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November 19, 2020

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

Re: FortisBC Inc. (FBC)

Project No. 1598940

Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service – Revised Application dated September 30, 2020 (Revised Application)

Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1

On September 30, 2020, FBC filed the Revised Application referenced above. In accordance with BCUC Order G-254-20 setting out the Regulatory Timetable for the review of the Revised Application, FBC respectfully submits the attached response to CEC IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1. Reference: Exhibit B-5, page 1

> **1. INTRODUCTION**
>
> **1.1 *INTRODUCTION AND APPROVALS SOUGHT***
>
> FortisBC Inc. (FBC) files this Application for Approval of a Rate Design and Rates for Electric Vehicle Direct Current Fast Charging Service (Application) to establish permanent rates and related approvals for its electric vehicle (EV) direct current fast charging (DCFC) stations. All of FBC's existing and planned DCFC stations are prescribed undertakings pursuant to section 18 of the *Clean Energy Act*, as they fall within the class of prescribed undertaking set out in section 5 of the *Greenhouse Gas Reduction (Clean Energy) Regulation* (GGRR). FBC's proposed rates for these stations are $0.27 per minute for 50 kW DCFC service and $0.54 per minute for 100 kW DCFC service. These rates recover FBC's cost of service on a levelized basis and will support the growth and development of EV use in its service territory.

1.1 Please provide a discussion of any restrictions placed on BCUC decision-making related to this application as a result of the application being a prescribed undertaking.

Response:

Where the project(s) that are the subject of an application are prescribed undertakings under Section 18 of the *Clean Energy Act*, the BCUC's role with regard to those activities or expenditures is changed. Section 18 makes it clear that the BCUC is obliged 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." FBC respectfully submits that this provision effectively removes BCUC discretion concerning the ultimate recovery of costs that are themselves found to be reasonable and which are incurred with respect to prescribed undertakings. Section 18 also provides that "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". For these reasons, FBC has structured the Revised Application to provide for an examination of whether its stations are prescribed undertakings for the purposes of section 18 of the *Clean Energy Act*, and then to provide the BCUC with the information it requires to determine that the proposed rates are just and reasonable according to its rate setting powers under the *Utilities Commission Act*.

1.2 Is the BCUC required to allow all associated assets to be included in rate base? Please explain.

Response:

In the view of FBC, where the BCUC has determined that expenditures for projects, programs, or contracts meet the criteria for a prescribed undertaking then it 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 that prescribed undertaking, including those costs related to the assets that form part of the project.

2. Reference: Exhibit B-5, page 8

> **2.3 *FBC DCFC CHARING STATIONS ARE "ELIGIBLE STATIONS"***
>
> The existing 23 DCFC stations (16 sites) currently in operation, as well as the 17 planned stations (7 sites) in the Application meet the definition of an eligible charging station in Section 5(1) of the GGRR in that they are all: available for use 24 hours a day by any member of the public; do not require users to be members of a charging network, and are capable of charging electric vehicles of more than one make.
>
> Drivers using FBC DCFC stations for EV recharging purposes will have two options for payment transactions with FBC:
>
> 1. Creating a membership with the FLO network and linking an appropriate means of payment (credit card, bank account) to that membership; or
> 2. Scanning a Quick Response Code (QR code) on the station with their mobile phone which will take the customer to a payment portal where they can enter their credit card details which will allow the station to be activated. Customers may also contact FLO's telephone customer support to establish a single use credit card transaction. The customer's credit card will be charged the appropriate amount once the charging session is complete.
>
> All FBC DCFC stations will be available for use 24 hours a day by any member of the public, without any requirement for users to be members of a charging network, as described above. Stations also currently support roaming for Flo, Chargepoint, BC Hydro, Electric Circuit, and eCharge network members.

2.1 Please provide the rates at which FBC is currently collecting revenue from customers at its existing 23 stations.

Response:

The current rate is $0.30 per minute, as per RS 96, approved on an interim basis by BCUC Order G-9-18, for electric vehicle charging at FBC-owned Direct Current Fast Charging stations. RS 96 is included as part of the FBC Tariff located at the following link:

https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/regulatory-affairs-documents/electric-utility/fortisbcelectrictariff.pdf

2.2 Does FBC have both 50kW and 100kW stations, or are they all 50 kWs?

Response:

FBC has only deployed 50 kW stations to date. The proposed 100 kW stations are planned for deployment in 2021.

2.3 Are there other charging networks which are not supported by the FBC DCFC stations? Please explain.

Response:

FBC DCFC stations currently support roaming for the other networks described in the Revised Application. To the extent that other networks are not supported (e.g. Electrify Canada), customers still have available payment options as described in the Revised Application, as cited in the reference to this IR.

2.4 Why has FBC not included a standard credit card swiping option such as is available in typical gas stations? Please explain.

Response:

FBC's station vendor AddEnergie does not currently offer the option for physical payment via credit card swiping. Given the unattended nature of the DCFC sites, as well as the associated costs and potential reliability issues for physical credit card readers, FBC believes the payment options it currently has for secure credit card payment meet the needs of customers. Please also refer to the response to BCSEA IR1 7.2.

2.4.1 Please provide an estimate of the additional cost that would be required for FBC to install such an option at each station, and collectively at all stations.

Response:

FBC is unable to estimate the costs to retrofit its stations to provide such an option, as a retrofit would require not only new hardware to be installed, but also requires associated electrical and software integration work. FBC believes these costs could be significant relative to the value of the additional service to customers.

2.4.2 What are the customer options for payment at the existing stations?

Response:

FBC has provided a complete summary of the payment options in Section 2.3 of the Revised Application as provided in the reference. Please also refer to the response to BCSEA IR1 7.1.

2.4.3 If the payment options are different at the existing stations, does FBC intend to convert those options to that discussed above?

Response:

Please refer to the response to BCSEA IR1 7.1.

2.5 Can customers scan their credit card using the QR code option, or does it require a customer to manually enter the credit card details? Please explain.

Response:

Scanning the QR code will take the customer to a payment-processing website where they are required to manually enter their credit card details to initiate a charging session.

2.6 Do BC Hydro stations require customers to either have a membership or use a QR code in order to make a payment?

Response:

Where BC Hydro owned stations require payment, FBC understands that the available payment options are the two mentioned in the question.

