BRITISH COLUMBIA UTILITIES COMMISSION

Inquiry into the Regulation of Electric Vehicle Charging Service
BCUC Project No. 1598941

Initial Submission
of the
BC Sustainable Energy Association and Sierra Club BC

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1.0 Introduction

This is the initial submission of the interveners BC Sustainable Energy Association and Sierra Club BC (BCSEA-SCBC) in the Commission's Inquiry into the Regulation of Electric Vehicle Charging Service established by Order G-10-18.[1]

1.1 Inquiry purpose, principles and scope

The **purpose** of the Inquiry is to explore the potential regulatory issues, presumably within the Commission's jurisdiction, including

- the level of regulation necessary in the EV charging stations market,
- the rates for EV charging service, and
- any other matters that should be considered by the Commission.[2]

In terms of the immediate background, the establishment of the Inquiry comes closely after the Commission gave interim approval with conditions and adjourned[3] a December 2017 application by FortisBC Inc. (FBC) for approval of rate design and rates for EV DCFC (direct current fast charge) service at stations along the Highway 3 corridor within FBC's service territory.[4]

The Commission says it intends to adopt the following "**key principles**" in this Inquiry:

- the Commission will only regulate where necessary, and
- regulation should not impede competitive markets.

These principles were adopted by the Commission in its 2012 "Report on the Inquiry into the Offering of Products and Services in Alternative Energy Solutions and Other New Initiatives"[5] (AES Report) for regulated public utilities that provide products and services outside traditional utility activities.

The Commission notes the **early development stage** in B.C. of not only rate design and rates for EV charging but also the services provided by EV charging stations and the entities that may emerge over time to provide EV charging service.[6]

The **preliminary scope** of the Inquiry includes:

- Scope A: Basis for Regulation,
- Scope B: Rate design and rate setting, and
- Other matters.

The Commission provides questions under each category to help guide the submissions by interveners. These are addressed in detail below.

[1] Exhibit A-1
[2] Exhibit A-2, Order G-19-18, Appendix B
[3] Order G-9-18 (link)
[4] FBC 2017 DCFC Application (link)
[5] AES Report (link)
[6] Exhibit A-2, Order G-19-18, Appendix B

1.2 BCSEA and SCBC

BCSEA is a non-profit association of citizens, professionals and practitioners committed to promoting the understanding, development and adoption of sustainable energy, energy efficiency and energy conservation in British Columbia. BCSEA supports the province's transition to a lower-carbon economy. BCSEA has five chapters across B.C. and approximately five hundred individual and corporate members. BCSEA represents individuals and corporations in BC who care about energy sustainability and climate change, and who want the energy they purchase and use to be sustainably produced and transmitted.

Sierra Club BC (SCBC) is a non-profit organization of British Columbians from all walks of life committed to conserving the natural environment, with special reference to mitigating climate change; to educating people about environmental conservation; and to encouraging the enjoyment of nature. A key objective is to achieve an ecologically sustainable province which integrates human and economic activity, while conserving the province's wilderness and biodiversity values. SCBC has over 30,000 supporters across the province.

Members of BCSCA and SCBC are ratepayers of BC Hydro and FortisBC. In addition, many members of BCSEA and SCBC own or have an interest in owning an electric vehicle (EV) or in using an EV such as an electric bus when they become available. BCSEA and SCBC's interests in this proceeding are as non-profit public interest environmental and energy policy organizations, and as representatives of their members' interests as ratepayers.

2.0 BCSEA-SCBC's Key Points

BCSEA-SCBC's key points at this early stage of the Inquiry are as follows:

1. The Commission's approach to regulation of EV charging services should be designed to foster the rapid development of electric vehicles in all B.C. transportation sectors, including passenger, light commercial and heavy duty. Encouraging the adoption of EVs in substitution for fossil-fuel vehicles is in the public interest and consistent with the B.C. energy objectives under the *Utilities Commission Act* and the *Clean Energy Act*.
2. The Commission should adopt high-level objectives for its rules and policies (to be developed) regarding EV charging services, such as the following suggestions for discussion:
    a. to reduce barriers to EV adoption and use,
    b. to support growth and innovation in the market for EV services,
    c. to maximize the benefits and minimize the costs of the use of EVs to the environment and the community,
    d. to maximize the benefits and minimize the costs of EV charging to the electric system, and
    e. to foster the public interest and the B.C. energy objectives.
3. Setting aside BC Hydro and FortisBC (regulated public utilities that provide general electricity service), the provision of EV charging services by entities not exempt from the definition of "public utility" in the UCA should generally be subject to little or no regulation by the Commission for a reasonable period of time to allow development

of the sector, after which the form of regulation (if any) of the provision of these EV charging services should be revisited to take into account the evolved nature of sector.

