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July 5, 2021

Sent via email/eFile

**BC HYDRO PUBLIC EV FAST CHARGING RATE APPLICATION  
EXHIBIT A-9**

Ms. Suzanne Goldberg  
Director, Public Policy – Canada  
ChargePoint  
[suzanne.goldberg@chargepoint.com](mailto:suzanne.goldberg@chargepoint.com)

**Re: British Columbia Hydro and Power Authority – Public Electric Vehicle Fast Charging Rate Application – Project No. 1599190 – Information Request No. 1 on Intervener Evidence**

Dear Ms. Goldberg,

Further to your June 24, 2021 filing of intervener evidence in the above-noted proceeding, enclosed please find British Columbia Utilities Commission Information Request No. 1 on ChargePoint's intervener evidence. In accordance with the regulatory timetable, please file your responses on or before Wednesday, July 14, 2021.

Sincerely,

*Original signed by:*

Patrick Wruck  
Commission Secretary

LC/jb  
Enclosure



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

**INFORMATION REQUEST NO. 1 TO CHARGEPOINT ON CHARGEPOINT'S EVIDENCE**

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- 1.0 Reference: City of Vancouver Data  
Exhibit C4-3 (ChargePoint's evidence), Tables 1, 3, p. 3  
British Columbia Public Light-Duty Zero-Emission Vehicle Infrastructure Study<sup>1</sup>,  
dated May 2021  
Exhibit A2-3, Geotab Energy, EV growing pains: The evolution of electric vehicles and  
their growing impact on the electric grid<sup>2</sup>, dated April 22, 2020  
Utilization Rates**

On page 3 of ChargePoint's evidence, it states that the City of Vancouver (CoV) owns and operates "nine DC fast chargers..." It also states:

Across a fleet of eight of the CoV's DC fast chargers, the CoV has reported that average capital and operating costs per site (with two stations per site) are \$324,359 and \$941 per month, respectively. The CoV has also reported that utilization has been 172 sessions per month, on average, to date.

Footnote 3 in ChargePoint's evidence provides a map of the charging stations that are owned by the CoV, which shows five EV fast charging sites.<sup>3</sup>

- 1.1 Please confirm, or explain otherwise, that the data presented in tables 1 to 3 of ChargePoint's evidence represents 8 out of the 9 electric vehicle (EV) fast charging stations that are owned and operated by the CoV.
- 1.2 Please confirm, or explain otherwise, that the CoV owns and operates EV fast charging stations at five charging sites.
- 1.2.1 If confirmed, please explain why ChargePoint did not include the data from the fifth site in its analysis.

On page 3, Table 3, of ChargePoint's evidence shows the average monthly sessions for each of the four sites, which represents an average monthly utilization of 172 sessions for all sites.

- 1.3 Please discuss whether the CoV's EV fast charging stations are available for public use 24 hours a day and 7 days a week.

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<sup>1</sup> [https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/bc\\_public\\_ld\\_zev\\_infrastructure\\_study\\_final\\_20210505.pdf](https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/bc_public_ld_zev_infrastructure_study_final_20210505.pdf)

<sup>2</sup> <https://image.info.fleetcarma.com/lib/fe321171716404797c1674/m/1/002159cb-9dd1-42d9-bb22-620882710895.pdf>

<sup>3</sup> <https://vancouver.ca/streets-transportation/electric-vehicles.aspx>

- 1.4 Please provide the average utilization in percentages for the CoV’s EV fast charging stations. In other words, what percentage of utilization does 172 average monthly sessions represent?
  - 1.4.1 Please provide the start and end month/year to calculate the average monthly utilization of 172 sessions.
  - 1.4.2 If available, please provide the utilization expressed in both monthly sessions and percentages by year.

On page 3, Table 3, of ChargePoint’s evidence shows site utilization ranging on average from 142 (at site number 3) to 247 (at site number 1) monthly sessions (a difference of 74 percent<sup>4</sup>). Table 3 also shows the “Demand Charge Proportion of Revenue” (i.e. demand charge divided by revenues) as 67 percent for site number 3 and 71 percent for site number 1 (a difference of 4 percent).

On page 3, Table 1, of ChargePoint’s evidence shows monthly demand charges of \$451 for site number 3 and \$464 for site number 1 (a difference of 3 percent<sup>5</sup>).

- 1.5 Since utilization does not appear to have a significant impact on demand charges (i.e. a 74 percent change in utilization results in a 3 percent change in demand charges) or on the demand charge proportion of revenue (i.e. a 4 percent difference), please discuss how the “high costs associated with demand charges, especially when utilization is low, can impact EV charging investment decision.”