2.7 Please explain if cellular service can be considered very reliable for all network service providers at every service station proposed.

2.7.1 If not, please identify any station that may have not have reliable cellular service and the applicable carrier.

Response:

While FBC has not tested “all network service providers” at every charging site, FBC considers cellular service to be reliable for all of FBC’s current and proposed DCFC sites. FBC had encountered some intermittent service interruptions at one charging site, and resolved the issues by working with FLO to migrate telecommunications at this site to a different carrier.

3. Reference: Exhibit B-5, page 8

> All FBC DCFC stations will be equipped with connectors supporting both CHAdeMO and Combined Charging System (CCS) connectors capable of charging electric vehicles of more than one make.

3.1 Do the stations support the full range of charging systems currently available?

3.1.1 If no, please explain why not and identify those changing systems that are not supported.

3.1.1.1 For those charging systems not supported, please provide the approximate percentage of the charging market they encompass.

Response:

Please refer to the response to BCOAPO IR1 5.1.

4. Reference: Exhibit B-5, page 9

> **2.4 *ALL FBC STATIONS MEET THE LIMITED MUNICIPALITY SITE LIMIT TEST***
>
> Of the 16 sites currently in operation, four are located in a "limited municipality" and are therefore subject to the "site limit". Three of these four sites are located in Kelowna and one is located in Nelson. None of these municipalities exceed the prescribed site limit. Additionally, FBC expects to own and operate a site in the limited municipality of Penticton beginning October 1, 2020 with another site planned for deployment in Penticton in 2021. The following table details the count of non-exempt utility sites (existing and planned) as well as exempt[4] utility sites (existing and planned).
>
> **Table 2-1: Stations in Limited Municipalities**
>
Municipality	Population (2016 Census)	Non-exempt utility site count (current)	Non-exempt utility site count (planned)	Exempt utility site count (current)	Exempt utility site count (planned)	Total existing & planned sites	Site Limit (2016 Census Pop./ 9,000)
Kelowna	142,146	3	0	2	0	5	16
Penticton	43,432	0	2	0	1	3	5
Nelson	10,664	1	0	0	0	1	2
>
> As shown above, FBC's existing and planned stations comply with the prescribed site limits.
>
> For the remaining 12 sites in operation, and the seven sites planned for deployment through 2021, the element of the definition of the prescribed undertaking contained in Section 5(b)(ii) of the GGRR is not a consideration as these sites are all located in municipalities with populations less than 9,000, or the site is located in a community that is not a municipality as defined by the *Community Charter*. The location of the 16 DCFC sites that FBC has constructed, owns and operates, and others that it plans to construct, own and operate as at the time of this Application, is detailed in Table 2-2 below.

4.1 Please describe what is meant by the 'site limit'.

Response:

The meaning of "site limit", as used in the Revised Application, is as defined by section 5 of the GGRR. In this context, site limit in relation to a limited municipality[1] means the number calculated by:

(a) dividing the population of the municipality by 9 000, and

(b) if applicable, rounding the quotient up to the nearest whole number.

The site limit represents a maximum number of eligible charging sites that can located in a limited municipality and that can be considered prescribed undertakings under section 18 of the *Clean Energy Act*.

[1] "Limited municipality" means a municipality with a population of 9 000 or more.

4.2 How are ‘site limits’ established? Please explain.

Response:

Please refer to the response to CEC IR1 4.1.

5. Reference: Exhibit B-5, page 9

> **2.5 FBC'S STATIONS WILL BE CONFIGURED TO USE OPEN CHARGE POINT PROTOCOL**
>
> The GGRR also requires that any eligible charging station coming into operation on or after January 1, 2022 use or be configured to use the Open Charge Point Protocol (OCPP). While FBC expects all of its planned stations to come into operation prior to January 1, 2022, all of its charging stations (both current and planned) will be configured to use the OCPP. OCPP refers to a network communication protocol between DCFC stations and a charging station management system. FBC's DCFC stations currently use a communication protocol referred to as the Open Network Protocol (ONP)-Intranetworking for communication between the stations and the charging station management system. However, FBC's vendor AddEnergie is committed to achieving OCPP compliance by mid-2021 for all stations owned and operated by FBC.

5.1 Will FBC's stations all initially use ONP, and need to be converted? Or will FBC's new charging stations use OCPP when they are first installed?

Response:

It is anticipated that FBC's stations will all initially use ONP. FBC notes that the OCPP configuration requirement in the GGRR applies only to stations entering operation after January 1, 2022 (new or replacement of existing). FBC is not expecting to incur any additional costs related to achieving OCPP compliance for its stations.

5.2 What will be the cost to FBC of switching from ONP to OCPP?

Response:

Please refer to the response to CEC IR1 5.1.

5.3 Are there other vendors that already use the OCPP? Please explain.

5.3.1 If yes, did FBC consider those vendors instead? Please explain why or why not.

Response:

Yes, there are other vendors that already use OCPP. FBC did include vendors using OCPP in the RFP it conducted in 2018. Ultimately, FBC selected the vendor with the lowest equipment

costs as further described in the response to BCUC IR1 10.3. FBC notes that no requirement existed in the *GGRR* related to OCPP at the time FBC conducted its RFP for stations.

5.4 What process did FBC go through to select AddEnergie as its vendor of choice?

Response:

Please refer to the response to BCUC IR1 10.3.

5.4.1 Is FBC committed to using AddEnergie for all its stations, or can it purchase from other vendors as well? Please explain.

Response:

FBC is not committed to using AddEnergie for all stations. However, FBC's existing and planned stations (40 total) as described in the Revised Application have all been procured from AddEnergie.