4. EV charging services provided by entities exempt from the definition of "public utility" in the UCA are already not regulated by the Commission, and in BCSEA-SCBC's view should remain unregulated.
5. Public EV charging services provided by BC Hydro or FBC should be subject to light-handed regulation by the Commission, taking into account the objectives suggested above.
6. The Commission should approach the provision of EV charging services by BC Hydro and FBC bearing in mind the following:
    a. During the development of the EV sector in B.C., the Commission should allow BC Hydro and FBC to play an active role in developing EV charging services and infrastructure.
    b. Particular projects or programs that may be proposed by BC Hydro or FBC should be examined by the Commission on their own merits, bearing in mind, among other things, the importance of innovation and market development.
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.

3.0 Commission's Preliminary Scope

For convenience, the Commission's statement of the preliminary scope of the Inquiry is reproduced here:

> **Scope A: Basis for regulation**
>
> 1. Do EV charging stations operate in a competitive environment in BC or are they a natural monopoly service?
>
> 2. Are the customers of EV charging stations captive or do they have a choice?
>
> 3. Should the Commission regulate the services provided by EV charging stations? What are benefits and detriments to such regulation?
>
> **Scope B: Rate design and rate setting**
>
> 4. Should the rate design of EV charging stations be established under a public utility's traditional cost of service model or some other model? And within that context, what are the customer pricing options (e.g. energy-based rate vs. time-based rate)?
>
> 5. Should the EV charging station service rate be based on a public utility's existing wholesale or commercial retail rate or some other rate?

6. Should public utilities include EV charging stations in their regulated rate base or through a separate non-regulated entity?

7. If public utilities provide EV charging services within their regulated business, is there a risk of cross subsidization from other rate classes to support this new service and if so, is the proposed rate design potentially unduly discriminatory?

Other matters

8. Any other matters that may assist in the effective and efficient review of the Inquiry.

4.0 Scope A: Basis for Regulation

4.1 Whether to regulate

In the AES Report, the Commission panel states:

> "Before a discussion can be held on how to regulate new business activities, it is essential to first determine if the activity requires regulation."[7]

We interpret the central issue within Scope A, "Basis for Regulation," as being whether the Commission should regulate the provision of EV charging services in B.C. under the UCA.

BCSEA-SCBC's general perspective is that for the next five to ten years the Commission should not regulate of the provision of EV charging services in B.C., except for EV charging services provided by BC Hydro or FBC, which BCSEA-SCBC believe should be subject to light-handed regulation as discussed below.

BCSEA-SCBC also recommend that the Commission's various determinations regarding the regulation (if any) of EV charging services coming out of this Inquiry should be reviewed by the Commission in the future to take into account the evolution of the EV and EV charging sector.

The questions under the Commission's heading "Basis for Regulation" evoke two of the factors that the Commission took into account in determining whether and how to regulate alternative energy services as addressed in the AES Report:

- whether the energy service is a natural monopoly, and
- whether the customers of the energy service are captive (to a provider of the energy service.

For reference, three additional factors the Commission considered in determining whether and how to regulate alternative energy services as addressed in the AES Report are:

- whether the service is provided by an existing public utility regulated under the UCA,
- whether the entity providing the energy service is (already) exempt from the definition of "public utility" under the UCA, and

[7] AES Report, p.6, pdf p.10

- whether there is an alternative regulatory regime, not under the UCA, that may provide protective mechanisms more efficiently or effectively than regulation under the UCA.

4.2 EV charging stations and EV charging services

In this discussion we will use "EV charging station" to refer to hardware, and "EV charging services" to refer to the provision of electricity for EV charging and related services such as payment systems.

