



May 3, 2018

Sent via email/eFile

BCUC REGULATION OF ELECTRIC VEHICLE CHARGING SERVICE INQUIRY EXHIBIT A-24
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Suzanne Goldberg
Canadian Director, Public Policy
ChargePoint Inc.
Suzanne.Goldberg@ChargePoint.com

Re: British Columbia Utilities Commission – An Inquiry into the Regulation of Electric Vehicle Charging Service – Project Number 1598941 – Information Request No. 1

Dear Ms. Goldberg:

Further to your March 16, 2018 filing of written evidence with respect to the above-noted Inquiry, enclosed please find British Columbia Utilities Commission (BCUC) Information Request No. 1. In accordance with the regulatory timetable, please file your responses on or before Wednesday, June 6, 2018.

The BCUC's Rules of Practice and Procedure (Rules) set out in Order G-1-16 provide guidance and establish requirements for participants in BCUC proceedings. Subject to section 14 of the Rules, all parties that receive an information request must provide full and adequate response to each question.

The BCUC's Rules of Practice and Procedure can be viewed here:
<https://www.ordersdecisions.bcuc.com/bcuc/orders/en/127520/1/document.do>

If you have any questions regarding the information request process, please contact Commission Secretary.

Sincerely,

Original signed by:

Patrick Wruck
Commission Secretary

/dg
Enclosure

cc: Matthew D. Keen
Norton Rose Fulbright Canada LLP
matthew.keen@nortonrosefulbright.com



**British Columbia Utilities Commission
An Inquiry into the Regulation of Electric Vehicle Charging Service**

INFORMATION REQUEST NO. 1 TO CHARGEPOINT

A. BASIS FOR EV CHARGING SERVICE REGULATION EXEMPTION

**1.0 Reference: Exhibit C25-2, pp. 7–9
Competitiveness**

On pages 7 to 9 of Exhibit C25-2, ChargePoint states:

The Commission Panel in the “Inquiry Into the Offering of Products and Services in Alternative Energy Solutions and Other New Initiatives” (the “AES Inquiry”) recognized that the “literal interpretation... The Commission confirmed that its interpretation and application of the UCA should take into account the market context, specifically the “degree to which natural monopoly characteristics are present and whether the consumer requires protection.” ChargePoint concurs, and submits that the Commission should come to the same conclusions in these circumstances

...

The relationship between EVCS owner/operator and EV driver is fully competitive.

...

According to Natural Resources Canada’s Electric Charging and Alternative Fuelling Stations Locator, there are 1,237 public charging ports in BC provided by a wide range of EVCS owners and operators.

- 1.1 In the view of ChargePoint, does 1,237 charging points in BC constitute a “fully competitive” market? Are there any gaps where the market is not fully competitive, either by location or for a particular service type/group?

On page 9 of Exhibit C25-2, ChargePoint states:

...many of the selling features of ChargePoint’s products help individual EVCS owners/operators compete against, or collaborate with, other owners/operators to attract EV charging customers.

- 1.1.1 Please elaborate on the features that allow EVCS owners/operators compete against others.

**2.0 Reference: Exhibit C25-2, p. 10
Other jurisdictions**

On page 10 of Exhibit C25-2, ChargePoint states:

Currently, 20 states and the District of Columbia have determined, through statutory amendment or regulatory clarification, that charging services provided by nonutility third party EVCS owners and operators are outside of regulatory commission jurisdiction.

- 2.1 From the analysis undertaken by ChargePoint, please discuss the other US states in which statutory amendments or regulatory clarifications were not made. Please clarify whether EV charging service provided by site hosts/third-parties are considered a regulated activity, or whether those US states have not made a determination.

**3.0 Reference: Exhibit C24-2, pp. 12, 32
BCUC Thermal Energy System Guidelines (TES Guidelines), p. 7
Class exemption**

On page 32 of Exhibit C24-2, ChargePoint states:

If the Commission determines that EVCS owners and operators are captured by the definition of “public utility” under the *UCA*, then the Commission should exempt EVCS owners and operators from regulation. The Commission has previously taken a similar approach for thermal energy service (“TES”) installations, specifically the “Micro TES” and “Strata TES” categories under the TES Guidelines attached as Appendix A to Order G-27-15. The current circumstances justify the use of exemptions to exclude EVCS from regulation even more strongly, because none of the indicia suggesting the need for regulation, as previously identified by the Commission, are present here. For that reason, no conditions or threshold, capital cost or otherwise, should apply to an EVCS exemption.