6. Reference: Exhibit B-5, page 10

> **3. RATE DESIGN**
>
> **3.1 *INTRODUCTION***
>
> FBC is proposing a set rate for all of its existing and planned DCFC EV stations that varies with station capacity.
>
> Sections 18(2) and 18(3) of the *Clean Energy Act* describes the BCUC's role in the setting of rates related to prescribed undertakings:
>
> > (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.
>
> FBC is proposing two rates: a time-based rate of $0.27 per minute at FBC's 50 kW DCFC stations, and a rate of $0.54 per minute at FBC's 100 kW stations.
>
> Rates based partly or wholly on energy use (kWh) cannot currently be implemented by FBC due to the lack of Measurement Canada-approved metering.
>
> The proposed rate is based on a cost of service analysis of the stations and assumes a reasonable level of use based on both FBC's experience with its existing stations, as well as the projected growth in sales of EVs in BC over the next 10 years. The proposed rate for the 100kW station will recover FBC's cost of service on a 10-year levelized basis, is comparable to other EV charging rates in the Province, and will encourage the adoption of EVs. The proposed rate for the 50 kW DCFC will recover FBC's cost of service on a 13-year levelized basis. The 50 kW rate design model is based on 13 years in order to include the 2018–2020 EV expenditures undertaken by FBC and still provide a complete 10-year cost projection for the planned 2021 EV capital expenditures.

6.1 On what basis did FBC decide to install either a 50KW DCFC station or a 100 DCFC station? Please explain.

Response:

For clarity, FBC has not yet installed any 100 kW stations. Please refer to the response to BCOAPO IR1 9.1 for a discussion the criteria applied for determining where to deploy higher-powered stations.

6.2 Please provide an overview of charging at different capacities.

Response:

FBC assumes "capacities" as stated is intended to refer to "charging station capacity" or "charging rate" (i.e. station kW output) as opposed to battery "capacities". The primary difference to a driver between different charging rates is the time the vehicle requires to achieve a certain state of charge. FBC notes that EVs with the capability of charging at higher rates will benefit from higher output chargers by having to spend less time charging for an equivalent amount of energy as would be dispensed to a vehicle at a lower charge rate over a longer period.

Please refer to the responses to BCUC IR1 8.1 and 8.1.1 for an explanation of the assumptions FBC has incorporated into its analyses for the 50 kW and 100 kW stations.

6.3 Would a customer charging at a 100kW station always receive that level of capacity when charging, or does the make and model of the car influence the charging levels? Can all vehicles capable of charging at a DCFC station charge at either type of station? Is charging time the factor that distinguishes the amount of energy received, or do other factors come into play?

Response:

All vehicles capable of charging at a DCFC station can charge at either type of station (50 kW and 100 kW). However, a vehicle that is only capable of charging at 50 kW will charge at 50 kW regardless of the capacity of the station. Please refer to the responses to BCUC IR1 7.6, 7.6.3, 7.8 and 7.9 for a further discussion of charging rate as related to station capacity and the various factors affecting the maximum charge rate accepted by a vehicle.

6.4 If a customer charges a vehicle at a 50kW DCFC station, do they receive exactly the same level of charging for the same price as they would at the 100kWDCFC station? Please explain.

Response:

Given the non-linear nature at which an EV battery charges and the number of factors affecting the accepted charge rate for an EV, FBC is unable to confirm that a customer charging a vehicle at a 50 kW station would receive exactly the same level of charging for the same price as they would at the 100 kW station. However, given that the charging speed of a 100 kW charger is

approximately double a 50 kW charger (for a capable vehicle), and that the rate charged for 100 kW is also double, the price to the driver of an EV capable of 100 kW charging will be roughly the same.

In general, vehicles capable of charging at 100 kW or greater will have a reduced session length as compared to charging at a 50 kW station. Please also refer to the response to BCUC IR1 8.1.1 for discussion on how this has been incorporated into the analysis for the 100 kW stations.

6.5 What differences arise when charging by time based rates vs by energy consumption?

Response:

FBC has not calculated the equivalent rates for 50 kW and 100 kW DCFC service on a per kWh basis due to the issues discussed in response to BCUC IR1 7.7. FBC notes that although energy-based rates may be more familiar to customers, they do not necessarily result in a price signal that incents more efficient use of the DCFC stations. Please refer to the response to BCUC IR1 7.1.3 for further discussion of energy-based and time-based rates.

6.5.1 To the extent there are differences, please compare and contrast the pros and cons of each from both the perspective of the consumer and the perspective of the utility and utility ratepayer.

Response:

Please refer to the response to BCUC IR1 7.1.3 and 7.8.1.

6.5.2 What other rate design options are available?

Response:

In the view of FBC, available rate design options are very limited at the current time. Please refer to the response to BCUC IR1 6.5 for options that FBC considered when developing the Revised Application.

6.6 What type of rates are standard in other areas? Time based on capacity, energy consumption or something else?

Response:

The rates in Table 3.3 of the Revised Application are representative of the types of rates typical in other jurisdictions. Please also refer to the response to BCUC IR1 7.2.

6.7 When does FBC expect that Measurement Canada will have approved metering for energy use? Please explain.

Response:

FBC has no definitive timeline as to when Measurement Canada approved metering will be available for DC fast charging services. Please also refer to the response to BCUC IR1 7.7.1.

6.8 When approved metering technology is available, will FBC implement metering based on energy use? Please explain why or why not.

Response:

Please refer to the response to BCSEA IR1 5.1.

7. Reference: Exhibit B-5, page 12

> The proposed rate is based on a cost of service analysis of the stations and assumes a reasonable level of use based on both FBC's experience with its existing stations, as well as the projected growth in sales of EVs in BC over the next 10 years. The proposed rate for the 100kW station will recover FBC's cost of service on a 10-year levelized basis, is comparable to other EV charging rates in the Province, and will encourage the adoption of EVs. The proposed rate for the 50 kW DCFC will recover FBC's cost of service on a 13-year levelized basis. The 50 kW rate design model is based on 13 years in order to include the 2018–2020 EV expenditures undertaken by FBC and still provide a complete 10-year cost projection for the planned 2021 EV capital expenditures.

7.1 How, and at what capacity levels, do commercial vehicles receive electric charge? Does the process differ from passenger vehicles?

Response:

Commercial electric vehicles are capable of receiving an electric charge at a variety of levels. Not all commercial electric vehicles include DC fast charging capability; however, those that do typically can charge at a rate of at least 50 kW. The charging process itself does not differ for passenger vehicles as compared to commercial electric vehicles where industry standard connectors (CCS and CHAdeMO) are used.

7.2 If commercial vehicles can receive charge at a different level, or through different means, can they charge at FBC's stations?

Response:

Commercial vehicles equipped with DC-fast charging capability using industry standard connectors (CCS and CHAdeMO) can charge at FBC's stations at charging rates up to the maximum power supported by the station.