Further on page 3 of ChargePoint’s evidence, it states: “Given the current rate of station utilization, the CoV’s fee to drivers cover, on average, 81% of its operating costs; this data point does not include amortized capital cost.”

- 1.6 Please provide the average costs that the CoV’s EV charging revenue would recover if the depreciation expense for the capitalized EV fast charging station costs are included.

In the BC Public Light-Duty Zero-Emission Vehicle Infrastructure Study dated May 2021, the BC Government provides the following assumption regarding fast charging power output by year:

Historically, fast charging deployments have largely used chargers with 50 kW of output power (although some 25 kW chargers have been installed in the province, as indicated in Appendix A), aside from Tesla beginning with 90 kW chargers in 2014 and increasing since then.

*Table 2. Assumed fast charging power output by year*

	2020	2025	2030	2035	2040
Assumed Fast Charging Output Power (kW)	75*	100	150	250	300

*\* While much of the public charging infrastructure deployment currently planned for 2020/2021 still focuses on 50 kW units, the power levels in this table represent the average of all ports deployed within the province, including those deployed by industry at power levels much higher than 75 kW.*

If the typical output power of fast charging infrastructure were to exceed these assumptions, that could drive a decrease in the total number of ports needed and vice versa.

<sup>4</sup> (247 – 142)/142

<sup>5</sup> (\$464 - \$451)/\$451

On page 14 of the April 2020 Geotab Energy Report (Exhibit A2-3), it states:

The impact EVs have on the grid, particularly this risk they pose to damaging distribution assets, has changed dramatically over the last 5 years. Long-range BEVs are very different from older electric vehicles: they are driven more, they consume more energy, they draw power at a higher level and they are less predictable. As the fastest-growing vehicle type, long-range BEVs continue to represent a larger proportion of new EV sales.

- 1.7 To the best of ChargePoint’s knowledge, please discuss how the CoV ensures that its EV charging station technology is kept current and competitive with other service providers. As part of the response, please discuss how the CoV accounts for the disposal and retirement of its EV charging equipment if it becomes obsolete sooner than expected.
  - 1.7.1 Please indicate whether the CoV operates any 100-kW charging stations. If not, to the best of ChargePoint’s knowledge, does the CoV plan to install 100-kW stations in the near future?
- 1.8 In ChargePoint’s view, what factors should an EV fast charging service provider consider when making future investments and deploying EV charging stations. For example, how should such a provider consider the two studies above, if at all?
  - 1.8.1 Please discuss whether these considerations would be similar for a non-exempt utility service provider (e.g. BC Hydro) and all other service providers (e.g. CoV and Petro-Canada). Why or why not?

**2.0 Reference: City of Vancouver Data  
Exhibit C4-3, Table 1, p. 3  
Capital and Operating Costs**

On page 3, Table 1, of ChargePoint’s evidence is produced below:

**Table 1: Capital and Operating Costs**

Site #	Capital Costs			Operating Costs			
	BC Hydro Connection Fee	Construction, Other Capital	Total Capital	Electricity Consumption (monthly)	Demand Charge (monthly)	Other Opex	Total Opex (excl maintenance)
1	\$193,468	\$198,846	\$392,314	\$322	\$464	\$150	\$936
2	\$2,818	\$305,731	\$308,549	\$295	\$428	\$150	\$873
3	\$31,888	\$262,921	\$294,809	\$235	\$451	\$150	\$836
4	n/a	\$301,764	\$301,764	\$522	\$448*	\$150	\$1,119

\* Demand charge estimated based on average of other DFCs - not available through sub-metering; Consumption cost estimated from energy use (not billed directly)

- 2.1 To the best of ChargePoint’s ability, please explain why there is a large range in BC Hydro connection fees for each site (i.e. from \$2,818 to \$193,468).
- 2.2 To the best of ChargePoint’s ability, please explain what the \$150 per site “Other Opex” expense is for.
- 2.3 To the best of ChargePoint’s ability, please provide the total operating costs when maintenance expense is included.
- 2.4 To the best of ChargePoint’s ability, please indicate whether the operating costs include any network management services for items such as payment processing fees and customer support. If so, please specify. If not, please explain why this cost item is not included in the table above.
- 2.5 To the best of ChargePoint’s ability, please indicate whether the capital costs include site preparation costs. If so, please quantify.

- 2.6 To the best of ChargePoint’s ability, please indicate whether the capital costs include costs to make the sites wheelchair accessible. If so, please quantify and discuss whether it is the CoV that pays for these costs.