EV charging stations are usefully categorized by the physical/electrical type of equipment, i.e.:

- Level 1 charging stations, supplied by 120 volt, 15 amp AC circuits typical of household electrical service,
- Level 2 charging stations, supplied by 240 volt, 30 amp or larger AC circuits, common in household and public parking situations,
- AC Level 3, in development, supplying 66 kW (480V/80A) AC service, intended to charge larger EVs such as electric buses and trucks, and
- DCFC (direct current fast charge), e.g., 50 kW, 135 kW (Tesla Supercharger), or 300 kW (in development).[8]

EV charging services are usefully categorized on a number of not-necessarily mutually exclusive bases:

- the relationship between the customer (EV driver) and provider of the charging services, e.g.,
    - self-service, i.e., the driver and charging station owner are one and the same, individual or fleet,
    - available to public versus limited access,
    - a strata (condominium) situation, in which the EV charging service is provided by or on a contract for the strata corporation, and the EV drivers would include strata owners, tenants of strata owners, and, possibly, members of the public,
- the financial model, e.g.,
    - for-profit public EV charging service,
    - tied-benefit charging service (landlord to tenant, employer to employees, fleet station to licensees, Tesla to Tesla-EV-owners),
    - attractively-priced client-oriented charging service (stores, offices, institutions, parking lots),
    - "free" charging service (pilot program, business attraction, public service),
- the method of payment, e.g.,
    - network (cloud) service between EV driver and charging station operator,
    - direct payment by EV driver to charging service provider,

[8] See "EV Technology and Market Overview," PowerTech Labs, Appendix F, FBC December 2017 DCFC Application, pdf pp.111-121.

- *status quo* legal characterization of operator of EV charging station, e.g.,
    - regulated public utility (BC Hydro or FBC),
    - exempt from "public utility" under UCA (municipality, regional district, employer to employee, landlord to tenant),
    - EV charging service provider that meets the definition of "public utility" but isn't otherwise a public utility,
    - EV charging service provider that would come to meet the definition of "public utility" if it received compensation for the charging service,
- role of charging station from EV driver's perspective, e.g.,
    - home-base,
    - top-up,
    - distance travel,
- rate structure, e.g.,
    - per kWh, per minute, fixed charge, combination,
    - bundled with other service, such as parking,
    - fixed monthly.

The entities that do or will provide EV charging services in B.C. fall into three broad categories in terms of determining whether and how they should be regulated:

a. BC Hydro and FBC, which are existing fully-regulated public utilities providing electricity service,

b. entities (not otherwise public utilities) that would meet the definition of "public utility" under the UCA, and

c. entities that are already exempt from the definition of "public utility" under the UCA, i.e., municipalities or regional districts in respect of services provided by the municipality or regional district within its own boundaries, and employers or landlords serving their own employees or tenants not for resale to others.

4.3 Question 1. Do EV charging stations operate in a competitive environment in BC or are they a natural monopoly service?

We would restate the question: Do the providers of EV charging services operate in a competitive environment in B.C. or is the service they provide a "natural monopoly" as defined by the Commission in the AES Report.

"Natural monopoly" is a concept used by the Commission in determining the need for regulation under the UCA. In the AES Report, the Commission did not provide a specific definition of "natural monopoly." However, it did provide the following discussion, which is instructive:

> What Constitutes a Natural Monopoly?
>
> Dr. Jaccard states "[n]atural monopolies occur in sectors of the economy in which extreme economies-of-scale mean the monopoly firm can provide service at a lower cost than two or more competing firms." (Exhibit C12-5, p. 7)

> The market conditions which result in the creation of a natural monopoly may include:
>
> - Large initial capital costs;
> - Significant barriers to entry for competitors;
> - Infrastructure which is not cost-effective or otherwise amenable to duplication;
> - Subadditivity of costs: all the industry output (or array of outputs) demanded can be produced most efficiently only by a single firm; and
> - Economies of scale, with decreasing costs or (internal) increasing returns to scale over the demanded range of output.
>
> (Exhibit C12-5, p. 12; Exhibit B-11, BCUC IR 1.151.1)
>
> In a market with natural monopoly characteristics, the lowest cost to provide a service can only be achieved by a single firm, and the presence of competition, or entry of other firms, would only serve to increase costs to society. (Bonbright *et al.*, 1988: 8, Exhibit B-11, BCUC 1.149.0) 8
>
> Because a public utility tends to represent a single supplier of an essential product or service, its customers are basically captive, lacking the ability to readily change providers, and the demand curve is "inelastic", such that a change in price will not result in an equivalent change in demand.
>
> Public utilities are typically natural monopolies because their fixed costs, as determined by their technology and demand, are lower, such that it is a more efficient use of society's scarce resources for a single firm to supply the market than multiple firms. (*ATCO*, para. 3)[9]

