



May 3, 2018

Sent via email/eFile

BCUC REGULATION OF ELECTRIC VEHICLE CHARGING SERVICE INQUIRY EXHIBIT A-31
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James Locke
President
Victoria, Electric Vehicle Association
info@victoriaevclub.com

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

Dear Mr. Locke:

Further to your April 4, 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: Mr. Jim Hindson
jhindson@telus.net



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

INFORMATION REQUEST NO. 1 TO VICTORIA ELECTRIC VEHICLE ASSOCIATION

A. BASIS FOR EV CHARGING SERVICE REGULATION EXEMPTION

**1.0 Reference: Exhibit C35-2, pp. 4, 9–10
Potential cross-subsidization**

On page 4 of Exhibit C35-2, Victoria Electric Vehicle Association (EVA) states: “EVs contribute to gross BC Hydro revenues and do not currently present a cross-subsidization issue,” and on pages 9 and 10, it submits two principals based on:

That the original purpose of public utilities was to make energy (electricity and natural gas) available to all the citizens of a province or state recognizing that it was in the general public interest for urban area ratepayers to financially support the higher costs of providing the utility to rural areas.

There is a lower risk of cross subsidization as each EV contributes additional hydro revenues with no immediate additional grid costs. Each block of 10,000 EVs entering service adds as much as \$ 2.3 million per year to gross BC Hydro revenues with minimal cost impacts on the existing electricity grid infrastructure

As per footnote 12 in Exhibit C35-2, the estimated additional revenue is based on 10,000 EVs @ 13,000 km (Stats Canada 2009) @ 160 Wh/km= 2,080 kWh / year @ 0.11.kWh = \$ 2.3 m per year.

1.1 Please clarify if Victoria EVA is assuming that there is zero incremental “cost impact on the existing electricity grid infrastructure” to serve 10,000 EVs, and therefore conclude that there is no cross-subsidization issue at this time.

1.1.1 In Victoria EVA’s view, at what level of electric vehicle (EV) uptake would require electricity grid infrastructure upgrades? Would this measure also depend on the demand of a specific region/location? Please discuss.

1.1.2 Does the Victoria EVA consider that public utility investments to own or operate EV charging stations (i.e. DCFC stations) would offset the additional revenues from electricity sales? Please discuss.

**2.0 Reference: Exhibit C35-2, pp. 5–6
EV charging stations – registration process**

On pages 5 and 6 of Exhibit C35-2, Victoria EVA states:

... the registration process be simplified by including the ability to register and deregister Alternating Current electric vehicle charging installations on-line.

... the registration process be simplified by including the ability to apply for registration and de-registration for Direct Current Fast Charging (DCFC) electric vehicle charging installations on-line.

- 2.1 Please clarify what are the purposes of the proposed registration. Is the Victoria EVA suggesting that the BCUC would store and administer the registration information?
- 2.2 Please clarify what type of information would be requested in the proposed registration. Under what circumstances would de-registrations occur?

**3.0 Reference: Exhibit C35-2, pp. 5–6
EV charging stations – proposed changes to the BC Hydro Electric Tariff**

On page 5 of Exhibit C35-2, for Alternating Current Electric Vehicle Charging Services (Level 1 and Level 2 AC), Victoria EVA states:

That the charges for electricity consumption comply with the British Columbia Hydro and Power Authority (BC Hydro) Electric Tariff Terms and Conditions for the Resale of Electricity, Subsection 9.2 of the BC Hydro Electric Tariff Terms and Conditions which states as follows (with suggested revisions underlined):

- i. If a Customer wishes to sell Electricity which the Customer has purchased from BC Hydro to a tenant, of that Customer at the same Premises **or to an owner or operator of an electric vehicle** on a metered basis, then the Customer shall agree that the selling price for such Electricity shall not exceed the price which BC Hydro would have charged had that tenant **or owner or operator of the electric vehicle** been a Customer of BC Hydro. This requirement shall be included in an agreement for resale between BC Hydro and the Customer.*

Similarly, on page 6 of Exhibit C35-2, for DCFCs:

- i. If a Customer wishes to sell Electricity which the Customer has purchased from BC Hydro to an electric vehicle owner or operator on a metered basis at the same Premises, then the Customer shall agree that the selling price for such Electricity **shall not exceed a multiplier (TBD) of the price** which BC Hydro would have charged had that owner or operator of the electric vehicle been a Customer of BC Hydro. This requirement shall be included in an agreement for resale between BC Hydro and the Customer.*

- 3.1 With respect to Level 1 and Level 2 AC, does Victoria EVA view that there should be a mechanism to recover the fixed cost of the infrastructure? Why or why not?
- 3.1.1 Would Victoria EVA propose similar wording to other public utilities' electric tariffs, such as FortisBC Inc. (FBC)?
- 3.2 With respect to DCFCs, is Victoria EVA suggesting that the BCUC should have a separate regulatory process to determine the multiplier proposed?
- 3.2.1 If so, who should bear the regulatory cost of such regulatory process? (e.g. DCFC service providers that apply before the BCUC, BC Hydro/FBC, or other)