7.2.1 If there are other options available for commercial vehicle electric charging, please discuss whether or not FBC expects to implement commercial vehicle charging stations. Please explain why or why not.

7.2.1.1 If yes, please provide expected time lines.

7.2.1.2 If no, please explain why not.

Response:

FBC does not anticipate deploying public commercial charging stations to serve commercial customers. However, commercial vehicles equipped with industry standard connectors used in FBC DCFC charging stations are capable of using the public stations that FBC has deployed.

FBC anticipates that any future investment in commercial charging facilities would be limited to specific fleet customers who have entered into a commercial arrangement for FBC to provide these services.

7.2.2 Would FBC consider a commercial vehicle charging rate that differs from its proposed rates under any scenarios? Please explain why or why not.

7.2.2.1 If yes, please explain under what conditions this could occur, and how such rates might differ from the standard rates.

7.2.2.2 If yes, when would FBC expect to do so?

Response:

No, FBC would not consider a commercial vehicle charging rate as FBC is not aware of any cost basis to charge a different rate to commercial vehicles.

8. Reference: Exhibit B-5, page 13

> **3.2.1 Key Assumptions**
>
> ***3.2.1.1 Electric Consumption per EV Charging Event***
>
> FBC has assumed consumption of 20 kWh per charge event based on average historical kWh volumes per charge session at FBC's existing stations. Based on historical usage patterns, 20 kWh corresponds to approximately 30 minutes of charging.
>
> ***3.2.1.2 Station Usage Assumptions***
>
> The usage at FBC's EV stations are the minutes per year that EV customers will use the stations to charge their vehicles. As described below, FBC modeled EV charging usage by establishing a baseline using historical data and then applying growth rates based on third party analysis.
>
> To understand current use, FBC reviewed historical usage (in minutes) at existing FBC-owned DCFC stations across FBC's service territory. Average usage was approximately 0.3 sessions (9 minutes) per station per day in 2018, and 0.7 sessions (21 minutes) per station per day in 2019. Data from 2020 was not included due to the impact of COVID-19 on EV charging patterns (i.e. fewer customers driving resulting in lower-than-anticipated DCFC usage compared to historical trends).
>
> To estimate future usage of DCFC stations, FBC reviewed year-over-year projected growth rates of EV registrations in FBC's service territory based on EV sales targets from the Province's *Zero Emissions Vehicles (ZEV) Act*. FBC has assumed that the growth rate in EV registrations will be reflected in the growth rate of DCFC usage, which aligns with observations from 2018 and 2019 data.

8.1 Please provide a table for each year since FBC EV charging has been available, through 2020, showing the average historical kWh volumes per charge session by month at each of FBC's charge stations, and identify the location and capacity of the charge station at each of FBC's existing stations.

Response:

For detail regarding the location and capacity of FBC's existing stations, please refer to the response to BCUC IR1 1.1. For information on the kWh volumes per charging session, please refer to the responses to BCOAPO IR1 11.4, 11.5 and 11.6. Please note this data is provided on an annual basis, as monthly data is not readily available. Monthly variations have no impact on the level at which RS 96 is set.

8.1.1 For each year please provide the number of charge sessions at each of FBC's existing stations by month, with the capacity and location of the station.

Response:

Please refer to the responses to BCOAPO IR1 11.4, 11.5 and 11.6.

8.2 Please provide the year-over-year projected growth rates of EV registrations and the source if not included in the *Zero Emissions Vehicles Act.*

Response:

Please refer to the response to BCUC IR1 8.4 for the methodology behind calculating year-over-year growth rates of EV registrations for FBC's service territory. Please refer to the table below for the year-over-year growth rates of EV registrations.

Table 1: Projected EV Growth Rates in the FBC Service Territory

Year	Projected EV Registrations	Projected EV Growth Rate
2018[1]	350	
2019[1]	669	91%
2020	1,669	149%
2021	2,797	68%
2022	4,058	45%
2023	5,454	34%
2024	6,989	28%
2025	8,666	24%
2026	11,048	27%
2027	14,154	28%
2028	18,002	27%
2029	22,609	26%
2030	27,992	24%

Note:

[1] *2018 and 2019 EV Registration and Growth Rate figures are actual, not projected, values*

8.3 Are the projected growth rates of EV registrations the same as the EV sales targets from the Province's Zero Emissions Vehicles Act, or are there differences? Please explain.

8.3.1 If not the same, please provide a brief discussion of the differences and why.

Response:

Please refer to the response to BCUC IR1 8.4.

8.4 Have EV registrations kept pace with the EV sales target to date? Please provide any quantitative differences.

Response:

Since EV registration data is reported at the end of each year, and since the *ZEV Act* EV sales forecasts don't begin until the year 2020, there has not yet been an opportunity to compare the two figures.

8.5 Does FBC expect that EV sales or registrations have or will be affected by Covid-19? Please explain and provide any quantitative evidence FBC has available to support its position.

Response:

Please refer to the response to BCOAPO IR1 12.6.

9. Reference: Exhibit B-5, page 13

> ***3.2.1.3 Inflation Rates***
>
> Inflation for cost of electricity under (RS) 21 is based on FBC's indicative rate increases for 2022-2024 which average 3.5 percent. Inflation for 2020-2021 O&M is set at 2.309 percent and 3.793 percent for 2020 and 2021, respectively, as set out in FBC's Annual Review for 2020 and 2021 Rates. Inflation for all remaining years for both RS 21 and O&M is estimated at 2 percent for the purpose of this analysis. The inflation used in the remaining years is in line with the Bank of Canada historical inflation target of 2%. Inflation has been applied to O&M, in-lieu property taxes and power purchase costs.

9.1 Why does FBC plan to use indicative rate increases of 3.5% for the period 2022 – 2024, which exceeds the Bank of Canada historical inflation rate of 2%, and then use the 2% inflation rate thereafter? Would it be more consistent to assume that FBC's rate increases will continue to exceed inflation after 2024 by a certain percentage, or to use inflation rates for the entire period?

Response:

FBC has used the information that it considers to be the most accurate available at the time of filing. While FBC provided the indicative rate increases for 2022-2024 in its Annual Review of 2020 and 2021 Rates, no such forecast has (or can) be put forward for the following number of years. FBC has no information that indicates that rate increases will continue to exceed inflation after 2024.

