointless to build it. I have pay an upfront premium for my EV, expecting to a large saving in the long run as the EV is advertised to “the money you save vs using gas is enormous”. This statement is starting to become false if the rate suddenly go up by a lot. The biggest incentive for people to buy EV would diminish.
Hybrid model for charging. Fees go up for 80+ % and even higher for idol fees. Need to provide service for as many people as possible and if full charge is needed for a trip etc. User can decide how important it is once they reach tear 2 rates above 80%. The issue with free or low rates is that plugin hybrids use fast chargers which charge at a slow rate for minimal kilometres. Ex. 40 km range and plugged in for 30 minutes.
BC Hydro is a publicly owned utility. It should use this unique status to ensure that there is equity for all EV owners to charging fees that are equivalent to charging at home. The proposed $0.20/minute fee does not do this. It is multiples of what charging at home costs. In addition to the equity issue is that we are facing a climate crises and we should be doing everything possible to reduce carbon emissions. Keeping charging costs down to encourage EV ownership should be part of our fight to save the planet from global warming.
We need kwH based rates and not time-based ASAP. Too many slow charging EV's hog a lot of charging time and that is not fair use.
The previous question should allow a “None” response, which is what I would have answered. If BC Hydro is providing EV Charging Services, then you better have adequate communications, and app/web security (two-step verification...hello?!), and security cameras to monitor the sites and reduce vandalism. Show some initiative and pride in your charging stations, and people will respond accordingly.
Please look at the bigger policy and climate change emergency tackling measures and issues before actually implementing DCFC charging. And if the NDP or BCUC is forcing you to implement charging now, of all times, then keep the rates extremely low, especially on highway routes, to encourage EV uptake. by those with "range anxiety".
I have posted my feedback on the suggested rate structure in the previous fill-in form. I am disappointed that you did not provide choices for per kWh rates, just for the per minute rates. I live in an older condominium building that does not (and is not planning to) have EV chargers, so I am forced to use public EV charges. This puts me in a disadvantage relative to homeowners who have onsite chargers and can pay much less for their use per kWh.
The rate should be the Kwh charged. That is the most fair and just like we do at home.

Q9 Are you interested in participating in the regulatory process related to the fast charging service rate?



Q10a Your contact information (first name and last name):

<Deleted due to privacy>

Q10b The organization you represent (if applicable):

Prince George Electric Vehicle Association
Pica Communications
Twin Rainbows Housing Co-operative, Green Committee
Member of several EV associations, but not a representative or spokesperson
Member of Vancouver Electric Vehicle Association
VEVA
Cascadia Ecohomes Ltd.
Comox Valley Electric Vehicle Association
Vancouver Electric Vehicle Association
City of Vancouver
Canadian Manufacturers and Exporters
Evolving Health Sho
Mid Vancouver Island Electric Vehicle Association
Weimer Consulting Inc.
Backup Renewables
Perron Electric

Member of VEVA (Vancouver Electric Vehicle Association)
CBC / Jason Byers
traveling seniors
Vancouver Electric Vehicle Association
Transfer to Digital
Electrum Charging Solutions Inc
SkeenaGraphics LLC
Underground Electrics
Modo Co-operative
DG Communications
Alphabets Business Innovation LTD
BCH
DragonSun Consulting
Kamloops Electric Vehicle Owners (Facebook Group)
Jewesson Consulting Ltd.

Q10c Your email (provide only if you would like a response to any of your questions or if you're interested in participating in the regulatory process):

<Deleted due to privacy>

BC Hydro
Power smart

BC Hydro Public Electric Vehicle Fast Charging Rate Application

Appendix G

Order in Council No. 339

PROVINCE OF BRITISH COLUMBIA

ORDER OF THE LIEUTENANT GOVERNOR IN COUNCIL

Order in Council No. 339 *, Approved and Ordered* June 22, 2020

Lieutenant Governor

Executive Council Chambers, Victoria

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and consent of the Executive Council, orders that the Greenhouse Gas Reduction (Clean Energy) Regulation, B.C. Reg. 102/2012, is amended as set out in the attached Schedule.

Minister of Energy, Mines and Petroleum Resources

Presiding Member of the Executive Council

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section: *Clean Energy Act*, S.B.C. 2010, c. 22, s. 35 (n)

Other: OIC 295/2012

R10362917

SCHEDULE

1 The Greenhouse Gas Reduction (Clean Energy) Regulation, B.C. Reg. 102/2012, is amended by adding the following section:

Prescribed undertaking – electric vehicle charging stations

5 (1) In this section:

"eligible charging site" means a site where one or more eligible charging stations are located;

"eligible charging station" means a fast charging station that

(a) is available for use 24 hours a day by any member of the public,

(b) does not require users to be members of a charging network, and

(c) is capable of charging electric vehicles of more than one make;

"fast charging station" means a fixed device capable of charging an electric vehicle using a direct current;

"limited municipality" means a municipality with a population of 9 000 or more;

"site limit", in relation to a limited municipality, means the number calculated by

(a) dividing the population of the municipality by 9 000, and

(b) if applicable, rounding the quotient up to the nearest whole number.

(2) A public utility's undertaking that is in a class defined as follows is a prescribed undertaking for the purposes of section 18 of the Act:

(a) the public utility constructs and operates, or purchases and operates, an eligible charging station;

(b) the public utility reasonably expects, on the date the public utility decides to construct or purchase an eligible charging station, that

(i) the station will come into operation by December 31, 2025, and

(ii) if the station will be located in a limited municipality, the number of eligible charging sites in the municipality on the date the station will come into operation will not exceed the site limit for the municipality on that date;

(c) if an eligible charging station comes into operation on or after January 1, 2022, the station uses or is configured to use the Open Charge Point Protocol.