Having discussed the meaning of "natural monopoly" as a factor relevant to whether EV services should be regulated by the Commission, BCSEA-SCBC's response to question 1 is that:

- Generally, no, the provision of EV charging services in B.C. is not a "natural monopoly" that would point toward the desirability of economic regulation under the UCA. For example, EV charging services are not a sector of the economy in which extreme economies-of-scale mean the monopoly firm can provide service at a lower cost than two or more competing firms. EV charging services are not characterized by large initial capital costs, significant barriers to entry for competitors, cost subadditivity,[10] or significant economies of scale. It cannot be said as the lowest cost to provide EV charging service can only be achieved by a single firm, or that the presence of competition, or entry of other firms, would only serve to increase costs (of EV charging service) to society.
- EV charging services installed within a MURB (multi-unit residential building) do have elements of a natural monopoly. Once the strata corporation or building owner installs, or contracts with a service provider to install, EV charging equipment in the premises there is only one EV charging service provider (at

[9] AES Report, pp.7-8, pdf pp.11-12
[10] "For a single or multi-product firm, cost **subadditivity** implies that the output level (or output bundle) is produced at least cost by one firm." Body of Knowledge on Infrastructure Regulation (link)

least in the present state of development of EV charging services). The strata owner or tenant (EV driver) is captive to that EV charging service provider, at least for at-home charging service. Other multi-unit EV charging situations, such as office buildings and parking lots, may well be most economically served by a single firm providing EV charging services. However, the EV drivers (charging service customers) are not as captive as in the MURB situation because they can access at-home or other public charging services.

4.4 Question 2. Are the customers of EV charging stations captive or do they have a choice?

As discussed in the response to Question 1, generally EV charging service customers are not captive to a specific EV charging service provider. However, EV charging service within a MURB does entail a 'captive customer' element for at-home charging.

Another situation that should be discussed is the public EV charging station that is geographically isolated from other public EV charging stations. Isolation here would be defined in terms of the range of EVs. One example would be a public EV charging station on a long stretch of highway with no other EV charging station. Another would be a public EV charging station in a town with no other nearby EV charging station. These situations are different from the MURB situation because normally it is assumed that an EV owner does not depend exclusively on a single public EV charging station.

4.5 Question 3. Should the Commission regulate the services provided by EV charging stations? What are benefits and detriments to such regulation?

The benefits of economic regulation of EV charging services under the UCA include, generically:

- enabling investment in the provision of EV charging services that would not be provided in the absence of a mechanism for the investor (public utility) to recover reasonable costs of service and to earn a reasonable return on equity invested in the regulated infrastructure,
- ensuring that customers of the regulated EV charging service pay rates that are just and reasonable and not unduly discriminatory,
- protecting the public interest where natural monopoly characteristics are present,[11]
- in the case of EV charging services provided by a general service electricity public utility regulated by the Commission, such as BC Hydro or FBC, allowing Commission oversight of
    - the potential for cross-subsidization between existing customers and EV charging service customers, and
    - the potential for market impacts, to the extent that this is within the Commission's jurisdiction.

The generic disadvantages of economic regulation of EV charging services include:

- potential discouragement of investment in facilities for providing EV charging services due to real or perceived regulatory expenses or delay,

[11] AES Report, p.7, pdf p.11

- potential stifling of innovation in the design and delivery of EV charging services and possible electric system benefits, due to rigid rates and rate structures,
- limiting EV customer options for EV charging service types, rate models and payment mechanisms,
- difficulty and expense in determining appropriate rates and rate structures where there is little or no common cost of service factors among and between different EV charging service providers, and
- impeding the development of competitive markets for EV charging services.

