

British Columbia Utilities Commission –
An Inquiry into the Regulation of
Electric Vehicle Charging Service –
Project No. 1598941-
Phase 2

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Introduction

Phase 1

By Order G-10-18, the Commission has established an Inquiry to review the regulation of electric vehicle (EV) charging service.

In Order G-9-18 dated January 12, 2018, relating to the FortisBC Inc. EV charging service application, the Commission noted that the rate design and rates for EV charging, including the services provided by EV charging stations, are currently in an early development stage in BC and other entities may emerge over time to provide EV charging service.

On November 26, 2018, the BCUC issued the Phase 1 Report.

In the Phase 1 Report, the Panel recommends that the Minister of Energy, Mines and Petroleum Resources issue an exemption with respect to BCUC's regulation of EV charging services but that the BCUC retain oversight on safety.

Phase 2

Phase 2 of the Inquiry will focus on the regulatory framework for EV charging service providers that are have not been recommended for exemption (e.g. BC Hydro and FortisBC Inc.) (non-exempt public utilities).

A. Regulatory framework for non-exempt public utilities (pp. 47–48 of the Phase 1 Report)

A.1.1 Can both regulatory models – little or no regulation for those exempt public utilities and the participation of non-exempt utilities – co-exist?

Response:

Yes, exempt and non-exempt public utilities can co-exist. However, the non-exempt (regulated) utilities may have an advantage as their investment and operating costs can be financed by the ratepayer and/or taxpayer rather than shareholders and/or banks and through the regulatory compact their risk of stranded assets is low or non-existent.

A.1.2 In the absence of price regulation, how can EV charging providers that are not otherwise public utilities (which would be exempt from regulation in accordance with the Panel's recommendation) be protected from being undercut by non-exempt public utilities?

Response:

In the absence of price regulation, protecting private (non-regulated) EV DCFC providers from being undercut by non-exempt (regulated) public utilities is difficult since the regulated public utilities would have access to rate-base financing for DCFC stations and the regulatory compact for cost recovery. This is an argument for the non-exempt public utilities to provide DCFC stations through their non-regulated operations.

A.1.3 Should non-exempt public utilities be restricted to participate only in remote geographical locations that are currently uneconomical for exempt EV charging providers to serve?

Response:

No. If the remote geographical locations are currently uneconomical for exempt EV charging providers to serve, then careful consideration must be given if the non-exempt public utilities were restricted to participate only in those remote geographical locations then the risk of stranded assets will be a concern to the ratepayers. The exempt EV charging providers of those DCFCs should only be located in geographical locations that have a reasonable expectation of a break-even cost. Otherwise, the ratepayers are subsidizing the EV manufacturers. If EVs are used in remote geographical locations, then common sense dictates that the hybrid PHEV should be the preferred EV of choice. The use of PHEVs in those remote geographical locations strikes a proper balance between GHG objectives of the BC Government, and the cost/risk to the ratepayer or taxpayer.

A better question might be why are not the EV manufacturers and EV dealers not providing DCFCs in those remote geographical locations, or are they delaying providing this service because of government intervention from which they will benefit from without incurring any financial risk. Tesla is somewhat of an exception in the provision of DCFCs, and the other EV manufacturers should follow Tesla's example.

A.2.1 If the provision of EV charging is exempt from regulation, is there any justification for non-exempt public utilities to provide EV charging services?

Response:

No, unless it's government policy to permit the non-exempt public utilities to compete with the exempt public utilities in a less than fair and competitive market place. If government policy is the reason, then the taxpayer should be paying for the DCFC stations, not the ratepayer.

A.2.2 If the role of non-exempt public utilities is to kick-start the market, how can the BCUC determine when the kick-start is no longer needed?

Response:

The government has assigned the role to kick-start the DCFC market to the non-exempt public utilities. The government is permitting the non-exempt public utilities to increase the capital and operating portions of their rate-base which in turn contributes to the increase in energy cost for all ratepayers.

For the Commission to determine when the kick-start for the provision of DCFCs is no longer needed, it will have to rely on input from the users of DCFCs and input from the exempt public utilities. Basically, this may require further public process to resolve the matter at some future time.

A.2.3 What is the role of those utilities once that kick-start is completed?