On May 19, 2016 by Order G-71-16, BCUC granted Bakerview EcoDairy an exemption from Part 3 of the *Utilities Commission Act (UCA)*, except sections 25, 38, 42, 43, 44 and 49.¹

- 3.1 In ChargePoint’s view, if BCUC were to recommend a class of cases exemption to government in relation to EV charging service, what factors should be considered in developing the classes? Further, what sections of the *UCA*, in ChargePoint’s view, should EV charging service be exempt from?
- 3.2 Does ChargePoint have a view on what the classes could be (e.g. based on different levels of EV charging equipment, charging station geographic locations, type of dwelling, owner/operator structure, some combination of the above, or others)? If yes, please describe.

On page 12 of Exhibit C25-2, ChargePoint states:

The Commission has previously taken a similar approach for thermal energy service (“TES”) installations, specifically the “Micro TES” and “Strata TES” categories under the TES Guidelines attached as Appendix A to Order G-27-15.

The TES Guidelines includes an outline of the BCUC’s role with regards to the TES complaint process.

- 3.3 Please discuss whether ChargePoint believes that the BCUC should have a role in EV charging with regards to complaints that is similar to TES as outlined in the TES Guidelines.
- 3.4 Please summarize the nature of customer complaints with regards to EV charging stations in BC and other jurisdictions that ChargePoint is active in. Please outline the accountable entities, and how such complaints are resolved.

¹ http://www.bcuc.com/Documents/Proceedings/2016/DOC_46352_05-19-2016_Bakerview-Exemption-Approved_G-71-16.pdf

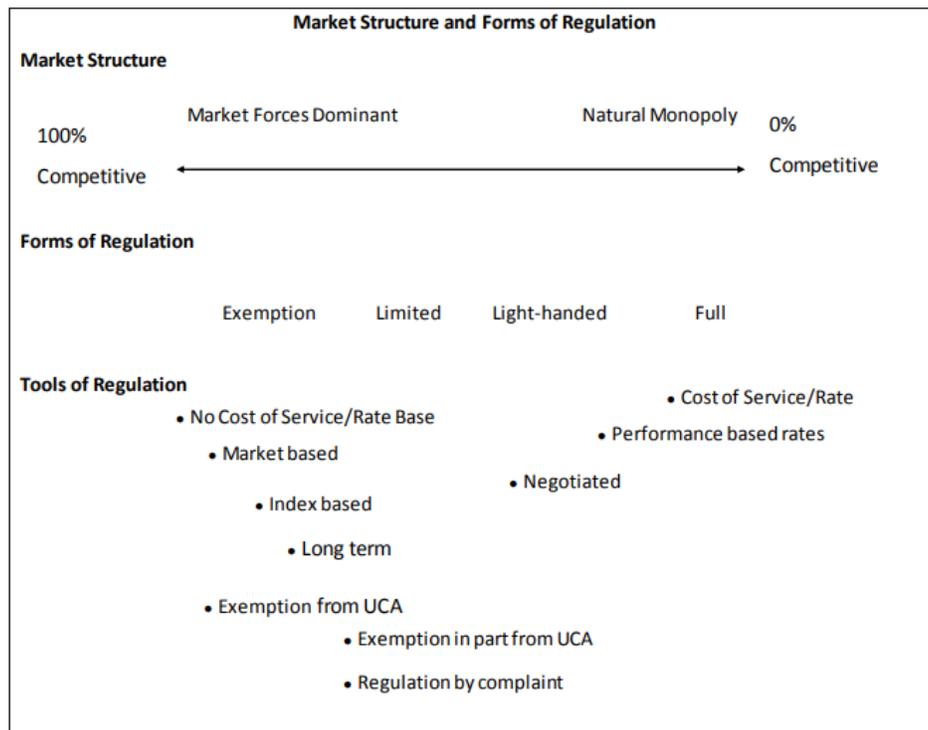
On page 7 of the BCUC’s Thermal Energy System Guidelines (TES Guidelines), it states:

Strata Corporation TES²: A TES owned or operated by a Strata Corporation, or the Strata Corporation’s lessee, trustee, receiver or liquidator, that supplies the Strata Corporation’s owners, is exempt from Part 3 of the UCA other than sections 42, 43 and 44.

3.5 In ChargePoint’s view, should an exemption similar to the Strata Corporation exemption in the TES Guidelines be considered for Strata Corporations if EV charging service were to be regulated by the BCUC? Please discuss.