10. Reference: Exhibit B-5, page 14

> The provincial government has identified the transportation sector as being a major contributor to GHG emissions in BC. In order to reduce GHG emissions, the *Renewable and Low Carbon Fuel Requirements Regulation* (RLCFRR or the Regulation) was introduced with the goal of reducing the carbon intensity of transportation fuels by ten percent by 2020. Carbon intensity is the amount of carbon dioxide equivalent emitted (CO2e) per unit of energy consumed, and is measured in tonnes.

10.1 Please provide a breakdown of the GHG emissions of passenger cars vs commercial vehicles.

Response:

The following table provides data from the British Columbia Provincial Greenhouse Gas Emissions Inventory[2].

Table 1: 2018 GHG Emissions ($ktCO_2e$) by Vehicle Type[1]

Passenger Cars					Commercial Vehicles	
Gasoline			Diesel		Gasoline	Diesel
Light-duty vehicles	Light-duty trucks	Motor-cycles	Light-duty vehicles	Light-duty trucks	Heavy-duty vehicles	Heavy-duty vehicles
3,971	5,542	30	131	157	2,050	7,267
Passenger Cars Total = 9,831 $ktCO_2e$					Commercial Vehicles Total = 9,317 $ktCO_2e$	

Note:

[1] *Vehicle types limited to "Road Transportation", as defined in the Provincial Inventory*

10.2 In what ways will FBC encourage commercial vehicles to change to EV or EV type vehicle, and when will this happen?

Response:

FBC is supporting EV use generally through the deployment of its public fast charging service. The FBC EV stations can and will support any vehicle that uses standard (CCS and CHAdeMO) connectors. The higher-powered 100 kW stations that FBC plans to deploy in 2021 may be particularly suitable for commercial vehicles with larger batteries that can take advantage of the increased charging rate.

[2] https://www2.gov.bc.ca/gov/content/environment/climate-change/data/provincial-inventory.

11. Reference: Exhibit B-5, page 15

> The provincial government has identified the transportation sector as being a major contributor to GHG emissions in BC. In order to reduce GHG emissions, the *Renewable and Low Carbon Fuel Requirements Regulation (*RLCFRR or the Regulation) was introduced with the goal of reducing the carbon intensity of transportation fuels by ten percent by 2020. Carbon intensity is the amount of carbon dioxide equivalent emitted (CO2e) per unit of energy consumed, and is measured in tonnes.

11.1 Please provide further details as to the services provided by FLO.

Response:

Please refer to the response to BCUC IR1 10.1.

11.2 On what basis did FBC determine that 15% was an appropriate level of transaction fee? Was this negotiated?

Response:

Please refer to the responses to BCUC IR1 10.3 and 10.3.1.

11.3 Has FBC been charging its existing customers the same transaction fee?

11.3.1 If no, please explain why not.

Response:

Yes, FBC been charging its existing customers the same transaction fee.

11.4 Why is the transaction fee entirely volume-based instead of including a fixed portion?

Response:

Given that the cost recovery structure for the items related to the transaction fee (payment processing, 24/7 customer support) is established by FLO, FBC cannot speculate as to the particular rationale used by FLO to set pricing. However, FBC notes that this fee structure is one approach to minimize any requirement on the part of station owners to pay a large upfront fixed amount for these services, which is important considering the already challenging economics of operating a DCFC station. As noted in the response to BCOAPO IR1 15.1, a portion of the fees payable to FLO are fixed on a per station basis and are not captured in the transaction fee.

11.5 Please provide the total cost of an average charge, breaking out all fees.

Response:

Please see below for a breakdown of an average charge for a 50 kW and 100 kW station. Note that the $0.55/minute rate for the 100 kW station reflects the rate as updated through this IR process.

Total Cost of Average Charge 50 kW Station

Average Charge for 50 kW Station in minutes	30
FBC Rate	$0.27
Total Cost of Average Charge	$8.10
FBC Charge to recover Cost of Service	$ 6.82
FLO 15% Transaction Fee	$ 1.28

Total Cost of Average Charge 100 kW Station

Average Charge for 100 kW Station in minutes	17.5
FBC Rate	$0.55
Total Cost of Average Charge	9.63
FBC Charge to recover Cost of Service	$ 8.23
FLO 15% Transaction Fee	$ 1.40

11.6 Please provide the dataset for charging fees showing the low, median, average and maximum charges that customers have incurred in FBC's experience.

Response:

The requested information is provided in the table below.

Table 1: Fees Observed at FBC Stations (January 2018 – October 2020)

Low charge	Median charge	Average (mean) charge	Maximum charge
$0.06	$8.15	$9.56	$46.88

Note: Calculations are based on all stations and all years in service

12. Reference: Exhibit B-5, page 18

> FBC expects usage to increase over the analysis period by approximately 31 percent per year. When the levelized usage over the analysis period is used as the denominator with the levelized cost of service, a rate of $0.27 per minute and $0.54 per minute is derived for the 50 kW and 100 kW stations respectively. FBC provides detailed calculations in Appendix E, Schedule 2, which demonstrate that the charging rate collects the incremental cost of service over the analysis period based on FBC's assumptions.
>
> FBC provides the rate calculation below.

Table 3-2a: DCFC Service Rate Calculation 50 kW - 13 Year Analysis

Line No.	Particulars		Amount	Reference
1	Present Value of the Cost of Service	$	3,583,047	Appendix E, Schedule 2 Line 7 x 1,000
2	Present Value Charging Minutes Per Year		15,778,924	Appendix E, Schedule 2 Line 13
3	Cost of Service based Rate	$	0.23	Line 1 / (Line 2)
4	Transaction Fee		15%	
5	Levelized $ per minute (incl, Trans Fee)	$	0.27	Line 3 / (1 - Line 4)

Table 3-2b: DCFC Service Rate Calculation 100 kW - 10 Year Analysis

Line No.	Particulars		Amount	Reference
1	Present Value of the Cost of Service	$	929,393	Appendix E.1, Schedule 2 Line 7 X 1,000
2	Present Value Charging Minutes Per Year		2,026,154	Appendix E.1, Schedule 2 Line 12
3	Cost of Service based Rate	$	0.46	Line 1 / (Line 2)
4	Transaction Fee		15%	
5	Levelized $ per minute (incl, Trans Fee)	$	0.54	Line 3 / (1 - Line 4)

12.1 Why did FBC use a 13-year analysis for the 50 kW service rate calculation and a 10-year analysis for the 100kW year analysis?