Response:

Once the non-exempt public utilities have kick-started the provision of DCFCs, it should withdraw from the market. However, because of their investments in the market, this will result in stranded assets. Unless there is a buyer for the non-exempt public utilities' DCFCs, then the ratepayer will have to shoulder any costs for continuing or exiting the market as part of the regulatory compact.

A.2.4 If there are stranded assets at that time how should they be dealt with?

Response:

The rationale for permitting a non-exempt utility to compete in a free market place regardless of the reason comes with a risk of losses and/or stranded assets.

Normally, non-exempt public utilities build their case for recovery of stranded asset costs by citing the "**regulatory compact**." The unwritten agreement grants a utility an exclusive franchise to operate in a service territory free from competition. In return, the utility is required to serve all customers without discrimination. The utility's profits are also regulated to ensure reasonable pricing.

However, the regulatory compact may not apply since the non-exempt utilities have not been granted an exclusive franchise or a service territory free from competition.

If this is the case, then the government should cover the costs incurred by removing the amount from BC Hydro dividend. If the Government does not cover the cost, then the ratepayer will have to bear the cost as there is no one else.

A.3.1 If non-exempt public utilities participate in the EV charging market, should EV charging customers constitute a separate class from which costs associated with EV charging infrastructure is recovered?

Response:

If non-exempt public utilities are permitted to participate in the EV charging market, EV charging customers may constitute a separate class from which costs associated with EV charging infrastructure is recovered.

In this case, the Clean Energy Act (the CEA) applies as follows:

“Rates

8 (1) In setting rates under the Utilities Commission Act for the authority, the commission must ensure that the rates allow the authority to collect sufficient revenue **in each fiscal year** to enable it to recover its costs incurred...”.

The authority in the CEA is BC Hydro; and

In the case of a public utility including BC Hydro:

18(2) In setting rates under the Utilities Commission Act **for a public utility carrying out a prescribed undertaking, the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking.**

If the service will not be offered in a separate non-regulated business, then DCFC EV charging customers should constitute a separate class from which costs associated with EV charging infrastructure is recovered. This may avoid the issues of stranded assets and cross-subsidies.

A.3.2 Or should the service be offered in a separate non-regulated business?

Response:

Yes, the service should be offered by a separate non-regulated and exempt business to avoid issues such as cross-subsidization, stranded assets, cost recovery of strand assets and other associated costs via the Regulatory Compact, etc.

A.3.3 What are the implications of each of these regulatory models?

Response:

If the service is offered by a separate non-regulated and exempt business, then the issues of rate setting, stranded assets and cross-subsidies no longer are the concern of the Commission and the ratepayers. The thorny issues of CEA and GGRR are no longer applicable.

On January 20, 2017, the Commission, in G-5-17, made its initial decision in respect of the Rate Design, denying most of the low-income proposals on the basis it lacked jurisdiction to set such rates. It considered that providing utilities to low-income customers at reduced rates would be unjust, unreasonable, and unduly discriminatory, and therefore beyond the BCUC's jurisdiction¹.

Surely, if the Commission considers the above to be the case to be true, would not the setting of incentive or preferential rates for the a special class of EV owners lead to unjust, unreasonable, and unduly discriminatory rates as well, if one considers the cost of purchasing an EV versus a more conventional automobile (ICE) that would be more affordable to the lower income groups.

A.4.1 Should other customer classes of non-exempt public utilities subsidize costs associated with the provision of charging services that can't be recovered from EV charging customers?

Response:

No. The taxpayers should subsidize the cost associated with the provision of charging services that can't be recovered from EV charging customers for the simple reason that this is government policy.

A.4.2 How much of the cost is it appropriate for them to subsidize – should there be a cap?

Response:

No, but if the Panel feels the need to subsidize EV charging then a cap should be put in place. The EV owners do not need a subsidy. If you can afford an EV, you can afford the costs for DCFC charging. Any subsidy is a cross-subsidy and the corollary to G-5-17 is: "what is good for the low-incomes should also apply to the higher incomes." Hence, no subsidies should be permitted to those who can afford the more expensive EVs.

¹ <https://www.harpergrey.com/knowledge/bcca-denies-leave-appeal-decision-bcuc-reduced-utilities-rate-low-income-ratepayers-unjust-unreasonable-unduly-discriminatory/>

A.5.0 If assets are stranded as a result of changing technology or other factors, who should pay for the potential stranded EV charging assets which may be in the non-exempt public utility's rate base?