**3.0 Reference: City of Vancouver Data  
Exhibit C4-3, p. 3; Exhibit C20-4, pp. 7-8  
Revenues**

On page 3 of ChargePoint’s evidence, it states:

The CoV also charges a fee to drivers for its DC fast chargers, which vary by both location and utilization, as outlined in the CoV’s June 20, 2017 Administrative Report RR-1(d) 6; these rates typically vary from \$0.21/minute - \$0.24/minute, but are periodically adjusted up or down to encourage utilization and turnover.

Given the current rate of station utilization, the CoV’s fee to drivers cover, on average, 81% of its operating costs; this data point does not include amortized capital cost.

On the CoV’s website,<sup>6</sup> it states:

Fees are designed to promote turn-over and ensure that plugs are available to those who need them. Prices are kept as low as possible to support access and promote sharing.

We charge a time-based user fee at most charging points on City properties. Fees are blended with parking rates at on-street locations. Off-street locations require payment both at the charging station and at the parking meter.

Rates are adjusted at each location over time. Since their introduction in 2017, fees at many locations have been reduced, although some have been increased at the highest demand locations. Current rates are listed on each charging station.

Further, it states that the rate for the DC fast chargers is “\$0.26 per minute, plus any applicable parking fee.”

- 3.1 To the best of ChargePoint’s knowledge, please discuss how often the CoV adjusts its rates at each EV fast charging site.
- 3.2 Please reconcile the rates of \$0.21 to \$0.24 per minute stated in ChargePoint’s evidence and the \$0.26 per minute stated on the CoV’s website.
- 3.2.1 Please indicate whether the rates of \$0.21 to \$0.24 per minute (or \$0.26 per minute) are inclusive of goods and services tax (GST) and provincial sales tax (PST). If so, please indicate the pre-tax rates per minute, so they are comparable to BC Hydro’s Proposed Rates.
- 3.3 To the best of ChargePoint’s knowledge, please discuss how the CoV determined its rates of \$0.21 to \$0.24 per minute (or \$0.26 per minute) for EV fast charging. For example, are the rates based on the rates charged by its competitors or are they set to enable the recovery of certain costs or percentage of costs?

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<sup>6</sup> <https://vancouver.ca/streets-transportation/electric-vehicles.aspx> [Retrieved on June 28, 2021]

- 3.4 To the best of ChargePoint’s abilities, please provide the rates per minute to recover, on average, 100 percent of the CoV’s operating costs (i.e. to break-even), before the inclusion of depreciation expense.
  - 3.4.1 Please provide the rates per minute to recover, on average, 100% of the CoV’s operating costs including depreciation expense.
- 3.5 To the best of ChargePoint’s knowledge, please discuss whether BC Hydro’s proposed rates for public EV fast charging service impact the CoV’s rates for providing public EV fast charging service. If so, please elaborate and quantify (if possible) what the CoV’s rates would be considering that BC Hydro offered free direct current (DC) fast charging in the past and implemented fees as of May 1, 2021.
- 3.6 Please indicate whether the rates charged by the CoV differ by the DC fast charging station’s power capacity (e.g. 50 kW vs. 100 kW stations).
- 3.7 Please provide the power level (e.g. 50 kW) of the stations at each of the CoV’s sites (i.e. sites no. 1 to 4 as presented in tables 1 to 3 of ChargePoint’s evidence).
- 3.8 Please confirm, or explain otherwise, that the CoV’s current or past rates for EV fast charging are all charged at \$ per minute, and not \$ per kWh.
  - 3.8.1 If any of CoV’s current or past rates include any component that is \$ per kWh, please indicate how this energy-based rate was implemented considering the lack of Measurement Canada accredited DC meters.
- 3.9 Please confirm, or explain otherwise, that the CoV’s current or past rates for EV fast charging do not include idling fees.

On pages 7 to 8 of Suncor’s intervener evidence in Exhibit C20-4, Suncor states:

In Suncor’s experience, the information and data collected from the Langley Station is a fair representation of a typical Suncor EV charging site located in BC. This evidence demonstrates that:

[...]

- not all energy consumed at an EV charging site is billed to an EV driver – the power draw related to power towers and charging equipment can be up to 2-4x the electricity actually sold to a consumer – this is not specifically identified or adequately considered in BC Hydro’s utility cost recovery calculations. [Emphasis added]

- 3.10 To the best of ChargePoint’s knowledge, please discuss whether the CoV’s fast charging stations experience similar circumstances as Suncor in that the power draw related to power towers and charging equipment can be up to 2-4x the electricity actually sold to a customer. If the CoV experiences a different level, please specify and explain.
  - 3.10.1 Given the level of difference between power draw and the electricity sold to a consumer, please explain whether ChargePoint believes that this ratio is applicable to all DC fast charging operators in BC, including BC Hydro’s fast charging stations.

