

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

INFORMATION REQUEST NO. 1 TO COMMUNITY ENERGY ASSOCIATION

A. BASIS FOR EV CHARGING SERVICE REGULATION EXEMPTION Reference: Exhibit C34-2, pp. 2, 6, 7–8

1.0 Basis for regulation

On page 2 of Exhibit C34-2, Community Energy Association (CEA) states: Not having a blanket exemption for charging for electricity for these [Level 2] stations is currently hindering adoption of EV charging in some sectors such as strata corporations.

1.1 Please comment on whether, in the view of CEA, there are other factors (besides the lack of a blanket exemption) that are hindering adoption of Level 2 EV charging. Please explain whether the CEA considers that a utility regulation exemption alone will promote increased EV uptake.

CEA Response: Utility regulation is currently one of several barriers facing prospective EV owners in strata complexes. Without adjustment to utility regulation, the other barriers are more difficult to overcome. One example of a barrier to adoption of L2 charging in strata complexes is how parking is administered under the Strata Property Act. The diversity of parking stall ownership and the difficulty involved in altering parking stalls adds administrative barriers to installing L2 chargers. There is also a low level of awareness among many strata boards and property managers about the approaches to charging and the financial and operational implications of L2 charging. There are many factors which contribute to EV adoption including technology, performance, availability of vehicles, perception, awareness, and charging availability. CEA expects that removing the utility regulation barrier will **contribute to an increase in L2 charging and EV adoption**. Assigning specific volumes of EV's to removal of specific barriers is difficult given the dynamic nature all the other variables influencing adoption. Identifying if a regulation is making it easier or more difficult for charging to happen is much less difficult. Removing the resale of electricity regulation for the L2 market is a step in the right direction.

On page 6 of Exhibit C34-2, CEA states: in small communities, DCFC [Direct Current Fast Charger] is currently operating as a regional monopoly for utilities given their unique cost and capability advantages... Currently, EV owners who have a practical or operational need for a fast charge are captive to the BC Hydro and FortisBC networks regionally as there are currently few other owner/operators. As more, large local governments deploy their own DCFC, this captivity will diminish in larger urban centers. ... In small communities, the captivity is greater and will continue for the foreseeable future in the absence of revised pricing direction from the commission.

1.3 Please discuss whether CEA believes that this “regional monopoly” is justification for utility regulation of DCFC in small communities, or explain otherwise.

CEA Response: CEA's perspective is that if regional monopolies continue to exist, there is justification for utility regulation of DCFC service delivery (e.g. response to failure, notification of planned outages) and

pricing in small communities. CEA's view is that if the nature of regional monopolies evolves, regulation should evolve with the market.

1.4 Please elaborate or provide examples of what "pricing direction" CEA believes would alleviate captivity of DCFC customers in small communities.

CEA Response: The answer to this question involves further study beyond CEA's current capacity. To encourage further competition in the DCFC space in small communities, a higher rate of compensation either for charging or for maintaining the stations as available (this may be conceptually similar to a 'delivery charge' for other forms of energy) to enable private sector entities to develop a profitable charging business model. The cost for charging has been weighed against the demand-elasticity for EV drivers (CEA is unaware of current research on this topic) as if the price is set too high, the decrease in volume will offset any additional revenue. For an 'availability charge' – e.g. compensation to the owner/operator for maintaining the station in a state of readiness, being responsive to unplanned outages, and being diligent in posting updates of planned outages and planned recovery times – a key question is what the source of the funding should be (e.g. riders on electric utility bills, provincial general revenue, gas taxes, etc.). Setting an 'availability charge' could be calculated by determining the expected number of charge events for each station, the revenue and cost per charge, and fixed costs (e.g. amortization, network fees, maintenance) and incorporating a 'reasonable profit' for the station operator. One rationale for an 'availability charge' is that a public good is delivered by maintaining the DCFC in a state of readiness and visibility and that this public good is enjoyed by EV drivers who do not regularly charge at a particular station. They are able to complete their journey due to confidence in there being a station if they need it.

1.4.1 Please clarify whether CEA is of the view that BC Hydro or FortisBC Inc. be required to provide a different rate schedule for the EV infrastructure class of service.

CEA Response: As noted in our submission, rate design should balance the public policy objective of accelerating electric mobility with ensuring utilities are not unduly penalized for owning and operating DCFCs. Beyond this general direction, CEA has not formed an opinion on if BC Hydro and/or FortisBC should be required to provide a different rate schedule. The answer to this question is dependent on the overall rate design chosen for DCFC users.

On pages 7 to 8 of Exhibit C34-2, CEA states: As the providers of capital and requiring service levels, small local governments hosting DCFC on their property and contracting with utilities to own and operate the DCFC can be viewed as customers of the utility. Currently these customers are captive given no other practical choices except the electric distribution provider locally. These customers, once the contracts are in place, continue to be captive for the life of the infrastructure.