Response:

Obviously, in the case of regulated public utilities, the ratepayers are at risk from the use of the regulatory compact by the public utilities to recover all costs due to assets that are stranded as a result of changing technology or other factors. Otherwise, the taxpayers of BC should be at risk.

A.6.1 In the context of BCUC economic regulation, what regulatory justification is required to allow existing utilities to cross subsidize EV charging services?

Response:

To allow a cross-subsidy between customers with and without EVs is most likely discriminatory against those customers who cannot afford the more expensive EVs. However, section 58.1 (6) of the Utilities Commission Act may permit this provided:

“Nothing in subsection (3) prevents the commission from setting rates for the authority, but the commission, after March 31, 2010, may not set rates for the authority such that the revenue-cost ratio, expressed as a percentage, for any class of customers increases by more than 2 percentage points per year compared to the revenue-cost ratio for that class immediately before the increase.”

Regulatory justification can be acquired by other various means: political, regulation, legislation, or directives to permit public utilities to engage in “non-traditional” services.

A full and unbiased accounting analysis must be undertaken by the Commission to determine the extent of cross-subsidization.

A.6.2 If EV charging services add incremental load, does that justify cross-subsidization?

Response:

No. Assuming the growth in the EV market will occur over time; then the incremental load will appear in any case so cross-subsidization is not justified.

The need and justification for the authority and the non-exempt public utilities to engage in EV charging services is still questionable. If the authority and non-exempt public utilities employ a “deregulated or non-regulated” arm of their operation to engage in the provision of EV charging

services, then the question of incremental load, cross-subsidization, stranded assets, etc. ceases to exist.

A.6.3 Would the incremental load appear without the subsidization?

Response:

Yes, since the growth in the EV market will cause the incremental load (DCFCs) to appear and the DCFCs could be financed by the private sector. Tesla already provides its own DCFC stations.

There is evidence below that suggests Chargepoint is positioning itself for rapid expansion of its charging network and the need for public utility investment in DCFCs may be diminishing more rapidly than expected. If this is the case, then BC should not discourage them from investing in DCFCs by allowing regulated public utilities to compete against these private sector entities.

Electric vehicle charging infrastructure is becoming big business and ChargePoint is a big part of that as it raises \$240 million from Daimler, BMW and others to accelerate their charging station deployment. ChargePoint has raised a lot of money in recent years, more than half a billion at this point, and it is emerging as an important player in the EV charging point. Existing investors BMW i Ventures, Braemar Energy Ventures, Linse Capital, and Siemens all invested. ChargePoint also secured new important investors: American Electric Power, Chevron Technology Ventures, ***Canada Pension Plan Investment Board***, Daimler Trucks & Buses, GIC, and Quantum Energy Partners.²

ChargePoint announced a new pledge to accelerate the deployment of electric vehicle charging infrastructure by having 2.5 million charge points in operation by 2025.³

A.7.1 What are the implications of the province’s energy objectives, as stated in the Clean Energy Act, with respect to non-exempt public utilities providing potentially subsidized EV charging services?

Response:

The Clean Energy Act (CEA) applies to the British Columbia Hydro and Power Authority; certain sections of the CEA and Clean Energy Act, Greenhouse Gas Reduction (Clean Energy) Regulation apply to public utilities as well.

Section 18 of the CEA refers to public utilities involved in greenhouse gas reduction as follows:

Greenhouse gas reduction

² <https://electrek.co/2018/11/28/chargepoint-raises-240-million-daimler-bmw-accelerate-ev-charging-infrastructure/>

³ <https://electrek.co/2018/09/14/chargepoint-million-electric-vehicle-charge-points-2025/>

18 (1) In this section, "prescribed undertaking" means a project, program, contract or expenditure that is in a class of projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia.

(2) In setting rates under the Utilities Commission Act **for a public utility carrying out a prescribed undertaking, the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking.**

(3) The commission must not exercise a power under the Utilities Commission Act in a way that would directly or indirectly prevent a **public utility** referred to in subsection (2) from carrying out a prescribed undertaking.

(4) A **public utility** referred to in subsection (2) must submit to the minister, on the minister's request, a report respecting the prescribed undertaking.

(5) A report to be submitted under subsection (4) must include the information the minister specifies and be submitted in the form and by the time the minister specifies.