B. INVESTMENTS

**4.0 Reference: Exhibit C35-2, p. 1, Appendix C, p. 3; Exhibit C5-2, p. 11; Transcript, Volume 7, p. 338
Exhibit C4-2, p. 18; Exhibit C12-2, Appendix 1, p. 48
Estimating number of DCFC units**

On page 1 and Appendix C of Exhibit C35-2, Victoria EVA states:

A substantial EV charger rollout will be needed in Level 2 residential charging and (DCFC) charging networks. At the current estimated annual rates of EV sales over the next 5 years (to 2023) between 320 and 615 DCFC units could be required.

A recent California Study indicated that between 1 and 3 DCFC units per 100 EVs will be required.

Using a rate of 2 DCFCs per hundred EVs, and the estimated range of EV ownership by 2023 of 16,050 from Figure 2 and 30,800 from Figure 1 between 320 and 615 DCFC units could be required by 2023.

On page 11 of Exhibit C5-2, the City of Vancouver states that “The City expects home charging to be the dominant mode of charging for most EV owners because of the convenience.”

On page 18 of Exhibit C4-2, Donald Flintoff submits that “... EV owners charge their cars at home more than 90% of the time...”

On page 49 of the Powertech Labs Inc. report dated October 19, 2016 in Appendix 1 of Exhibit C12-2, it states “Data collected for the EV Project led by Idaho National Lab shows that 80% of EV charge events take place in the home (almost always at level 1 or level 2), while 20% take place in public locations.”

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 2017¹ (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.

- 4.1 Please clarify whether the California Study specify for what time period would between 1 and 3 DCFC units per 100 EVs be required. Is this ratio applicable for 2023, or some other years?
- 4.2 Does the California Study discuss distance travelled per EV to conclude such 1-3 DCFC units per 100 EVs ratio? If so, is there any evidence to indicate that the distance travelled in California and BC is similar or dissimilar?
- 4.3 Does the California Study provide any assumptions regarding home charging vs. public charging? If so, please compare with the California Study with the 80%-90% home charging submissions as referenced above.
- 4.4 In Victoria EVA’s view, which business model as referenced in the GCC-MJBA Report is most appropriate to invest in DCFC infrastructure if there’s “a need for between 5.3 and 10.3 DCFC installations per month for the next 60 months.” Please discuss.

At the Nanaimo Community Input Session, Ms. Turner suggested:

... The research that I've done so far has indicated that the battery capacity for a full EV used to be 250 kilometres. It's now up to 383 in the particular vehicle that I was looking at.

In two or three years perhaps that capacity will have increased, and therefore the need for charging stations will be reduced, just by virtue of not being concerned.²

- 4.5 Please comment on Ms. Turner’s submission that when vehicle capacity increase, the distance range available will also increase. Thus, the need for charging stations will be reduced.

¹ http://www.georgetownclimate.org/files/report/GCC-MJBA_Utility-Investment-in-EV-Charging-Infrastructure.pdf

² Transcript, Volume 7, p. 338.

C. RATES

5.0 Reference: Exhibit C35-2, p. 14 TOU rates

On page 14 of Exhibit C35-2, Victoria EVA states:

However, a concern with the application of TOU rates could arise if large numbers of EV users manually or start charging automatically at the beginning of the off peak rate period thereby creating a new peak grid loading issue

- 5.1 Please provide examples of jurisdictions or studies/reports regarding the concern that TOU rates may create a new peak grid loading issue.

D. HYDROGEN FUEL CELL TECHNOLOGY

6.0 Reference: Exhibit C19-2, p. 2 Fuel Cell Electric Vehicle (FCEV)

On page 2 of Exhibit C19-2, British Columbia 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.”

In February 2016 the Province announced an investment of \$40 million for the CEV Program. The funding will be distributed over three years (2017-18, 2018-19, and 2019-20) to:

- Continue point-of-sale purchase incentives of up to \$5,000 for battery electric vehicles and \$6,000 for hydrogen fuel cell electric vehicles. When combined with SCRAP-IT program incentives, total savings could be up to \$11,000 for a new electric vehicle, and \$12,000 for a hydrogen fuel cell vehicle.³
- 6.1 Please indicate whether Victoria EVA represent any FCEV members. If so, how many members own and/or drive FCEVs relative to Victoria EVA’s total membership?
- 6.2 In Victoria EVA’s view, from a user perspective, please compare the pros and cons of FCEVs relative to battery electric and plug-in hybrid electric vehicles.
- 6.3 In Victoria EVA’s view, from a charging infrastructure perspective, please compare and contrast the pros and cons of FCEVs relative to battery electric and plug-in hybrid electric vehicles.

³ Exhibit C12-2, Appendix 3, FACTSHEET: Clean Energy Vehicle Program/Innovative Clean Energy Fund, dated March 27, 2017.