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BCUC REGULATION OF ELECTRIC VEHICLE CHARGING SERVICE INQUIRY EXHIBIT A-27
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Re: British Columbia Utilities Commission – An Inquiry into the Regulation of Electric Vehicle Charging Service – Project Number 1598941 – Information Request No. 1

Dear Ms. DeMarco:

Further to the April 16, 2018 submission you made at the Vancouver Community Input Session on behalf of Toronto Hydro-Electric System Limited, 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: Andrew J. Sasso
Toronto Hydro-Electric System
regulatoryaffairs@torontohydro.com

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

INFORMATION REQUEST NO. 1 TO TORONTO HYDRO-ELECTRIC SYSTEM LIMITED

- 1.0 Reference: Exhibit C12-2, pp. 5, 15–16; Exhibit C19-2, pp. 7–8, 12**
BCUC Retail Markets Downstream of the Utility Meter Guidelines (RMDM) dated April 1997, p. 3
Degree of competition

On page 5 of Exhibit C12-2, FortisBC Inc. (FBC) states: “Based on the current state of the EV market and projections for the near future, FBC believes that investment by both utilities and government is required to encourage growth.”

On page 8 of Exhibit C19-2, citing an article from the Center for Strategic and International Studies, British Columbia Ministry of Energy, Mines and Petroleum Resources (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.”

Further, on page 12, 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.”

In BCUC’s Retail Markets Downstream of the Utility Meter Guidelines dated April 1997 (RMDM Guidelines)¹, on page 3, it states:

In general, the total range of goods and services potentially provided by energy utilities can be categorized as belonging to one of three areas... These areas are: goods and services which still clearly are defined as core monopoly products (e.g., wires and pipes), competitive products which could best be produced by a variety of players operating within a competitive market (e.g., appliance sales), and debatable/transitional products, i.e., those which are associated with

¹ <http://www.bcuc.com/Documents/Guidelines/RMDMGuidelns.pdf>

the monopoly core and which may or may not be considered true monopoly activities depending on one's assessment at any given time (e.g., billing/meter information). For example, **these products might be provided by the utility as they emerge, later be produced by a mix of utility and unregulated providers as the market grows and eventually be provided solely by the competitive market when the market is mature (e.g., natural gas vehicle conversions).** Core monopoly products result primarily from economies of scale or scope and are expected to decrease as a result of advances in technology reducing these economies, competitors' demands for access to the market for these products, customers' demands for more choice and the success of deregulation elsewhere. [Emphasis added]

- 1.1 Does Toronto Hydro-Electric System Limited (Toronto Hydro) have a position on the extent to which utilities should be encouraged to take a lead on installing EV infrastructure (Level 2 and DCFC) as a means of scaling up significant expansion of public EV charging infrastructure in BC? Please explain whether Toronto Hydro considers that public utility involvement in BC could stifle competition in the EV charging marketplace.
- 1.2 Please discuss the EV charging infrastructure model in Ontario. How does Ontario compare to BC when owning/operating public EV charging stations? Include discussion about the share of public utility investments, private third-party investments, and municipality investments.
 - 1.2.1 Does Toronto Hydro own or operate any EV charging stations? Please discuss.
- 1.3 In light of the RMDM Guidelines, does Toronto have a position on whether utility involvement in the EV charging service market should change as the market matures?
 - 1.3.1 If so, please explain and provide any key indicators that Toronto Hydro 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?
- 1.4 Is Toronto Hydro aware of any jurisdiction where the unregulated providers and/or private third-party 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.
- 1.5 In Toronto Hydro's view, under what market conditions would private investment be more appropriate than public utility investments in the EV charging service market?
- 1.6 Does Toronto Hydro consider that the commencement, continuation, or proliferation of regulated utilities like FBC or BC Hydro in the EV charging service to be a barrier for other third-party service providers to enter this market? Please explain why or why not.
 - 1.6.1 What are the incentives for other third-party service providers to enter this market if it is/will be dominated by regulated utilities with a large customer base to spread its costs over.
- 1.7 Please discuss whether the RMDM Guidelines which govern activities of regulated utilities wishing to enter into a market that is after the customer's meter would apply in the case of EV charging service. Why or why not?
- 1.8 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.
- 1.9 Please discuss Toronto Hydro's view on the degree of captivity of customers in multi-dwelling residences and on rural highways.

- 2.0 Reference: Exhibit C12-2, p. 22
Exhibit C6-2, p. 5
BCUC’s Thermal Energy System Guidelines (TES Guidelines), p. 7
Class of cases exemption**

On page 22 of Exhibit C12-2, FBC states: “Another item that may assist in the effective and efficient review of the Inquiry is to consider amendments to the UCA or an exemption from parts of the UCA that would encourage non-utility companies to participate in and encourage the development of the EV market.”

On page 5 of Exhibit C6-2, BC Sustainable Energy Association and Sierra Club BC (BCSEA) states:

7. The Commission should consider, either within this Inquiry or in a follow-on proceeding, exercising its authority under section 88(3) of the UCA to exempt from some or all of the provisions of the Act certain classes of entities providing EV charging services (to be defined) that but for the exemption would be “public utilities” and regulated under the Act. (For clarity, this includes entities providing EV charging services that may not currently meet the definition of “public utility” but that likely would do so if they started to receive compensation for their EV charging services.) An exemption under s.88(3) requires the advance approval of the Minister responsible for BC Hydro, i.e., the Minister of Energy, Mines and Petroleum Resources.