However, the Clean Energy Act, Greenhouse Gas Reduction (Clean Energy) Regulation definition of "**undertaking electricity**" means electricity that is provided to customers in British Columbia as a result of an undertaking and is in addition to electricity that would have been provided had the undertaking not been carried out. Regardless of who provides the EV charging services, the additional electricity would be provided as it is tied to the growth of EV sales.

With respect to non-exempt public utilities providing potentially subsidized EV charging services, the Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR) states a project, program, contract or expenditure supporting a standards-making body in its development of standards respecting technologies that affect the use of electricity by other technologies that use electricity instead of other sources of energy that produce more greenhouse gas emissions.

Section 3(d) (ii) of the GGRR may permit the undertaking to be less than cost effective but the Commission under the CEA section 18(2) must set rates that allow the public utility to collect sufficient revenue **in each fiscal year** to enable it to recover its costs incurred with respect to the prescribed undertaking.

Therefore any subsidization of a non-exempt public utility is restricted to within a fiscal year.

A.7.2 Are there noneconomic justifications such as environmental benefits or meeting greenhouse gas reduction targets?

Response:

Yes, but the data for GHG reduction for 50% of all passenger vehicles in BC today is only in the 25% range of the 2030 target. Note the 50% number exceeds all expectations for the near future.

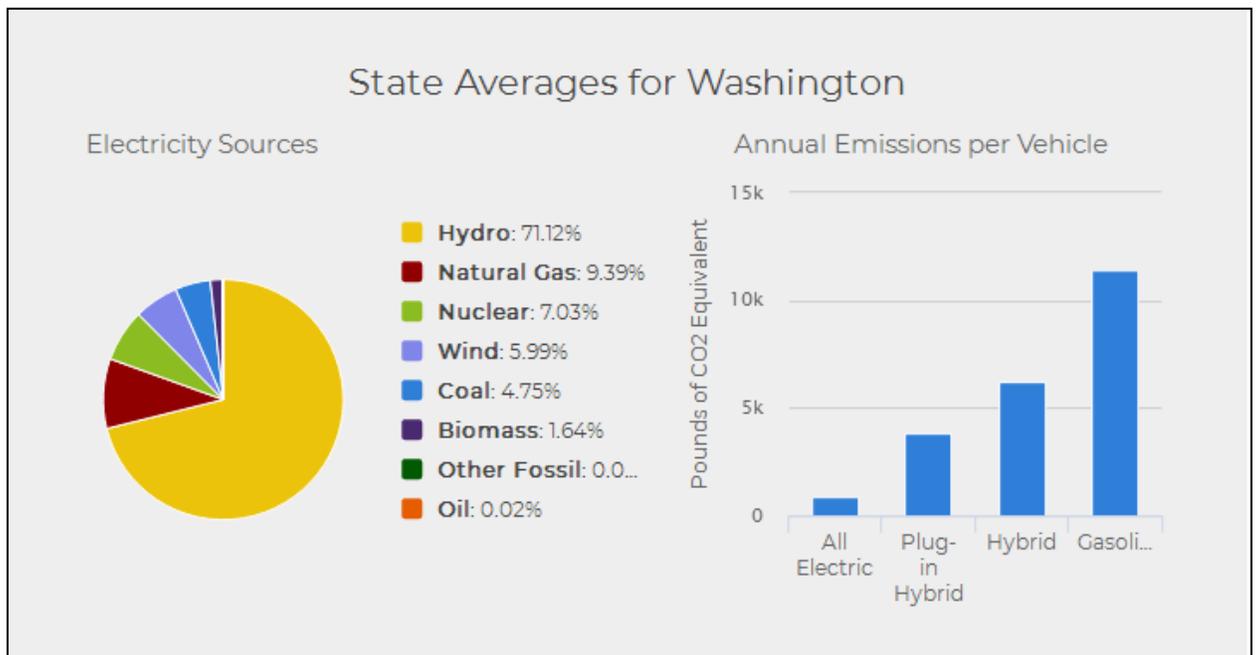
Total greenhouse gas emissions in British Columbia in 2007 were 67.3 megatonnes (Mt) CO₂e.

The following targets are established for the purpose of reducing BC greenhouse gas emissions:

- by 2030 and for each subsequent calendar year, BC greenhouse gas emissions will be at least 40% less than the level of those emissions in 2007;
- by 2040 and for each subsequent calendar year, BC greenhouse gas emissions will be at least 60% less than the level of those emissions in 2007; and
- by 2050 and for each subsequent calendar year, BC greenhouse gas emissions will be at least 80% less than the level of those emissions in 2007.