BCUC could provide valuable assistance to small local governments by providing an oversight or dispute resolution mechanism to ensure utilities who own and operate municipally-funded DCFC meet their expectations. ... There may be a valuable role for BCUC to play in regulating (perhaps in a light-touch, complaint-based manner similar to small district energy systems) support services, particularly tier-2 and onsite support to ensure small local governments with limited capacity.

1.5 Please discuss whether CEA believes that the BCUC should also have a similar light-touch role for any site host/third-party providers who may own or operate municipally funded charging stations in future.

CEA Response: CEA believes that BCUC should also have a similar light-touch role for any site that exists in a regional monopoly. If there is a robust competitive market for DCFC ownership and operation in small communities, CEA believes that local governments can then negotiate with multiple potential service providers to find an agreement that works for everyone with service levels and penalty clauses for not meeting service expectations.

1.5.1 Please comment on whether CEA considers this potential role for the BCUC would still be appropriate in a fully competitive environment that could develop in the future.

CEA Response: CEA does not believe that BCUC light touch regulation would be required in a fully competitive environment.

Reference: Exhibit C34-2, p. 2 2.0 Exhibit C6-2, p. 5 BCUC Thermal Energy System Guidelines (TES Guidelines) p. 7 Class of cases exemption

On page 2 of Exhibit C34-2, CEA states: Not having a blanket exemption for charging for electricity for these stations is currently hindering adoption of EV charging in some sectors such as strata corporations.

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 49.1

2.1 In CEA'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?

CEA Response: If BCUC were to recommend a class of cases exemption, CEA's view is that several factors should be considered in establishing the cases including:

- Diversity of ownership in the market and barriers to entry – Level 2 stations have a high degree of diversity with many different types of entities owning and operating stations. They also have low barriers to entry. There is less diversity with DCFC and higher financial barriers to entry.
- Harm to utilities – Would exempting organizations from charging for electricity harm existing utilities? CEA's view is that for Level 2 chargers there would not be harm to utilities. Similarly, for Level 3 chargers, there should not be harm to utilities from other entities deploying DCFC depending on how utilities charge for the service (a specific tariff for EV charging stations or medium general service). However, in some cases, local infrastructure/capacity upgrades may be required, and a fair and reasonable approach to funding those upgrades would be needed.
- Criticality of infrastructure – Is there a case for regulation based on the critical nature of the infrastructure? Level 2 charging is typically not critical infrastructure whereas DCFC can be critical infrastructure depending on the number and proximity of other DCFC stations as well as the nature of their location (e.g. on a rural highway).
- The importance of being able to charge for electricity to the business model for charging stations
 - For level 2 stations, there are two cases where setting a price becomes important:
 - In situations where one entity (e.g. condo owner) needs to convince another entity (e.g. strata corporation) to allow installation and use of Level 2 on their (strata common area) meter for the use and benefit of the first entity (condo owner). In this case, the strata may wish to ensure that other owners are not financially disadvantaged by the charging station's use of electricity. Enabling

charging for electricity from Level 2 stations would remove one of the barriers to increased charging deployment.

- In situations where the station owner wishes to shape behavior of the charging users – e.g. leave when fully charged so others can use the station. This can be done with price signals if the owner is able to set a price for charging.
- For DCFC stations, in the absence of a flat-rate ‘availability charge’, setting a per-use price is typically important to station owner/operators.
- Interest of other parties in entering the market – Are there other parties who would likely own/operate stations if there were an exemption? In the case of Level 2, CEA believes that the answer is ‘yes’. In the case of DCFC, there are likely other actors who would own/operate DCFC in large urban areas. In smaller communities where the total population and EV penetration is lower, which means fewer charging events, it is unlikely there would be many private sector entities interested in owning/operating given the low volume over the short to medium term.

Further, what sections of the UCA, in CEA’s view, should EV charging service be exempt from?

CEA Response: EV charging services should be exempt from ‘resale of electricity’ provisions which currently do not allow entities that are neither utilities nor local governments from charging for EV charging services.

2.2 Does CEA 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.

CEA Response: Per answer to 2.1, CEA believes all Level 2 chargers should be exempt and DCFC in large urban centers should be exempt. DCFC in small communities may require continued regulation for the short to medium term. CEA maintains an open mind about structuring a workable market, advancing the public policy of accelerating EV adoption, and meeting local community needs.

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.

2.3 In CEA’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.

CEA Response: Such an exemption would be appropriate if BCUC chose not to exempt all Level 2 charging. CEA believes all Level 2 charging should be exempt. DCFC would typically not be deployed in a strata environment. CEA believes there is a stronger case for regulation of DCFC than of Level 2.

