



May 3, 2018

Sent via email/eFile

BCUC REGULATION OF ELECTRIC VEHICLE CHARGING SERVICE INQUIRY EXHIBIT A-20
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Mr. Les MacLaren
Assistant Deputy Minister
The British Columbia Ministry of Energy, Mines
and Petroleum Resources
Electricity and Alternative Energy Division
PO Box 9314, Stn Prov Govt
Victoria, BC V8W 9N1

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

Dear Mr. MacLaren:

Further to the March 15, 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: Shannon Craig
MEMPR
shannon.craig@gov.bc.ca



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

INFORMATION REQUEST NO. 1 TO BRITISH COLUMBIA MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

A. BASIS FOR EV CHARGING SERVICE REGULATION EXEMPTION

1.0 Reference: Exhibit C19-2, pp. 6–7
Basis for regulation

On pages 6 to 7 of Exhibit C19-2, British Columbia Ministry of Energy, Mines and Petroleum Resources (MEMPR) states:

The Commission’s oversight of public utilities ensures that customers receive safe, reliable and non-discriminatory energy services at fair rates from the utilities it regulates. Aspects of EV charging services that may require regulation in order to meet those objectives include rates charged to customers, impacts on ratepayers (if charging services provided by public utilities), infrastructure safety (including installation and use), and siting. A variety of agencies other than the Commission currently have a role in regulating some of these aspects of EV charging services.

...

Some aspects of EV charging services fall outside of any current regulation, including:

- systems and networking requirements, such as open protocols, that may be necessary for data sharing and tracking; and
- maintenance or operation standards for reliability.

1.1 Please discuss, in the view of MEMPR, whether there is a basis or potential benefit for the aspects of EV charging services that fall out of any current regulation to be regulated and by whom.

2.0 Reference: Exhibit C19-2, pp. 8, 10
Jurisdictional comparison

On page 8 of Exhibit C19-2, MEMPR cites examples of different regulatory models in Oregon and Nova Scotia. On page 10, MEMPR states:

The experience from other jurisdictions shows that a variety of regulatory models for EV charging services are feasible, ranging from full regulation as public utilities to no public utility commission oversight.

2.1 If some form of regulation is to be in place, would one reasonable option be setting a price cap on the mark-up of electricity sold?

2.2 Does MEMPR have a view on whether any of the regulatory models in other jurisdictions as reviewed by MEMPR are preferred or unsuitable for BC?

**3.0 Reference: Exhibit C19-2, pp. 7–8, 12
Degree of competitiveness**

On page 8 of Exhibit C19-2, citing an article from the Center for Strategic and International Studies, MEMPR states:

[The article] notes that establishing a profitable business model for EV charging infrastructure is challenging because of high upfront investment costs, low and uncertain near-term demand, and competition from home charging. The article notes that some see utilities “as the way to overcome all three of these challenges: utilities can address uncertainty by being told by regulators to install infrastructure (and at a pace directed by the regulator), can address the financing challenges by seeking ratebasing for the infrastructure, and can deploy in the immediate term if directed to do so by public utility commissions. In short, the market challenges faced by third-party EV charging vendors evaporate when the utility is the one doing the installing.” Disadvantages of public utility involvement include the potential risk to ratepayers and the potential for stifled competition.

On page 7 of Exhibit C19-2, MEMPR states:

For Level 3 charging stations, there are barriers to entry, which suggests that utilities have an opportunity to play an important role in developing this market.

On page 12 of Exhibit C19-2, MEMPR states that it “supports a role for public utilities in “kick-starting” the market for EV charging services. A role for public utilities would not preclude other entities from also investing in EV charging services.”