The total greenhouse gas emissions reductions are 26.92 megatonnes (Mt) CO₂e by 2030 and for each subsequent calendar year; 40.38 megatonnes (Mt) CO₂e by 2040 and for each subsequent calendar year; and 53.84 megatonnes (Mt) CO₂e by 2050 and for each subsequent calendar year.

Assuming information from Washington State⁴ applies to BC, then each BEV that replaces an ICE will contribute 10,000 pounds reduction. (see chart below)



⁴ https://afdc.energy.gov/vehicles/electric_emissions.html

In 2017, there were 2,964,236 registered vehicles in BC weighing less than 4,500 kilograms. If we assume BEVs replace about 50% of the current passenger cars in use today (or 1.5 million vehicles) and that replacement saves 10,000 pounds per year of GHG per vehicle, then the total reduction in GHG would be 6.8 megatonnes.

As the total greenhouse gas emissions reductions are to be 26.92 megatonnes (Mt) CO₂e by 2030, then the EV contribution of 6.8 megatonnes represents about 25% of the 2030 target.

After performing a calculation of 50% of the current passenger vehicles (ICE) in BC being replaced by EVs, there appears to be some initial non-economic justification such as environmental benefits or meeting greenhouse gas reduction targets. However, there may be air quality health benefits from the use of BEVs in urban areas.

When comparing a BEV to planting a tree, the tree will be offsetting about 22kg (or 48.4pounds) of carbon dioxide per year. So, one EV (10,000 pounds/yr) is equivalent to planting about 206 trees. We would need to plant 309,267,893 trees to obtain the same reduction as converting 1.5 million cars to BEVs. The planting tree density is about 1500 trees per hectare so we would have to plant 206,178 hectares. BC usually plants about 250,000 trees/year. As illustrated below, planting trees may not be an option.

Lana Popham⁵, agriculture critic for the NDP, said farmers in the Cariboo are alarmed so much arable land is being replanted to forest, and the practice needs to be stopped.

"There are many concerns. A major one of course is losing food-growing lands," she said. "[Local farmers] also feel this company is gutting their community. They are taking away economic opportunities. They are taking over properties. They are tearing down houses so they don't have to pay property tax. They are contributing nothing to this community at all and somehow they are benefiting from it through a carbon offset program."

The provision of DCFC stations outside urban areas should be given serious consideration as there is no cost-benefit analysis of other GHG reduction options available in this Inquiry. Also, even with 50% of the current passenger fleet converted to EVs, the greenhouse gas reduction is only 25% of our current target. This being the case and using an extremely high projection of EV take up, should public utilities be engaged in this activity or should it be left to the EV suppliers and DCFC station providers?

If the take up of electric cars is so insignificant⁶, the impact on greenhouse gas targets will not occur and these luxury EVs will be the new "Opera Cars" of the affluent in this century much like they were in the last century.

⁵ <https://www.theglobeandmail.com/news/british-columbia/bc-government-warns-of-limits-on-tree-planting/article24560070/>

A.8.0 If non-exempt public utilities participate in the EV charging market, do they have any obligation to serve EV charging customers?

Response:

No, the UCA section 28 states:

28 (1) On being requested by the owner or occupier of the premises to do so, a public utility must supply its service to premises that are located within 200 metres of its supply line or any lesser distance that the commission prescribes suitable for that purpose.

However, the Commission may relieve a public utility from the obligation to serve:

28 (3) After a hearing and for proper cause, the commission may relieve a public utility from the obligation to supply service under this Act on terms the commission considers proper and in the public interest.

The obligation to supply a **DC service** is questionable as public utilities traditionally supply an **AC service** and usually do not provide transformation to DC. Examples are smelters, other forklift charging facilities, Canexus, etc.

A.9.0 Should non-exempt public utilities be provided the same exemptions in regard to EV charging services as are other EV charging market participants? This includes exemption from Part 3 of the UCA, with similar retentions of certain sections by the BCUC.

Response:

No. The non-exempt public utilities should not be provided the same exemptions in regard to EV charging services as are other EV charging market participants for the reasons of access to ratebase funding, risk of stranded assets, the availability of using the Regulatory Compact, etc.

A.10.0 Any other comments that may be helpful to the Panel.