BCSEA-SCBC's preliminary responses to the question of whether the Commission should regulate the provision of EV charging services are as follows:

1. EV charging services provided by BC Hydro or FBC should be regulated by the Commission, albeit on some form of light-handed basis.
2. EV charging services provided by entities that are not public utilities under the Act, for example due to not being "for compensation," or being provided by a municipality or regional district within its own boundaries, and employers or landlords serving their own employees or tenants not for resale to others, are not currently subject to regulation by the Commission and should not become subject to regulation by the Commission.
3. Setting aside EV charging services provided by BC Hydro or FBC, EV charging stations that are provided by a public utility should generally not be regulated by the Commission, because the disadvantages of BCUC regulation outweigh the benefits.
    a. For these EV charging services, consideration should be given to light-handed (e.g., complaints based) regulation of EV charging services within MURBs and public EV charging services that are isolated from other public EV charging services.[12]
4. Recognizing that the entire EV sector in B.C. is undergoing rapid development and evolution, the Commission should establish some form of future re-examination of EV charging services regulation, with details to be examined during this Inquiry.

5.0 Scope B: "Rate design and rate setting"

5.1 Preliminary points

Our understanding is that whereas "Scope A, Basis for regulation" deals with whether EV charging services should be regulated, "Scope B, Rate design and rate setting" deals with how EV charging services should be regulated. In Scope B it is assumed that it has been determined that the EV services in question are to be regulated by the Commission: the topic is how these EV services should be regulated.

This means, first, that Scope B does not apply to EV charging services that are not, or will not be, regulated by the Commission. Primarily, Scope B does not apply to:

[12] To be clear, we recognize that it is unlikely, for economic reasons, that an entity other than BC Hydro or FBC would establish a public EV charging station in a location isolated from other public EV charging stations, at least until the EV sector is much more highly developed in B.C. than it is now.

- EV charging services provided by entities that are not a "public utility," such as
    - EV charging services that fall outside the definition of "public utility" because they lack the "for compensation" component, for example 'self-service' situations such as an in-home EV charging service provided by the owner of the EV that receives the charging service, and a fleet EV charging service provided by the owner of the fleet,
    - EV charging services that are provided by an entity that is exempt by the terms of the Act from being a public utility in respect of the service, i.e., a municipality or regional district providing the services within its own boundaries, or an employer or landlord providing EV charging services only to its employees or tenants and not for further resale,
- EV charging services (DCFC) provided to the public by Bakerview EcoDairy, which to our knowledge is the first and so far the only entity for which the Commission under s.88(3), with advance approval of the Minister of Energy, has ordered partial exemption from regulation under the Act,[13] and
- an entity or type of entity that will as a result of the Inquiry (or otherwise) be made fully or partially exempt from regulation under the Act, presumably by the Commission under s.88(3) with advance approval of the Minister.

Second, Scope B does apply to EV charging servicers provided by:

- BC Hydro or FBC, being existing public utilities that are fully regulated to sell electricity under the Act, that are engaged in EV charging services programs,[14] and that also sell electricity to most[15] of the other providers of EV charging services in the Province, and
- EV charging services provided by entities other than BC Hydro and FBC and that are not exempt or exempted from regulation under the Act.

In BCSEA-SCBC's view, different considerations apply to each of these two situations, and this should be kept in mind throughout the discussion of the Scope B topics.

5.2 Question 4. Should the rate design of EV charging stations be established under a public utility's traditional cost of service model or some other model? And within that context, what are the customer pricing options (e.g. energy-based rate vs. time-based rate)?

Other than the traditional, or "full," cost of service model, the potential options for economic regulation of EV charging services might include:

- performance based rate making (PBR), such as the PBR mechanisms approved by the Commission for FBC and FortisBC Energy Inc. (natural gas) for 2014-2019,

[13] Bakerview EcoDairy Ltd. ~ Application for Exemption from Part 3 of the Utilities Commission Act for Electric Vehicle Charging Service Providers ~ Final Order, G-71-16, 2016-05-19 (link)
[14] For its part, FBC's December 22, 2017 application for Commission approval of a new Rate Schedule 96 for EV Charging Service at FBC-owned EV charging stations, and the Commission's Order G-9-18 approving interim rates, apparently acknowledges rates regulation by the Commission under the Act (link)
[15] Some providers of EV charging services are or will be supplied with electricity by wholesale customers of BC Hydro or FBC, such as municipal electrical utilities and special customers such as YVR, SFU and UBC.