Reference: BCUC Inquiry into FortisBC Energy Inc.’s Offering of Products and Services in 3.0 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.

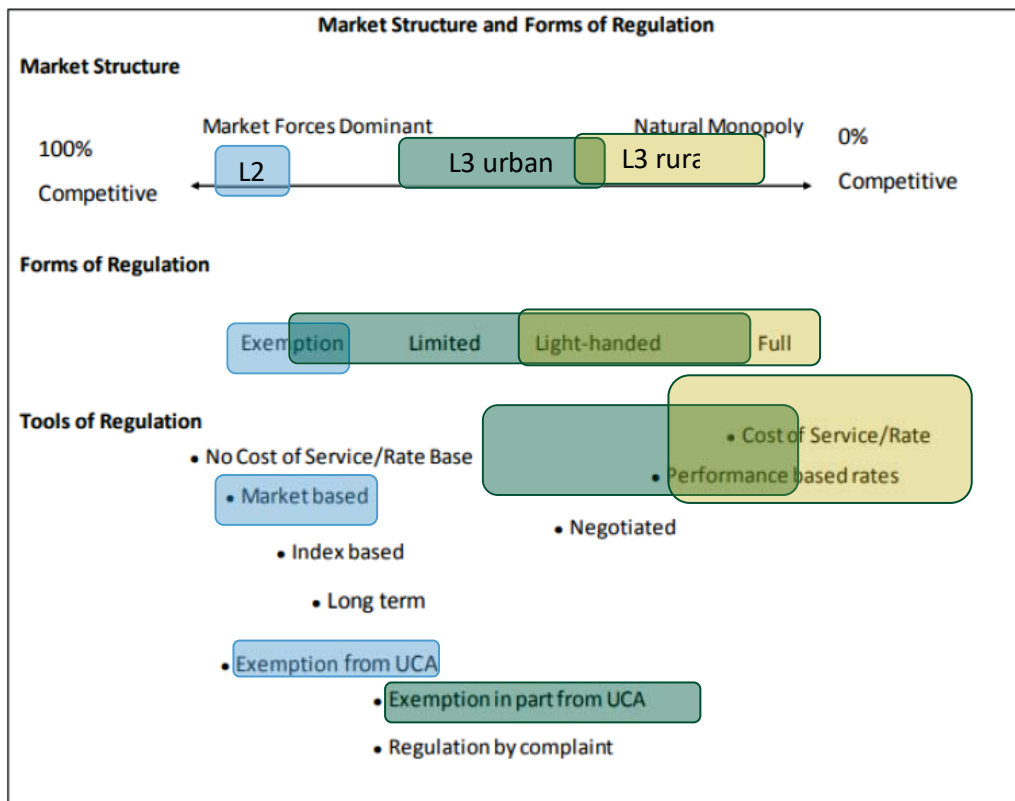
CHART HERE – page 3 of BCUC IR to CEA

3.0 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?

CEA Response: CEA believes that it is reasonable to consider market structure when considering form of regulation in addition to other considerations as expressed in our response to question 2.1. (considerations for exemptions)

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



CEA Response: Current market structure puts Level 2 EVSE in the far left in a highly competitive market, urban DCFC in the middle and rural DCFC towards the right. CEA’s perspective is that Level 2 charging is competitive and should be exempted. CEA has not finalized its opinion on regulation of urban DCFC.

Rural DCFC could benefit from regulation defining both revenue associated with the station (price per charge and possibly an 'availability charge' akin to a 'delivery charge' in other circumstances) as well as services provided. Service levels could be negotiated individually or set globally. A global service expectation for all DCFC would help to ensure high quality service across BC, make determining cost of service easier, and ease administration for organizations running multiple DCFC stations in various areas.

B. INVESTMENT DECISION Reference: Exhibit C34-2, pp. 5, 7 4.0 Business model – DCFC

4.0 On page 5 of Exhibit C34-2, CEA provides an illustrative example of a Level 3 Charging Station Business Model. Further, CEA states that the example "is known to be incomplete regarding differences in utility vs non-utility ownership and operation."

CEA TABLE HERE

4.1 Please submit a live working model or excel spreadsheet of CEA's sample business model.

CEA Response: CEA has attached an excel file with the original and a revised model that is easier to compare to the CoV model.

4.2 Please clarify CEA's statement in that "[the illustrative example] is known to be incomplete regarding differences in utility vs non-utility ownership and operation." Please identify the incomplete factors and explain how they may impact CEA's analysis and conclusion.

CEA Response: Our model does not include repairs (non-warranty and vandalism) as they are unpredictable and can be variable, differentiated by urban vs. rural locations (travel time for repairs), site specific safety and visibility features, and other factors that are difficult to model. Staff time for tier-2 support is also difficult to estimate and could vary depending on the approach taken by the owner/operator and service levels provided.