Response:

NFPA

The Panel could address the risk of a lithium-ion battery fire⁷. The NFPA has produced several guides and bulletins for emergency responders.⁸

⁶ <https://driving.ca/auto-news/news/motor-mouth-an-electric-revolution-that-never-was>

⁷ <https://www.nfpa.org/News-and-Research/Publications/NFPA-Journal/2016/January-February-2016/Features/ESS/Lithium-Ion-conundrum>

⁸ <https://www.nfpa.org/training-and-events/by-topic/alternative-fuel-vehicle-safety-training>

Not all Electric Vehicle Energy Management Systems (EVEMS) have fire detection emergency shutdown. Regardless, if the batteries reach ignition then a separate alarm should be provide since the removal of charging energy will not extinguish the battery fire. If the Panel is concerned about safety standards, then external fire detection and power shutdown could be considered in all L1 and L2 charging stations as the majority of these may be located indoors. Even though the DCFC stations may be open-air design, they may be unmanned (no operator on site) and therefore should have external fire detection and power shutdown capability in the event of a battery fire.

The Marcon Document

The Marcon document (the Document) was referenced in a BC Hydro footnote in Phase 1 and provides a significant amount of information, some of which was provided by BC Hydro; and addresses issues related to road tax, urban vs. enroute rates, etc.

The Document and the BC Hydro information contained within may provide the Panel with the data necessary to determine rates in the short-to-long term DCFC rates until the receipt of business plans/cases from those public utilities wishing to become DCFC charging station service providers have been filed with the Commission.

The Document could be used to establish a relationship in 2016 dollars between the cost of home energy, Average energy cost of charging an EV to 80% of battery capacity (or the price per ½ hour of charge) , and the urban to En route pricing ratio. The ratio of \$0.35/\$0.10 or 3.5 represents the 2016 kWh price divided by the cost of “step 2 kWh” for the residential rate. The other ratio of interest is the average energy cost of charging (80% of battery capacity) or the ½ hour price. Using the information in the Document, the Panel can adjust these prices into 2018 pricing and forward.

The ongoing forward adjustment for the Charging energy cost in kWh would be:

$$\begin{aligned}
 & \text{Current Charging Energy Cost Adjustment Factor per kWh} \\
 & = \frac{\text{Current Residential Step 2 Price per kWh}}{\text{2016 Residential Step 2 Price per kWh}} \\
 & \times \text{2016 Charging Price per kWh}
 \end{aligned}$$

Equation 1: Current DCFC Charging Energy Cost Adjustment Factor

The average energy cost of charging (80% of battery capacity) would be:

$$\begin{aligned}
 & \text{Current average urban Energy Cost of charging} \\
 & = \frac{\text{Current Residential Step 2 Price per kWh}}{\text{2016 Residential Step 2 Price per kWh}} \\
 & \times \text{2016 average urban price of charging}
 \end{aligned}$$

Equation 2: Current Urban DCFC Charging Energy Cost Adjustment Factor

and

$$\begin{aligned} & \text{Current average En route Energy Cost of charging} \\ &= \frac{\text{Current Residential Step 2 Price per kWh}}{\text{2016 Residential Step 2 Price per kWh}} \\ & \times \text{2016 average En route price of charging} \end{aligned}$$

Equation 3: Current En route DCFC Charging Price Adjustment Factor

These equations will maintain the ratio between home charging costs to DCFC pricing (Urban & En route) without further consideration of BCCPI, CPI or other indices.

Energy Cost Only

In 2018 and using the Documents numbers in Table 23 of the document, the energy cost for a 80% charge to an assumed 30 kW EV battery would be \$8.40 in an urban environment and \$12.60 in a rural (en route) environment. This does not include the other costs such as: capital, maintenance and operating costs. Since not all EVs will require an 80% charge, then the cost/charge will most likely be less when using a kWh meter at the DCFC station.

e-fuels vs. BEV

The Panel should consider the other competing fuels available soon to be available that could contribute to the reduction in greenhouse gases. Hydrogen is one. Other “electrofuels⁹” are methanol, e-petrol and e-diesel. To ignore this research in preference to BEVs may be a dis-service to the public.

⁹ <https://publications.lib.chalmers.se/records/fulltext/218621/218621.pdf>

B. Wholesale rate (p. 49 of the Phase 1 Report)

B.11.0 Is there a need for a specific tariff provisions for the wholesale provision of electricity for the purpose of EV charging?