Response:

FBC used a 13-year analysis for the 50 kW service rate calculation because of the capital additions in 2018, 2019 and 2020 that had to be reflected into the 50 kW rate, which set the starting year for the financial analysis at 2018. The 50 kW rate also has forecast capital additions in 2021 mirroring the analysis done on the 100 kW rate, which tracked the asset over the 10 year lifecycle of the EV equipment.

12.2 Does the 31% usage increase apply to both 13 years and 10 years? Please explain.

Response:

The 31 percent usage increase is the average increase in daily usage per station for both the 13-year and 10-year analysis. The compound annual growth rate for the (100 kW) 10-year analysis is 27 percent. The compound annual growth rate for the (50 kW) 13-year analysis is 34 percent. The average compound annual growth rate for both the 50 kW and 100 kW stations is ((0.34+0.27)/2) = 0.305 or approximately 31 percent.

12.2.1 Please provide the expected usage by year for the 50 kW service and the 100 kW service.

Response:

Please see Line 1 in the respective tables below for the expected usage by year for the 50 kW and the 100 kW service. The expected usage by year is used to calculate the number of charging minutes per year found in Appendix E, Schedule 2, Line 11 and Appendix E.1, Schedule 2, Line 10.

50 kW Station

Line	Particulars	Reference	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Total Annual Number of Charging Events - 50 kW		508	3,134	13,078	25,311	33,784	45,406	58,185	72,147	91,978	117,836	140,329	147,780	149,022
2	Minutes Per Charge Event		30.12	30.12	30.12	30.12	30.12	30.12	30.12	30.12	30.12	30.12	30.12	30.12	30.12
3	Number of Charging Minutes Per Year	Line 1 x Line 2	**15,309**	**94,386**	**393,881**	**762,328**	**1,017,534**	**1,367,578**	**1,752,476**	**2,172,980**	**2,770,262**	**3,549,084**	**4,226,548**	**4,450,967**	**4,488,370**

100 kW Station

Line	Particulars	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Total Annual Number of Charging Events - 100 kW		4,109	5,962	8,013	10,268	12,732	16,231	20,795	26,448	32,434	34,626
2	Minutes Per Charge Event		17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51
3	Number of Charging Minutes Per Year	Line 1 x Line 2	**71,953**	**104,393**	**140,305**	**179,793**	**222,934**	**284,211**	**364,113**	**463,103**	**567,923**	**606,296**

12.3 Please provide a levelized calculation assuming a 20% usage increase instead of 31%, and a 40% usage increase for both calculations over the term periods.

Response:

Please see the below table for the rates associated with the updated usage amounts.

	EV Usage 20% Increase	EV Usage 40% Increase
$/minute Rate for the 50 kW Station	$1.21	$0.13
$/minute Rate for the 100 kW Station	$0.97	$0.17

12.4 When does FBC expect to update its rates?

Response:

Please refer to the responses to BCUC IR1 6.7 to 6.9 for a discussion of the review of RS 96 and the potential to update the rate.

12.5 To the extent that the increases do not materialize as anticipated, would FBC apply for a rate change, in any direction, prior to when it would normally update its rates? Please explain.

Response:

Please refer to the responses to BCUC IR1 6.7 to 6.9 for a discussion of the review of RS 96 and the potential to update the rate.

13. Reference: Exhibit B-5, page 19

Table 3-3: EV Rate Comparison

Location	Provider	Fee Structure	Rate	Approx. # of fast chargers installed	Speed of fast chargers installed	Hyperlink
Alberta	ATCO	Time-based	$0.333/min	18	50 kW	https://www.atco.com/en-ca/projects/peaks-to-prairies-electric-vehicle-charging-station.html
British Columbia	City of Vancouver	Time-based	$0.26/min	7	50 kW	https://vancouver.ca/streets-transportation/electric-vehicles.aspx
British Columbia	FortisBC	Time-based (proposed rates)	50 kW $0.27/min 100 kW $0.54/min	23	50 kW – 100 kW	https://www.fortisbc.com/services/sustainable-energy-options/electric-vehicle-charging/public-electric-vehicle-charging-stations-in-bc
New Brunswick	NB Power / e-charge network	Time-based	$0.25/min	25	50 kW	https://www.echargenetwork.com/stations-and-rates
Ontario	Electric Circuit (Hydro Quebec)	Time-based	$0.283/min	75	50 kW	https://lecircuitelectrique.com/en/stations/fast-charge-station/
Quebec	Electric Circuit (Hydro Quebec)	Time-based	$0.1963/min	225	50 kW	https://lecircuitelectrique.com/en/stations/fast-charge-station/
Various	Canadian Tire / Electrify Canada	Time-based, tiered by power level	< 75 kW: $0.27/min < 125 kW: $0.77/min < 350 kW = $1.07/min Idling fee = $0.40/min	24	50 kW; 150 kW; 350 kW	https://www.electrify-canada.ca/pricing/
Various	Petro-Canada	Time-based	AB: $0.33/min BC: $0.27/min MB: $0.33/min NB: $0.25/min NS: $0.25/min ON: $0.33/min QC: $0.20/min SK: $0.33/min	~100	100 – 350 kW	https://www.petro-canada.ca/en/personal/fuel/canadas-electric-highway

13.1 The CEC notes that there is 350 kW service available. Does FBC expect to supply any different levels of charging service in the future? Please explain why or why not.

Response:

Please refer to the response to BCUC IR1 16.1.2. As noted in the response, FBC does not have any additional planned investments in public DC fast charging infrastructure at this time (of any charging capacity).

13.2 If yes, please describe what additional service levels FBC expects to implement, and when this would occur.

Response:

Please refer to the response to CEC IR1 13.1.

13.3 Please explain what an 'idling fee' is.

Response:

An idling fee is an additional time-based charge that is added to the cost of a charging session after charging is complete to discourage EV owners from occupying a charging station unnecessarily.