**4.0 Reference: BCUC Inquiry into FortisBC Energy Inc.’s Offering of Products and Services in Alternative Energy Solutions (AES) and Other New Initiatives proceeding, Order G-231-13A with reasons for decision, pp. 23–24
Proposed regulatory framework and guide for thermal Energy Service Utilities**

On pages 23 and 24 of the Reasons for Decision attached to Order G-231-13A, the BCUC states: The [AES]³ Inquiry found that the form of regulation should be determined by the market structure. The Panel agrees with this assessment. The figure below illustrates the Panel’s view of the relationship between market structure and the various tools of regulation.



The Panel in Order G-231-13A also agreed with the basic regulatory concepts outlined in the AES Inquiry Report whereby regulation should be the option of last resort and competition should always be preferred over regulation.

² As defined by the *Strata Property Act* [SBC 1998].

³ Inquiry into FortisBC Energy Inc.’s Offering of Products and Services in Alternative Energy Solutions and Other New Initiatives

- 4.1 Please discuss whether the BCUC in this EV Inquiry should consider the relationship between market structure and forms of regulation, as shown above in the diagram. If not, why not?
- 4.2 Suppose the BCUC uses the above diagram as a guide to determine the appropriate form of regulation. Given the market structure noted in ChargePoint's submission, what would be the corresponding form of regulation and tool of regulation? If any different, please explain in terms of the ChargePoint's view of the current market structure and the expected market structure in the next 3-5 years.

B. INVESTMENT DECISION

5.0 Reference: Exhibit C20-2, p. 6
Exhibit C15-2, p. 2
DCFC - third-party investment

On page 6 of Exhibit C20-2, AddÉnergie Technologies Inc. (AddÉnergie) states:

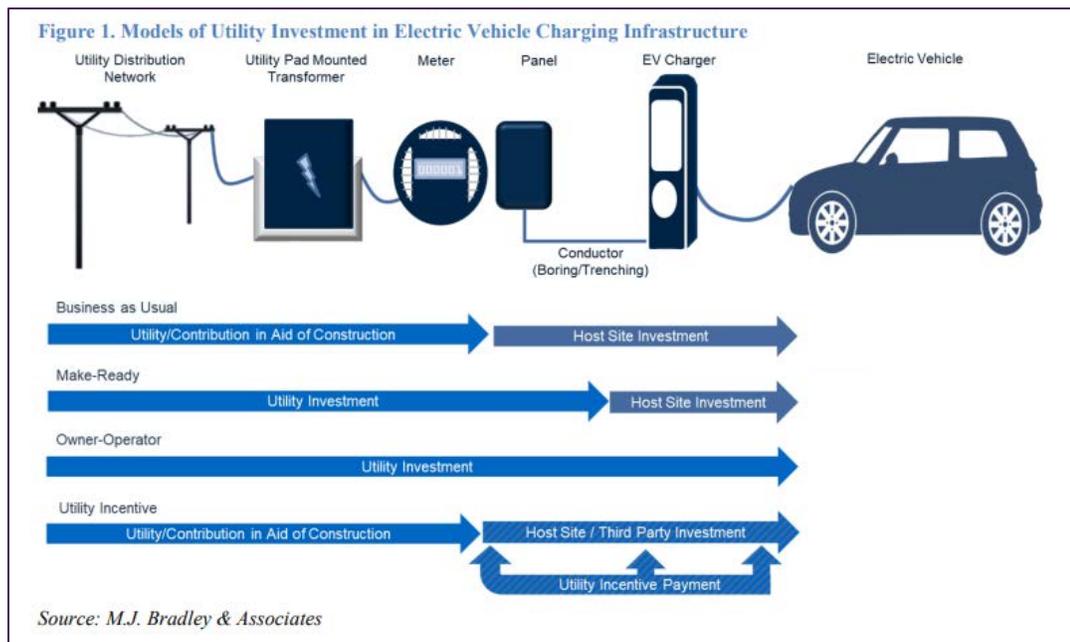
That the major barrier to EV charging station competitiveness is that British Columbia lacks a comprehensive network of charging stations and that one is unlikely to be developed by [third-party] investment alone.

On page 2 of Exhibit C15-2, Greenlots states:

[Unfortunately] a sustainable, competitive market is aspirational, and is unlikely to arise prior to the adoption of a critical mass of electric vehicles. This is primarily on account of a lack of a business model for the ownership and operation of public charging stations based on sustainable revenues from charging activities, and this has thus far resulted in a fundamentally inadequate amount of [third-party] investment in such charging infrastructure.

In a report authored Georgetown Climate Center and by M.J. Bradley & Associates, titled "Utility Investment in the Electric Vehicle Charging Grid: Key Regulatory Considerations" dated November 2017⁴ (GCC-MJBA Report), on page 9, Figure 1 provides the models of utility investment in EV charging infrastructure: (i) business as usual, (ii) make-ready, (iii) owner-operator, and (iv) utility incentive.