Response:

Yes. For the reasons below, a specific tariff for the wholesale provision of electricity for the purpose of EV charging is required.

B.12.1 If so, how should this wholesale tariff be designed?

Response:

Any wholesale tariff must be designed to include:

- geographic location (urban vs. rural),
 - While urban DCFCs may present a minimal challenge for a grid connection, rural locations are far different as there could be numerous challenges to obtaining a connection to the grid.
- utilization voltage,
 - Depending on the utilization voltage available to supply the DCFCs, usually the higher the voltage, the higher the cost.
- demand & peak load, and
 - Usually a high peak load and a low demand increase the cost of the supply equipment to a DCFC.
- reinforcement costs.
 - If the lines are not capable of carrying the extra load of the DCFC, then additional upgrading of the distribution system in the area of the DCFC will be required and this upgrade will add additional reinforcement cost.

B.12.2 Is a time of use rate appropriate?

Response:

A time of use (TOU) rate may be appropriate but may not be just, reasonable and not unduly discriminatory. To take advantage of the surplus capacity available, an evening TOU rate could be used to lower the cost of EV charging. However, the same rate is not available to the residential consumer and other classes and therefore could be considered to be unjust, unreasonable and unduly discriminatory. This being the case the current residential rate (RIB Tier 2) should be applied and a fixed rate accepted for EV Charging until such time as both classes have similar TOU rates available to them.

B.12.3 Should there be any differences depending on the type of EV charging – Level 1, Level 2, and/or DCFC stations?

Response:

Yes. The differences between L1/L2 and DCFC stations that need to be addressed are:

- geographic location (urban/rural),
- utilization voltage,
- demand & peak load, and
- reinforcement costs.

One would expect the Level 1 stations and the Level 2 stations to present minimal issues unless there was a localized concentration of L2 chargers that may affect the distribution system and incoming service sizes.

The Level 3 stations may require a different approach as the incoming voltage to meet the demand in a certain areas may require extra reinforcement costs for the incoming service and associated distribution.

C. Safety (pp. 38 and 48 of the Phase 1 Report)

C.13.0 Section 3 of the Electrical Safety Regulation states that it “does not apply to a public utility as defined in the Utilities Commission Act in the exercise of its function as a utility with respect to the generation, transmission and distribution of electrical energy”. Further, “distribution equipment” is a defined term in the UCA. Although it seems clear that EV charging equipment is not “generation or transmission”, the Panel did not make any finding in the Phase 1 Report on whether EV charging infrastructure is “distribution equipment.” The Panel invites submissions on this issue in Phase 2. In responding, Interveners are requested to consider the status of the provider – for example, is the interpretation different for a non-exempt public utility than it would be for an exempt utility or a provider excluded from the definition of a public utility?

Response:

Electric power distribution equipment is used in the final stage in the delivery of electric power to a customer’s load.

1. In the case of a non-exempt (regulated) public utility, the customer’s load is the EV itself not the DCFC conversion (AC to DC) equipment. Therefore, the EV charging stations may be considered distribution equipment and not subject to Electrical Safety Regulation.
2. In the case of an exempt public utility (still a public utility), the customer’s load is the EV conversion (AC to DC) equipment. As an exempt public utility, the EV charging stations would be subject to Electrical Safety Regulation.
3. In the case of a provider excluded from the definition of a public utility but not having an exemption from regulation (not a public utility) or a non-regulated arm of a public utility (not a public utility), the EV charging stations would be subject to Electrical Safety Regulation.

The jurisdictional gaps, in the electrical safety regulation, needs to be addressed by revised legislation as they have existed for too long.

Technical Safety BC under the Safety Authority Act operates within a legislative and regulatory framework that includes Safety Standards Act and Regulations. A Technical Safety BC “Information Bulletin: Electric vehicle energy management systems¹⁰” dated 31 October 2018 has been published that governs the installation of an Electric vehicle energy management system (EVEMS) until such time as the Province adopts the 2018 BC Electrical Code.

¹⁰ <https://www.technicalafetybc.ca/alerts/information-bulletin-electric-vehicle-energy-management-systems>

The Safety Standards Act Electrical Safety Regulation does not apply to a public utility as defined in the Utilities Commission Act in the exercise of its function as a utility with respect to the generation, transmission and distribution of electrical energy.