**4.0 Reference: Demand Charge Exhibit C4-3, pp. 4–6; BC Hydro Fleet Electrification Rate Application Proceeding, Reasons for Decision dated March 26, 2020 to Order G-67-20,<sup>7</sup> p. 3 Demand Charges for EV Service Providers**

On page 6 of ChargePoint’s evidence, it states:

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<sup>7</sup> [BC Hydro Fleet Electrification Rate Application, Reasons for Decision dated March 26, 2020.](#)

In ChargePoint's experience, high costs associated with demand charges, especially when utilization is low, can impact EV charging investment decisions. Several utilities in North America have addressed barriers associated with traditional demand charge rate structures by designing EV-specific rates to encourage EV investment, while balancing utility costs and rate payer interests. Introducing EV-specific rates to support municipal and private sector DC fast charging investment in BC for non-fleet stations, similar to what BC Hydro has introduced for fleets, would remove a barrier to DC fast charging investment in the province.

In the Executive Summary of the Reasons for Decision to BC Hydro's Fleet Electrification Rate Application, the BCUC approved two new optional services:

- 1) An Overnight Rate - intended for in depot and overnight charging of electric fleet vehicles and vessels, effective as an ongoing rate as of April 1, 2021; and
- 2) A Demand Transition Rate - designed for in route charging during fleet operating hours, effective as a time-limited rate from April 1, 2020 to March 31, 2032.

The Executive Summary also states:

Absent a new rate design, the anticipated load associated with charging fleet vehicles or vessels would be billed under BC Hydro's Large General Service Rate. BC Hydro states that potential fleet charging customers, such as public transit providers, have indicated that the Large General Service Rate demand charge is a barrier to converting their fleets to electric operation.

[...]

The Demand Transition Rate will be effective as a time-limited rate from April 1, 2020 to March 31, 2032. This rate is designed for in route charging during fleet operating hours where vehicles will charge for approximately 10 minutes at stops on a route equipped with chargers. No demand charge applies for the first six years that the Demand Transition Rate is proposed to be offered, after which the demand charge transitions to the Large General Service Rate demand charge over a subsequent six-year period.

- 4.1 Please clarify whether BC Hydro's Overnight Rate or Demand Transition Rate, would eliminate the investment barriers for site hosts, such as the CoV.
  - 4.1.1 Please quantify the financial impact to site hosts, such as the CoV, if an Overnight Rate similar to the rate approved for BC Hydro was offered. As part of the response, please discuss whether it would result in the charging sites recovering at least their full cost of providing the service (i.e. break-even) holding all else equal (i.e. the rate or price charged by the CoV is unchanged). Please provide any assumptions used.
  - 4.1.2 Please quantify the financial impact to site hosts, such as the CoV, if a Demand Transition Rate similar to the rate approved for BC Hydro was offered. As part of the response, please discuss whether it would result in the charging sites recovering at least their full cost of providing the service (i.e. break-even) holding all else equal (i.e. the rate or price charged by the CoV is unchanged). Please provide any assumptions used.
- 4.2 Under a scenario where non-fleet EV fast charging service providers are eligible for BC Hydro's Overnight Rate or Demand Transition Rate, please discuss whether this would have an impact on the rates proposed in the Application for BC Hydro to provide EV fast charging services (e.g. higher, lower, or no change). Why or why not?

On pages 4 to 6 of ChargePoint's evidence, it provides a list of EV specific demand charge rates that have been designed by other utilities in North America. ChargePoint also states that some of these EV specific demand charge rates were directed by government.

- 4.3 Of the utilities provided in ChargePoint's evidence, please provide a table that separates the utilities where EV specific demand charge rates were directed by government and the ones where the utility made the proposal without government direction.
- 4.4 Please provide a table that groups the utilities provided in ChargePoint's evidence into common categories (e.g. utilities who have designed EV specific demand charge rates that have deferred the demand charge, utilities who have reduced the demand charge and utilities who have eliminated the demand charge).

On page 4 of ChargePoint's evidence, it states:

However, there are alternative ways to structure these demand charges to encourage EV investment from all entities including municipalities and private businesses. A number of utilities across North America have introduced alternative rates, and have incorporated designs which accomplish the goals of the utility (i.e. compensation for providing energy), rate payers and EV charging investors.

- 4.5 Since this proceeding is with respect to BC Hydro's request for approval of rates to provide public EV fast charging services, please discuss whether it would be more appropriate to review BC Hydro's demand charges in a separate proceeding. Why or why not?
- 4.6 Please clarify whether ChargePoint is proposing that public charging rates should be higher than the ones proposed in the Application because it would offset the investment barriers associated with demand charges.