- index based rate-making (IBR), such as the proposal by Creative Energy in its 2018-2022 revenue requirements application under consideration by Commission,[16]
- the Commission's Thermal Energy Systems Regulatory Framework,[17] and
- a 'custom-made' framework for economic regulation of those EV charging services that are or will be regulated by the Commission.

Of these alternatives, PBR is not suitable, because it is used for mature public utilities that have a solid foundation of cost-of-service based rates and rate design. Similarly, index-base rate-making is predicated on the existence of Commission-approved cost-of-service based rates and rate design.

The TES Regulatory Framework is not directly applicable to EV charging services, although it contains elements and implements concepts that could be applied to the design of a 'custom-made' framework for regulation of EV charging services. We offer the following comments:

1. Time is of the essence in developing the EV sector and fostering the establishment of EV charging stations and services in B.C. To the extent possible, an immediate priority should be to clarify and remove from economic regulation those EV charging services that do not warrant such regulation.
2. The AES Inquiry and the development of the TES regulatory framework took several years and involved multiple stages. While the lessons learned would help to shorten the development of a regulatory framework for certain EV charging services situations, EV charging services have their own challenges for regulation, including a much more rapid pace of development.
3. It is beyond the scope of this submission to explore further what a regulatory framework for certain EV charging service situations could look like. However, we are open to consideration of possibilities.

Regarding customer pricing options, we have the following comments.

1. While there are some potential interconnections, we see customer pricing options as a topic that is basically quite different than the cost of service, or alternative, basis for regulation.
2. BCSEA-SCBC believe that the Commission should not attempt to select a preferred pricing model, certainly within this Inquiry.
3. EV charging services are amendable to a wide variety of potential pricing models, in addition to energy based (per kWh) and time based (per minute). These could include combinations of types of pricing and bundling with other services as disparate as parking and net metering.
4. EV drivers differ considerably in the form of pricing model that best suits their own situation. This may also differ in terms of Level 1, Level 2, Level 3 and potentially Level 4 charging equipment. And, it may differ for the same EV driver depending on, for example, whether a charging session is a 'top-up' or a home base situation.
5. It is not the case that EV charging service provides only electrical energy, measurable in kWh, to the customer. EV charging service also provide the customer with the use of the 'make-ready' infrastructure, the charging equipment, the space to

[16] link
[17] Thermal Energy Systems Regulatory Framework Guidelines, link

park the vehicle, and payment services. All these components of the EV charging service, including the electrical power, come at a cost. In principle, it is appropriate for all of these costs of service to be recovered through the pricing model (or some other transparent mechanism). This means that while a per kWh pricing model may be perfectly appropriate in a given situation, other models, such time-based pricing, may be appropriate in other situations.

5.3 Question 5. Should the EV charging station service rate be based on a public utility's existing wholesale or commercial retail rate or some other rate?

In general a regulated EV charging service's rate should be based on its cost of service, including its cost of electrical power. An EV charging service's cost of power will depend on the tariff under which it purchases power to supply a particular EV charging station. The tariff that is applicable will vary according to the power requirements (demand and energy) of the EV charging station and as well as any other power requirements that contribute to the provider's combined load from the electricity provider.

Where the regulated EV charging service provider is BC Hydro or FBC, then there would be various potential ways to determine the cost of power for the purpose of determining (together with other costs of service) the appropriate price for EV charging service to EV drivers. One way would be to use whatever would be to use as a proxy the tariff that would apply if the EV charging station was a customer of BC Hydro or FBC as the case may be. Another way would be to use the utility's incremental cost of power, as proposed by FBC in the December 2017 DCFC application.