If the Panel determines that the DCFC equipment is not used by a utility to provide the generation, transmission and distribution of electrical energy; then the DCFC stations will fall under the jurisdiction of Technical Safety BC except for municipalities that have their own electrical inspection departments.

If the Panel determines that the DCFC equipment is used by a utility to provide the generation, transmission and distribution of electrical energy; then the DCFC stations will not fall under the jurisdiction of Technical Safety BC.

A municipality can operate a public utility; and it would be exempt from the UCA; and it may, in this instance (DCFC owner/operator), also be exempt from Safety Standards Act

As the Technical Safety BC “Information Bulletin: Electric Vehicle Energy Management Systems” applies to L1, L2 and DCFC stations, the Panel must decide if L1 and L2 station providers are public utilities and therefore exempt; or they are not exempt and they come under the jurisdiction of Technical Safety BC.

As DCFC stations are of a higher capacity, safety is of greater importance. All public utilities including municipalities that own/operate DCFC stations (also public utilities by definition) are exempt from the Safety Standards Act Electrical Safety Regulation. The Panel could decide how it wishes to close this gap.

D. Greenhouse Gas Reduction Regulation (p. 52 of the Phase 1 Report)

D.14.0 In Phase 2, the Panel invites submissions from Interveners on whether amendments to the Greenhouse Gas Reduction Regulation to allow public utilities to own and operate EV charging stations as a “prescribed undertaking” are appropriate and if so, the appropriate extent and scope of such undertaking.

Response:

I believe that to amend the Greenhouse Gas Reduction Regulation to allow public utilities to own and operate EV charging stations as a “prescribed undertaking” is appropriate. However, if the Greenhouse Gas Reduction Regulation amendment permits this then The commission must not exercise a power under the Utilities Commission Act in a way that would directly or indirectly prevent a public utility referred to in subsection (2) from carrying out a prescribed undertaking.

However, the upside is the Commission has reduced involvement except to set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking.

Further, the CEA refers to the Greenhouse gas reduction and “prescribed undertaking” as follows:

Greenhouse gas reduction

18 (1) In this section, "**prescribed undertaking**" means a project, program, contract or expenditure that is in a class of projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia.

(2) In setting rates under the Utilities Commission Act for a public utility carrying out a prescribed undertaking, ***the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking.***

(3) The commission must not exercise a power under the Utilities Commission Act in a way that would directly or indirectly prevent a public utility referred to in subsection (2) from carrying out a prescribed undertaking.

(4) A public utility referred to in subsection (2) must submit to the minister, on the minister's request, a report respecting the prescribed undertaking.

(5) A report to be submitted under subsection (4) must include the information the minister specifies and be submitted in the form and by the time the minister specifies.

Even though I stated that to amend the Greenhouse Gas Reduction Regulation to allow public utilities to own and operate EV charging stations as a “prescribed undertaking” is appropriate. The other matters of safety will still exist and GGRR section 18(3) prevents the Commission from exercising its power under the UCA to regulate and enforce safety. Then, the issue of the gap in the Safety Standards Act and its regulation may cease to be an issue to be considered. Reaching a memorandum of understanding with Technical Safety BC may solve the safety matter.

Submission

From a regulatory point of view, I submit that the advantages of allowing the public utilities to consider DCFC stations as prescribed undertakings outweigh the disadvantages. Further, the Commission has requested exemptions under section 88 of the Utilities Commission Act.

The advantages are that most of the issues including safety could be under the control of Technical Safety BC, the Provincial government, and the appropriate Ministry except that the Commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking. Also, this approach prevents any regulatory barriers to EV sales in BC.

As all persons who meet the definition of being a “public utility” can participate in a prescribed undertaking; then an amendment to the CEA and GGRR may not even be required. If this is so, then the Panel could quickly proceed to a Phase 3 of this Inquiry and set the rates for the all DCFC stations in BC except for those owned and operated by municipalities which are exempt from regulation by the Commission.

As FortisBC and BC Hydro are public utilities then they also can participate in the prescribed undertaking for the provision of DCFC stations. However, BC Hydro and FortisBC will have an advantage when it comes to financing, stranded assets, cross-subsidies, etc. As the Commission must set rates that allow the public utilities, BC Hydro and FortisBC, to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking, then through appropriate rate setting the risk of cross subsidies and stranded assets can be somewhat mitigated.