On May 19, 2016 by Order G-71-16, BCUC granted Bakerview EcoDairy an exemption from Part 3 of the UCA, except sections 25, 38, 42, 43, 44 and 49².

- 2.1 In Toronto Hydro’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 Toronto Hydro’s view, should EV charging service be exempt from?
- 2.2 Does Toronto Hydro 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 7 of the BCUC’s Thermal Energy System Guidelines (TES Guidelines), it states:

Strata Corporation TES³: 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.

- 2.3 In Toronto Hydro’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.

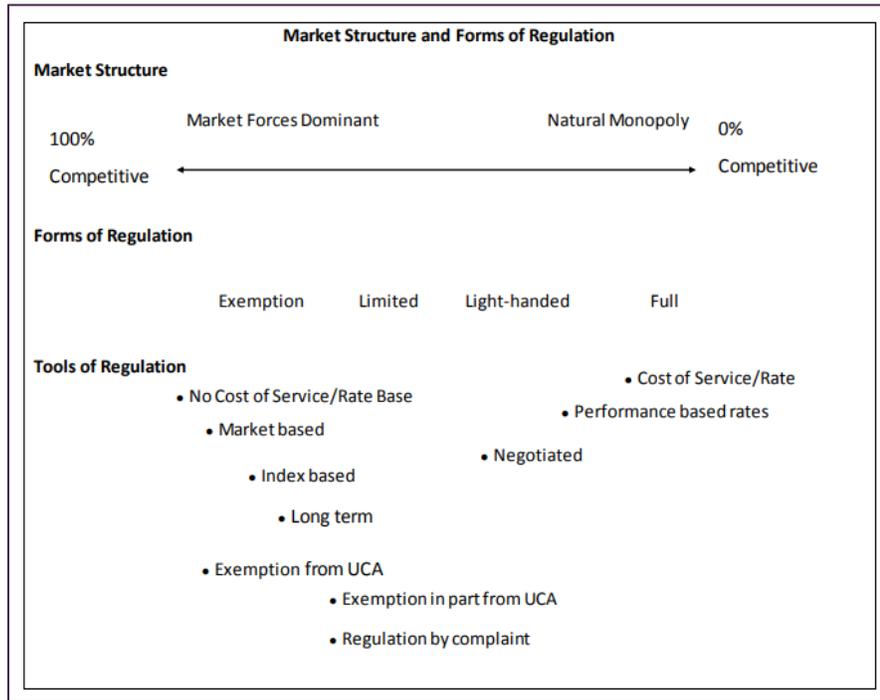
² http://www.bcuc.com/Documents/Proceedings/2016/DOC_46352_05-19-2016_Bakerview-Exemption-Approved_G-71-16.pdf

³ As defined by the *Strata Property Act* [SBC 1998].

**3.0 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 in the Reasons for Decision attached to Order G-231-13A, the BCUC states:

The [AES]⁴ 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.

- 3.1 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?
- 3.2 Suppose the BCUC uses the above diagram as a guide to determine the appropriate form of regulation. What would be the corresponding form of regulation and tool of regulation? If any different, please explain in terms of the Toronto Hydro’s view of the current market structure and the expected market structure in the next 3-5 years.

**4.0 Reference: Exhibit C19-2, p. 12; Exhibit C35-2, pp. 4, 9–10; Exhibit C1-2, p. 15
Transcript, Volume 8, p. 373
Cross-subsidization**

At the Vancouver Community Input Session on April 16, 2018, Toronto Hydro stated:

⁴ Inquiry into FortisBC Energy Inc.’s Offering of Products and Services in Alternative Energy Solutions and Other New Initiatives

EV charging decreases --and I emphasize, decreases --the rates for all utility customers. The utility bills of EV customers more than offset the costs incurred by the utility to deliver the electricity to charge the vehicles.⁵

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

a public utility may be able to demonstrate that the cost of public EV charging infrastructure can appropriately be recovered from revenue obtained through electricity sales at all EV charging stations within their service territories (i.e., through both public and private Level 1, 2 and 3 charging stations combined).

4.1 Please explain the methods in which Toronto Hydro can detect, measure, or verify 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.

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 2017⁶ (GCC-MJBA Report), on page 16, it states:

... a utility can play a critical role in jumpstarting the electric vehicle market; however, such proactive investment necessitates a tolerance for risk in accepting some number of unprofitable or underutilized projects.

4.2 Please provide Toronto Hydro's view on the first principal that the Victoria EVA submitted.

4.2.1 In light of the GCC-MJBA Report, please provide Toronto Hydro's view on that public utility plays "a critical role in jumpstarting the electric vehicle market" but needs to accept some "unprofitable or underutilized projects."

4.3 With respect to the second principal, please comment on Victoria EVA's estimate of \$2.3 million per year based on 10,000 EVs at 13,000km.

⁵ Transcript, Volume 8, p. 373.

⁶ http://www.georgetownclimate.org/files/report/GCC-MJBA_Utility-Investment-in-EV-Charging-Infrastructure.pdf