BCSEA-SCBC have the following comments:

1. The question of how to determine the cost of power as a component of the cost of service for the purpose of determining an approved price for EV charging services provided by FBC or BC Hydro is one element of the larger question of the principles and objectives that should apply to FBC's or BC Hydro's pricing, and cost recovery, for specific EV charging service investments.
2. Given the public interest in encouraging the development of the EV sector in B.C. and the associated availability of publicly available EV charging services provided by BC Hydro and FBC as well as other entities, and the early development stage of the EV sector in B.C., BCSEA-SCBC's view is that the Commission should take a staged approach. In the first stage, while EVs and EV charging services are undergoing early rapid development, the Commission should take a purpose-oriented approach to the pricing and cost recovery of EV charging services by BC Hydro and FBC. During this first stage, the Commission should not attempt to apply the types of meticulous cost of service analysis that might be more suitable in a later stage if and when BC Hydro and FBC are providing EV charging services in a relatively mature EV market situation.
3. In any event, the Commission should take into account that EV charging services by BC Hydro and FBC are intended not only to serve the market for EV charging but also to develop the market for EV charging. The pricing for BC Hydro's and FBC's EV charging services, whether time-based, energy-based, or some combination, must not only recover costs to a reasonable and acceptable extent but must also encourage usage of the charging service. This is an important aspect of low-carbon electrification.

5.4 Question 6. Should public utilities include EV charging stations in their regulated rate base or through a separate non-regulated entity?

BCSEA-SCBC offer the following comments:

1. It is noted that in considering the question as a whole, it would be appropriate to consider the concept of a separate regulated entity as well as a separate non-regulated entity.
2. That said, before (logically and chronologically) considering separate corporate entities, whether regulated or unregulated, it would be appropriate to consider measures such as accounting treatments. Requiring BC Hydro and/or FBC to create separate corporate entities for EV charging services could be costly, time-consuming and potentially disruptive.
3. During the early stage of development of EVs and public EV charging services in B.C. the relatively small investments by BC Hydro and FBC in public EV charging services should be within their respective revenue requirements.
4. For BC Hydro, it is noted that under Direction No. 7, as amended by Order in Council No. 590, BC Hydro's rates for the fiscal periods commencing fiscal 2017 are determined independently of its rate base and equity. In other words, BC Hydro would not receive an incremental 'return on equity' due to its investments in EV charging services.
5. Regarding FBC's December 2017 DCFC application, the status quo is that "FBC is directed to separately track and account for all costs associated with the EV DCFC stations and exclude all such costs from its utility rate base until the Commission directs otherwise."[18]

5.5 Question 7. If public utilities provide EV charging services within their regulated business, is there a risk of cross subsidization from other rate classes to support this new service and if so, is the proposed rate design potentially unduly discriminatory?

BCSEA-SCBC have the following comments:

1. There is always a risk of cross-subsidization between rate classes. This risk is managed through cost of service rate design applications. In these applications, a revenue/cost ratio is estimated for each rate class, a 'range of reasonableness' is determined, and adjustments may be ordered if warranted.
2. It is not necessarily clear if an EV charging service by BC Hydro or FBC would utilize a new, separate rate class or a new rate schedule within an existing rate class.
3. We acknowledge that there is a potential risk of cross-subsidization from other customers to the customers of EV charging services operated by BC Hydro or FBC, particularly in the early stage when the focus is on development of the market for EV charging services.
4. Consideration should be given to the March 1, 2017 low-carbon electrification amendments[19] to the Greenhouse Gas Reduction (Clean Energy) Regulation[20] under the *Clean Energy Act*. Section 18 of the CEA provides that the Commission must set

[18] Order G-9-18, section 2 (link)
[19] Orders in Council Nos. 100 and 101/2017
[20] B.C. Reg. 102/2012

the rates of a public utility to allow it to recover its costs of "prescribed undertakings" for the purpose of reducing GHG emissions. The amendments prescribe programs and projects that encourage low carbon electrification as undertakings under CEA s.18, allowing the costs to be recovered in the rates of BC Hydro or another public utility. The amendments also set out a methodology for determining the "cost-effectiveness" of an electrification undertaking that is designed specifically for low-carbon electrification measures.

6.0 Other matters

6.1 Question 8. Any other matters that may assist in the effective and efficient review of the Inquiry.

After the Commission Inquiry Panel reviews the interveners' March 16, 2018 submissions and the comments provided by members of the public at the scheduled community input sessions it would be useful for the Panel to provide the Inquiry participants with an updated discussion of the scope of the Inquiry and the issues the Panel intends to address.

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