There may be additional costs in the BCH MGS Tariff that CEA may have missed and CEA has not configured the model for other tariffs.

We have not made assumptions about WACC (Weighted Average Cost of Capital) to be applied to capital required. For the purposes of this model, we have assumed capital is covered by grants (which it was in Accelerate Kootenays and most DCFC have had a high percentage of capital covered by grants).

It is unclear as to how long grant funding will continue to be available.

We have not made assumptions about income tax rates or the potential for accelerated capital cost recovery.

Note that the break-even point for number of charge-events per day is heavily influenced by the gross revenue per event, which is composed of the average kWh multiplied by the rate. CEA has not included procurement management costs (e.g. selection of vendors, negotiation of contracts and deployment planning).

4.3 Please elaborate on the assumption that utilities do not charge themselves demand charges and indicate how or where a utility would allocate the inherent cost of the peak load on generation capacity and infrastructure that is associated with a public EV charging station.

CEA Response: CEA has not found, in conversations with utility staff or in cursory investigation, evidence of utilities including demand charges for services that are their own. Utilities would be better positioned to answer the question in detail of demand charges for their own services and how the internal accounting/allocation is done for peak load. If CEA were to speculate, it is possible that utilities could argue that services for their own operations are under their control and so could be curtailed if necessary.

4.4 Based on CEA's sample business model, it appears that there are no economies of scale for a site host/third-party provider to own or operate 10 DCFC stations. Please discuss whether there are any economies of scale to own or operate multiple DCFC stations.

CEA Response: The areas where economies of scale could emerge include procurement (e.g. vendor selection, contract negotiation, deployment planning) and possibly tier-2 support. CEA has not found conclusive evidence of this yet as it is dependent on the approach, level of service, and staffing by the owner/operator.

4.5 Please clarify if 'station' means a charging port or a general charging facility that may or may not have multiple charging ports.

CEA Response: CEA's assumption is that 'station' is a 50kW DCFC with 1 CCS and 1 Chademo ports.

4.5.1 If the latter, is the model based on one station having one charging port? 4.5.2 Please clarify if there are any economies of scale to have multiple ports per station. What are the costs and benefits of multiple ports per station?

CEA Response: CEA has not modeled multi-port vs single-port stations.

4.6 Please clarify if the 'Demand charge' in the model should be assessed for the peak demand over 35kW or the total peak demand of 50kW (i.e. Rate * 15kW or Rate * 50kW).

CEA Response: Demand charge is calculated based on BCH mgs tariff demand charge above 35kW for a 50kW DCFC (50-35). Note, of course, 25kW DCFC's would not incur such a demand charge and 150kW DCFC's would likely necessitate some on-site batteries or other approach to moderate grid impacts.

On page 7 of Exhibit C34-2, CEA states: While exemptions to electricity resale are possible for DCFC and were explored by Accelerate Kootenays, the cost advantages and distribution asset management capacity that utilities have make them the only practical owner / operator for small local governments at this time.

4.7 Please elaborate on the cost advantages and disadvantages of public utility vs site host/third party ownership models. Are there any other considerations beside costs? Reference: Exhibit C34-2, p. 5

CEA Response: Initial capital cost is a barrier to entry that can be addressed for local governments as we have seen with regional collaboration and partners (e.g. Community Energy Association) working together to access grants for the capital cost of DCFC stations. Ongoing costs of ownership and operation remain a significant challenge for small local governments. CEA has outlined a Level 3 Charging Station Business Model that demonstrates the costs for a small local government to own and operate DCFC can be higher than the costs of a utility to own and operate the same infrastructure. A significant example of this is asset renewal, which on a DCFC with a 10-year life, requires local

governments to contribute approximately \$3,500 per year toward their Asset Renewal Fund. This cost would significantly burden the budgets of smaller local governments. Lastly, many of BC's municipalities face limited capacity. Often, they have less than 10 staff that provide the full scope of municipal services. These communities are not in a position to provide the support services, in particular onsite repairs and maintenance, as owners and operators of DCFC equipment.

5.0 Exhibit C12-2, Appendix 5 Business Model – City of Vancouver

On page 5 of Exhibit C34-2, CEA provides an illustrative example of a Level 3 Charging Station Business Model.

In Exhibit C12-2, Appendix 5, FortisBC Inc. includes a City of Vancouver (CoV) report (CoV Report) titled "City of Vancouver User Fees for City Owned and Operated Public Electric Vehicle Charging Stations Report". On page 8 of the CoV Report, Table 3 shows the proposed initial profit-less calculations for a DCFC station as follows:

COV TABLE IN ORIGINAL PDF

5.1 To the extent possible, please restate CEA's illustrative example Level 3 Charging Station Business Model in a similar format as provided by the CoV

CEA Response: see excel model revised and submitted