13.3.1 Did FBC consider implementing an idling fee? Please explain, and explain why it was not implemented at this time, and if FBC expects to do so in the future.

Response:

Please refer to the response to BCUC IR1 6.5.

13.4 Is the above chart exhaustive for Canada, or are there other service providers in Canada that are not included?

Response:

The information presented in Table 3-3 is based on a review of EV charging providers known to FBC as well as a review of public charging station websites and apps (e.g. PlugShare). There may be other station operators in Canada not shown in the table of whom FBC is unaware.

13.4.1 If there are others, please provide a brief discussion and identify any rates that are not within the range of the table presented.

Response:

Please refer to the response to CEC IR1 13.4.

13.5 Please provide rates in Washington state to the extent they are available.

Response:

FBC has been unable to find a consolidated source for statewide DCFC charging rates. However, for a comparison utility providing DCFC service, Puget Sound Energy (PSE) offers fast charging at PSE owned stations under Rate Schedule 551 at $7.50 USD per ½ hour.[3]

[3] https://www.pse.com/-/media/Project/PSE/Portal/Rate-documents/Electric/elec_sch_551.pdf.

14. Reference: Exhibit B-5, page 20

3.4 EV REVENUES VERSUS COST OF SERVICE AND RATE IMPACT ASSESSMENT

Due to the levelized nature of the rate, there will be some (early) years where the EV charging revenue will be less than the cost of service. In these years, all other FBC customers will bear the costs in excess of revenues. Conversely, in years where the charging revenue is greater than the cost of service, all other FBC customers will benefit from the excess of revenues.

To determine fair, reasonable and stable EV charging rates FBC must forecast future charging usage at the stations. The forecast of use, in minutes, at the stations is the billing determinant used to calculate the EV charging rates. FBC has provided a sensitivity analysis below to highlight the impact that varying levels of use have on the resulting rate.

To assess the potential impact of FBC's proposed EV charging rates on FBC's other electric customers, the Company analysed cases where the actual EV usage differs from the forecasted usage used to determine the proposed EV charging rates.

The sensitivity analysis below examines the rate impact to other FBC electricity customers if actual EV usage varies by +/- 10 percent and +/- 25 percent from the forecast embedded in the financial models. The table below shows that even if actual EV usage was 25 percent lower than forecast, the rate impact to other FBC customers is low for both stations at 0.033 percent and 0.010 percent.

Table 3-4: Rate Impact Sensitivity

	EV Usage 25% Lower	EV Usage 10% Lower	EV Usage 10% Higher	EV Usage 25% Higher
Rate Impact to Other FBC Customers 50 kW Station	0.033%	0.013%	-0.013%	-0.033%
Rate Impact to Other FBC Customers 100 kW Station	0.010%	0.004%	-0.004%	-0.010%

14.1 Please explain whether any of the above service providers could be considered as providing market-based or competitive service?

Response:

FBC considers that it is reasonable to conclude that the service providers in Table 3-3, such as Canadian Tire and Petro Canada, that are not regulated utilities must be providing market-based or competitive rates.

14.2 Please provide FBC's views on whether or not a market-based service provider could reasonably enter the market and compete with FBC's proposed rates. Please provide quantification to illustrate FBC's position.

Response:

FBC believes that prospective market-based service providers are likely to enter the market and be able to offer rates at or below FBC's proposed rates.. FBC notes that the Petro-Canada stations shown in Table 3-3 are of higher output and have rates set at a level equivalent to FBC's proposed 50 kW rate.

14.3 Does FBC expect its rates will encourage EV use? Please explain why or why not.

Response:

FBC believes that the availability of DC fast charging stations at stable, levelized and affordable rates will encourage EV use. Although the cost of fast charging is more expensive than charging at home at residential rates, fast charging is usually required only on longer trips where the rates compare favourably to gasoline and the service is much faster than less-expensive Level 2 alternatives.

14.4 Does FBC have any information on rate sensitivity and customer use, i.e. whether or not an increase or decrease would influence use?

14.4.1 If yes, please provide.

Response:

FBC does not have information relating to the price elasticity of DCFC service. However, given the requirements that drive use of higher priced highway-grade fast charging service as compared to lower priced destination-based Level 2 charging, FBC suspects DCFC service is relatively inelastic up to a certain threshold, likely equivalent to the cost of conventional fuels like gasoline.

14.5 Please provide a generally estimated rates that had 0 impact on other FBC customers.

Response:

The proposed rates of $0.27 per minute for the 50 kW stations and the $0.55 per minute for the 100 kW stations are expected to have a 0 percent impact on other FBC customers over the assets' lives.

14.6 Please provide a generally estimated rate for EV vehicle that was based on market rates, if different from above.

Response:

FBC believes the cost-based rates it has proposed for the 50 kW stations approximates a market-based rate as indicated in Table 3-3. Based on the rates currently charged by Petro-Canada, a market-based rate for the 100 kW stations could be set at a level closer to the proposed rate for the 50 kW stations (i.e., between $0.30 and $0.40 per minute).

15. Reference: Exhibit B-5, page 22

> **4. REGULATORY TREATMENT OF FBC'S EV DCFC STATIONS**
>
> As discussed in Section 1.2.1, FBC has 23 EV charging stations already constructed and open to the public. The capital and all other costs, revenues and contributions (CIAC) for these stations a being accounted for outside of FBC's regulated rate base. With this Application, FBC proposes to account for the existing stations and all future stations[11] in FBC's regulated rate base and book of accounts. As discussed in Section 2, all of the stations that FBC has already constructed are in the class of prescribed undertakings set out in section 5 of the GGRR. Upon approval of this Application, FBC will account for the net book value of these stations and the net book value of the CIAC received for these stations in rate base. The following table sets out the approximate net book value of the existing EV station charging assets and approximate net book value of contributions received as at December 31, 2020.
>
> **Table 4-1: EV Charging Assets and CIAC (approximate book value 12/31/2020)**

$ million	Gross Value	Accumulated Depreciation/ Amortization	Net Book Value
EV Charging Assets	3.52	(0.28)	3.24
CIAC	(1.27)	0.11	(1.16)
Total	**2.25**	**(0.17)**	**2.08**

15.1 Please provide FBC's rates for its existing stations.

Response:

Please refer to the response to CEC IR1 2.1.