⁴ http://www.georgetownclimate.org/files/report/GCC-MJBA_Utility-Investment-in-EV-Charging-Infrastructure.pdf



5.1 Please discuss the pros and cons of the four business models that are noted in the GCC-MJBA Report. Include considerations such as market growth, business sustainability, customer impacts, public interest, competition, and appropriate level of utility regulation.

6.0 Reference: Exhibit C25-2, pp. 5, 9; Exhibit C20-2, pp.3-4; Exhibit C34-2, pp. 5, 9 DCFC – business model and economics

On page 5 of Exhibit C25-2, ChargePoint states:

ChargePoint has more than 7,000 customers (businesses, cities, governments, MURBs), with more than 45,000 independently owned public and semipublic charging spots, including over 600 public charging ports in BC.

6.1 Please provide a breakdown by level or charger type served by ChargePoint in BC.

6.2 What is the useful life of ChargePoint’s current generation of Level 2 and DCFC systems?

On page 9 of Exhibit C25-2, ChargePoint states:

Explicit recognition that EVCS site hosts and EV charging services are excluded from the definition of “public utility” would be consistent with the current state of competitive EV charging markets elsewhere that ChargePoint participates in. Those markets, in turn, are driving innovation, customer choice, and [third-party] investment.

6.3 Please list the jurisdictions where there has been an increase in third-party investment in DCFC stations in which EVCS site hosts and EV charging services are excluded from the definition of “public utility”? Please state any differences that may affect comparability to BC.

6.3.1 How does ChargePoint measure or verify the relationship between the level of regulation vs. market growth? Please identify the key indicators and/or metrics.

On pages 3 to 4 of Exhibit C20-2, AddÉnergie states:

AddÉnergie has provided a Generic DCFC Financial Model (the Generic Model, attached as Appendix A) based on BC Hydro's and FortisBC's respective commercial rates to illustrate how a standard DCFC is likely to perform under different charging scenarios. There are relatively limited scenarios in which a station is likely to recover costs within a decade under the current BC Hydro general service business rate or Fortis BC commercial rates even assuming a \$20/hour cost of charging, which is double the rate used in Québec's Electric Circuit, Canada's most advanced EV charging network, and assuming no cost of capital (i.e., that projects are financed at 0% interest).

The Generic Model contains a number of charging station operation assumptions and charging station usage assumptions.

- 6.4 Please comment on the assumptions of AddÉnergie's model and if the model is a reasonable depiction of DCFC station ownership and operation.
- 6.5 In ChargePoint's view, please discuss which component of AddÉnergie's model will be sensitive to material changes in the next five years given the developments in the EV market. Please explain.

On page 5 of Exhibit C34-2, Community Energy Association (CEA) provides an illustrative example of a Level 3 Charging Station Business Model. Further, CEA submits that the model is known to be incomplete regarding differences in utility vs non-utility ownership and operation.

On page 9 of Exhibit C34-2, CEA submits that "Non-utility DCFC owner/operators currently have high demand charges for DCFC equipment (typically 50kWh systems) that utilities do not appear to account for in their internal costs for DCFC."

- 6.6 Please comment on the assumptions of CEA's model and if the model is a reasonable depiction of DCFC station ownership and operation.
- 6.7 In ChargePoint's view, please discuss which component of CEA's model will be sensitive to material changes in the next five years given the developments in the EV market. Please explain.
- 6.8 Please discuss ChargePoint's experience with the EV charging station business between metropolitan areas vs. small communities.
 - 6.8.1 From ChargePoint's perspective, is there a concern small communities may be underserved if the EV charging station business in small communities tends to be uneconomical or unprofitable relative to metropolitan areas? Please discuss.

**7.0 Reference: Exhibit C20-2, p. 2
Multi-Unit Residential Buildings (MURBs) & Curbside Parking**

On page 2 of Exhibit C20-2, AddÉnergie states:

Direct current fast charger (DCFC) and multi-unit residential building (MURB) home charging are unlikely to be widely and comprehensively deployed in British Columbia without public utility involvement because of the current economic barriers facing charging providers and still-emerging demand for EV charging in many parts of the province. Curbside public charging faces similar cost and also regulatory challenges that are likely to inhibit its widespread deployment.

- 7.1 What difficulties have ChargePoint observed regarding the installation and operation of charging infrastructure in MURBs and curbside charging? What products or services does ChargePoint offer for this market?