- 3.1 Does MEMPR have a position on whether utilities should be encouraged to take a lead on installing EV infrastructure as a means of scaling up significant expansion of public EV charging infrastructure in BC?
- 3.1.1 Does MEMPR have a position on whether utility involvement in the EV charging service market should change as the market matures?
- 3.1.1.1 If so, please explain and provide any key indicators that MEMPR considers would demonstrate market maturity. For example, should this be the number of EVs fleet in BC, number of EV charging stations/ports per EV, distance measured between public EV charging stations, or some other measures?
- 3.1.2 Is MEMPR aware of any jurisdiction where unregulated providers and/or third-party private investors are leading the EV charging market? Please discuss the stage of growth of the EV market in such jurisdiction, the policy environment, and the regulatory environment.
- 3.1.3 In MEMPR’s view, under what market conditions would third party private investment be more appropriate than public utility investments in the EV charging service market?
- 3.2 Under what conditions would increase third-party DCFC infrastructure investments and less reliance on public utility involvement? Please explain.
- 3.3 In a competitive market, there are low barriers to enter and exit. Please discuss the potential issues, if any, should EV charging service providers freely exit the market at any time.

**4.0 Reference: Exhibit C19-2, p. 10, 12
Basis for regulation**

On page 10 of Exhibit C19-2, MEMPR states:

There may be benefits to some form of Commission regulation of Level 3 charging services. A complaint-based form of regulation may be sufficient to address concerns regarding fairness of rates.

- 4.1 Please briefly expand upon the potential benefits of regulation of Level 3 charging stations.
- 4.2 Please confirm whether MEMPR considers a potential complaint based form of regulation to be only applicable to site hosts / third-parties, or to any entity providing EV charging services.
 - 4.2.1 Please elaborate on how MEMPR considers that a complaint based form of regulation could address the “fairness” of rates, in an environment where the rate-setting process is not subject to regulatory review and approval under the UCA.

On page 12 of Exhibit C19-2, MEMPR states:

The Province has allowed public utilities to play a similar role in establishing a domestic market for natural gas in transportation through the Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR) under the Clean Energy Act. The GGRR allows utilities to implement prescribed undertakings for a specified time period without seeking the prior approval of the Commission for programs that lead to GHG reductions, although the Commission still has the ability to rule on the prudence of expenditures. A similar mechanism could be used for DC fast-chargers. The Province could consider establishing objectives through legislation that would guide determinations of whether or not particular EV charging infrastructure investments could be recovered from ratepayers.

- 4.3 Please confirm, or explain otherwise, that this potential mechanism to have particular EV charging infrastructure investment to be recovered from ratepayers would involve an amendment to the regulations.

**5.0 Reference: Exhibit C19-2, p. 12
Investment / BCUC’s role in EV mass adoption**

On page 12 of Exhibit C19-2, MEMPR states:

MEMPR would be interested in advice from the Commission regarding appropriate levels of investment that public utilities should consider in developing EV charging infrastructure. MEMPR’s modeling shows that at least 200 new DC fast-chargers are required to provide adequate coverage throughout BC. There may also be a need for more DC fast-chargers in metropolitan areas. To manage impacts on ratepayers, some type of formula or other criteria could be used to guide utility investments (e.g., a maximum number of stations installed per year, metrics to assist in identifying areas and locations that utilize the existing transmission and distribution system or provide that maximum net benefit, a specific revenue-to-cost ratio, or some other metric).

- 5.1 Please briefly describe the assumptions underpinning the modeling for the minimum 200 new DC fast-chargers. If possible, please share this model with the BCUC.
 - 5.1.1 Please confirm by when 200 new DC fast-chargers are required, and clarify whether this refers to the number of stations or charging ports.

- 5.2 Please confirm whether the figure of 200 new DC fast-chargers includes stations or ports in metropolitan areas.
- 5.2.1 If not confirmed, please summarize any modeling that MEMPR has undertaken with regards to metropolitan areas.
- 5.2.2 Please discuss whether MEMPR has a view on whether public utilities in providing DC fast-chargers should be different for increasing the density of charging options in metropolitan areas versus provision of wider coverage throughout BC.
- 5.3 Please discuss whether MEMPR has a position on whether the Ministry, BCUC or other entity, should ultimately be the entity responsible for determining the appropriate level of investment by public utilities.

B. INVESTMENT DECISION

6.0 Reference: Exhibit C19-2, p. 4 Investment – DCFC

On page 4 of Exhibit C19-2, MEMPR states:

a second phase of DC fast-charging station deployment was supported by the Province, with partial funding for 21 new stations across BC. Most recently, in the Budget Update of September 2017, further Provincial investment in DC fast-chargers was confirmed, with \$2 million going into a multi-year joint call with Natural Resources Canada for a targeted additional 80 DC fast-charging stations in BC.