15.2 Do FBC's existing rate include a 15% transaction fee?

15.2.1 If not, why not?

Response:

Confirmed. FBC's existing interim rate includes the 15 percent transaction fee.

15.3 To the extent that the rate differs from FBC's proposed rates, please explain why.

Response:

The interim rate is currently set at $0.30 per minute and the proposed rates are $0.27 per minute (50 kW) and $0.55 per minute (100 kW). The interim rate is comparable to the proposed 50 kW station rate of $0.27 per minute because it was developed using 50 kW charging stations. The proposed rate differs from the interim rates for reasons including updated capital expenditures (actual and forecast), inflation rates, RS 21 electricity costs, EV station usage and O&M, among other things. The proposed rates represent the most current figures for assessing the total cost of service of both the 50 kW and 100 kW stations.

15.4 If FBC were to set the new rates at the existing rates, how long would it take for the costs to be recovered? Please provide the calculations.

Response:

As shown in the following table, if FBC were to set the new rates at the existing rates for the 50 kW stations it would take 11.85 years for the costs to be recovered.

1

($000s), unless otherwise stated

50 kW Interim Rate

Line		Reference	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Number of Charging Minutes per Year	Appendix E, Sch 2, Line 11	15,309	94,386	393,881	762,328	1,017,534	1,367,578	1,752,476	2,172,980	2,770,262	3,549,084	4,226,548	4,450,967	4,488,370
2	Levelized $ per minute rate to recover Cost of Service	50kW interim Rate (less 15% transaction fee)	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
3	Total Yearly Revenue	(Line 1 x Line 2)/ 1,000	**4**	**24**	**100**	**194**	**259**	**349**	**447**	**554**	**706**	**905**	**1,078**	**1,135**	**1,145**
4	Total Annual Revenue Requirement from EV Customer	Appendix E, Sch 2, Line 5	1	-282	254	737	639	624	604	580	541	507	503	416	460
5	Difference in Revenue and Cost of Service	Line 3 - Line 4	**3**	**306**	**(153)**	**(542)**	**(380)**	**(276)**	**(157)**	**(26)**	**166**	**398**	**575**	**719**	**685**
6	(Under)/ Over Recovery	Sum of Line 5	**1,316**												

50 kW Interim Rate

Line	Payback Period Calculation	Reference	Amount	Number of Years
1	Total Annual Revenue Requirement from EV Customer	50kW, Sum of Line 4	5,584	
2	Total Yearly Revenue	50kW, Sum of Line 3, 2018-2028 years	4,621	11 years
3	Difference	Line 1 - Line 2	963	
4	2030 Revenue	50kW, Line 3, 2029 Year	1,135	
5	% of Year Needed to Recoup Difference	Line 3 / Line 4	0.849	0.849 years
6	Total payback Period	Number of Years Column, Line 2 + Line 5		**11.85** years

2

16. Reference: Exhibit B-5, page 22

> **4. REGULATORY TREATMENT OF FBC'S EV DCFC STATIONS**
>
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> **Table 4-1: EV Charging Assets and CIAC (approximate book value 12/31/2020)**

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EV Charging Assets	3.52	(0.28)	3.24
CIAC	(1.27)	0.11	(1.16)
Total	**2.25**	**(0.17)**	**2.08**

16.1 How have the costs for individual charging stations changed since they were first introduced by FBC? Are they increasing or decreasing and by what percentages? Please provide a quantitative response to the extent possible.

Response:

The costs to deploy individual charging stations have remained consistent since the initial deployments beginning in 2018 with FBC and the Accelerate Kootenays initiative. Differences in deployment costs are generally related to site-specific circumstances such as asphalt/concrete repair, landscaping, and hydrovac excavation services when required. Please refer to the response to BCUC IR1 1.1 for additional detail on the capital expenditures incurred to date for each site.

17. Reference: Exhibit B-5, page Appendix E Schedule 1 page 2 of 6

FortisBC Inc.
EV Charging Stations Review - 50 kW Stations
Schedule 1
September 2020
($000s), unless otherwise stated

Line	Particulars	Reference	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
35	Capital Spending														
36	Project Capital Spending[2]		599	1,644	1,238	965	-	-	-	25	26	26	27	27	28
37	AFUDC		-	-	37	79	-	-	-	-	-	-	-	-	-

17.1 Please explain the purpose of the capital spending occurring after 2025.

Response:

The 13-year analysis for the 50 kW stations extends past the expected useful life (10 years) of the stations that came into service in 2018 through 2020. FBC notes that the capital spending that was shown as occurring after 2025 should have been shown as beginning in 2028.

Reallocating the total $158 thousand of capital spend from 2025-2030 equally into 2028, 2029 and 2030 results in an insignificant difference that does not affect the 50 kW rate, due to rounding. The 50 kW rate changes from $0.267 per minute to $0.266 per minute and would still be proposed at $0.27 per minute.

The inclusion of sustaining capital in years 2028 through 2030 was a financial modeling exercise meant to set the RS 96 at an appropriate level recognizing that EV charging demand would continue into the future and not to indicate that these stations could be maintained indefinitely. The cost and ability to prolong the lives of these assets is not known with certainty at this time, however FBC felt it was appropriate to add a reasonable level of sustaining capital to recognize that it is unlikely that the stations constructed in 2018, 2019 and 2020 would be able to continue to provide service without cost through to 2030. It is also important to note that there were five stations constructed throughout 2018, seven throughout 2019 and there will be eleven constructed throughout 2020. Logically, the sustaining capital would be heavily weighted to the five 2018 stations as those would have to operate 3 years longer than the 10 year depreciable life would suggest, assuming then that fewer sustainment dollars would be required for the seven 2019 stations and little to none for the 2020 stations.

17.2 Has the capital spending been estimated at a Class 3 level? Please explain.

17.2.1 If not at a Class 3 level, please explain why not.

Response:

No, the estimates for the referenced sustaining capital expenditures in years 2025 to 2030 have not been estimated at a Class 3 level. FBC has not developed Class 3 estimates given the

1 relatively minor sustaining capital expenditures, which include repair/replacement of internal
2 station components including power electronics such as the AC-DC power conversion modules.

3