- 7.2 Please discuss which EV charging business model that is most suitable for MURBs (e.g. a public utility or third-party site host owned or operated).
- 7.3 Please discuss which EV charging business model that is most suitable for curbside public charging (e.g. a public utility or third-party site host owned or operated).

C. RATES

8.0 Reference: Exhibit C1-2, p. 13 Rate design – charging station to EV customer

On page 13 of Exhibit C1-2, British Columbia Hydro and Power Authority (BC Hydro) states: “It may be possible to differentiate time-based charges to vary based on vehicle capacity to address such fairness issues.”

- 8.1 What is ChargePoint’s view on alternative rate structures, such as BC Hydro’s suggestion to differentiate time-based charges to vary based on vehicle capacity?
- 8.2 Would ChargePoint’s systems be able to differentiate EV charging rates based on vehicle capacity?

9.0 Reference: Exhibit C20-2, p. 7; Exhibit C1-2, p. 7 Measurement Canada

On page 7 of Exhibit C20-2, AddÉnergie submits “that as of March 6, 2018, Measurement Canada has not certified any commercially available DCFC device to bill on the basis of energy (kWh) or time-related demand (kW).”

On page 7 of Exhibit C1-2, BC Hydro states:

The introduction of a new standard is expected to take some time, and in BC Hydro’s view a Measurement Canada approved DC standard is several years away.

- 9.1 Has ChargePoint sought Measurement Canada certification for DCFC devices it manufactures or imports in order for owners or operators to bill an energy-based rate?
- 9.1.1 If so, please provide a status update on such processes.
- 9.1.2 If not, does ChargePoint have any plans to file a request in the future?
- 9.2 Please explain what difficulties exist in certifying DCFC billing devices for commercial use purposes. Is it unique to EV charging stations?
- 9.2.1 Are AC Level 2 chargers certified by Measurement Canada to charge by energy?
- 9.3 With respect to a rate design that differentiates time-based charges to vary based on vehicle capacity, would such rate design be possible without Measurement Canada’s certification on an approved DC standard?

D. STORAGE AND GRID STABILITY

10.0 Reference: Exhibit C25-2, pp. 6, 15, 21 Rate design and grid optimization

On page 21 of Exhibit C25-2, ChargePoint states that “In the United States, some utilities have developed or piloted EV-specific time of use rates to promote the use of EVs or facilitate grid management.”

- 10.1 Please identify the states and the utilities where they have developed or piloted EV-specific time of use rates to promote the use of EVs or facilitate grid management. What are the pros and cons of EV-specific time of use (TOU) rates? What observations/conclusions does ChargePoint make about customer behavior under TOU rates? Please discuss.
- 10.2 Please discuss the impacts to grid management as observed by these jurisdictions (provide references where available).

On Page 6 of Exhibit C25-2, ChargePoint states that “...we have designed the network to allow other parties, such as electric utilities, the ability to access charging data and conduct load management to enable the most efficient load integration with the grid.”

On page 15 of Exhibit C25-2, ChargePoint states:

Smart, networked charging provides new flexibility to enable more grid benefits than traditional load management, and valuable data can be collected to inform better utility planning decisions and help maintain reliability and affordability. Based on the data collected from smart charging stations, new processes can be created to better integrate EV charging utilization with available electrical capacity – helping balance loads and reduce the costs of providing clean energy.

- 10.3 Please provide in greater detail the information that can be shared with electric utilities through the ChargePoint network.
- 10.4 Please discuss whether ChargePoint have any data-sharing arrangements with regulated public utilities including BC Hydro and FortisBC Inc., or any other electric utilities in BC.
- 10.5 Please provide any analysis or report on instances where the collection of charging data has led to better load management.

E. HYDROGEN FUEL CELL TECHNOLOGY

11.0 Reference: Exhibit C25-2, p. 1; Exhibit C19-2, p. 2 Fuel Cell Electric Vehicle (FCEV)

On page 1 of Exhibit C25-2, ChargePoint states:

ChargePoint is the leading EV charging network in the world, with charging solutions in every category EV drivers use to charge: home, work, around town and on the road. ChargePoint has more than 7,000 customers (businesses, cities, governments, MURBs), with more than 45,000 independently owned public and semipublic charging spots, including over 600 public charging ports in BC.

On page 2 of Exhibit C19-2, the Ministry of Energy, Mines and Petroleum Resources states that “The Province is active in promoting the uptake of zero emission vehicles (ZEVs), including battery-electric, plug-in hybrid, and fuel cell vehicles.”

- 11.1 Please discuss whether ChargePoint has any involvement in FCEVs and FCEV fueling infrastructure.