- 6.1 For forthcoming Provincial DCFC funding initiatives, please confirm the process for selecting partner organizations to own and operate the DCFC stations.

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

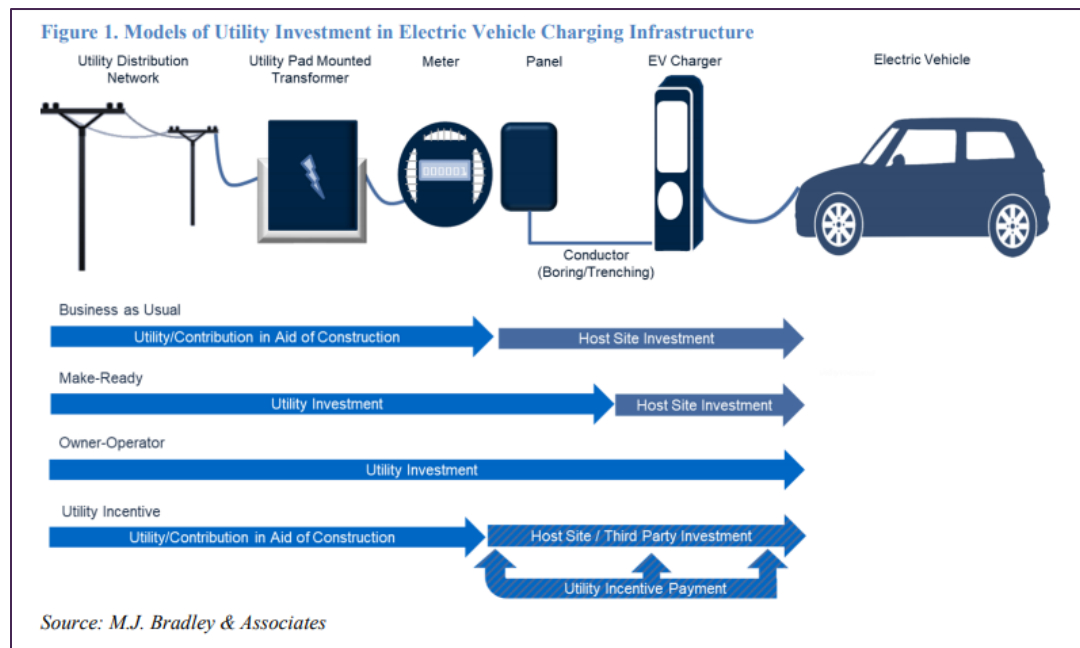
On page 6 of Exhibit C20-2, AddÉnergie Technologies Inc. states:

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 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.



7.1 Please discuss the pros and cons of the four business models that are noted in the GCC-MJBA Report.

7.1.1 In MEMPR’s view, which business model(s) would be most appropriate currently for the mass adoption of EVs?

7.1.2 Which business models(s) would be most appropriate as the EV market matures in the future?

C. HYDROGEN FUEL CELL TECHNOLOGY

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

On page 2 of Exhibit C19-2, MEMPR 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 a news release dated March 27, 2017,² the Government of BC noted its Clean Energy Vehicle (CEV) Program, which in February 2016 it announced an investment of \$40 million for the CEV Program over three years (2017-18, 2018-19, 2019-20), including the expansion of public, residential, and workplace charging and hydrogen fuelling infrastructure.

There is currently one public hydrogen fueling station operating at Powertech Labs in Surrey, BC.³

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

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

³ <https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean->

- 8.1 To the best of MEMPR's knowledge, please provide an estimated number of FCEVs relative to ZEVs registered in BC. Please provide the breakdown the information by vehicle type (e.g. private passenger vehicles), if possible.
- 8.2 In MEMPR'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.
- 8.3 In MEMPR's view, from a user perspective, please compare the pros and cons of FCEVs relative to battery electric and plug-in hybrid electric vehicles.
- 8.4 The Hydrogen Fueling Infrastructure Program indicates that a second public hydrogen fueling station is expected to be completed by 2018. If possible, please briefly discuss the status of the second public hydrogen fueling station.