

Diane Roy Vice President, Regulatory Affairs

Gas Regulatory Affairs Correspondence Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence Email: <u>electricity.regulatory.affairs@fortisbc.com</u> FortisBC 16705 Fraser Highway Surrey, B.C. V4N 0E8 Tel: (604)576-7349 Cell: (604) 908-2790 Fax: (604) 576-7074 www.fortisbc.com

November 19, 2020

British Columbia Public Interest Advocacy Centre Suite 803 470 Granville Street Vancouver, B.C. V6C 1V5

Attention: Ms. Leigha Worth, Executive Director

Dear Ms. Worth:

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 British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Council of Senior Citizens' Organizations of BC, Active Support Against Poverty, Disability Alliance BC, and the Tenant Resource and Advisory Centre *et al.* (BCOAPO) 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 BCOAPO 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	1.0	Refer	ence: I	Exhibit B-5, page 3 (lines 4-6); page 10 (lines 7-10);
2				page 22 (lines 1-13) and Appendix E, page 2 (50 & 100 kW)
3 4 5		1.1	How ma Nakusp	any stations are on the sites FBC currently owns in New Denver and that will be transferred to BCH?
6	Resp	onse:		
7	FBC o	currently	y owns on	e charging station at each of the New Denver and Nakusp sites.
8 9				
10 11 12 13		1.2	How ma Princeto	any stations are on the sites BCH currently owns in Keremeos and on that will be transferred to FBC?
14	Resp	onse:		
15	BC Hy	ydro ha	s installed	one charging station at each of the Keremeos and Princeton sites.
16 17				
18 19 20 21		1.3	With res the land	spect to the two sites currently owned by BCH, does BCH currently own associated with the sites or are sites leased?
22	<u>Resp</u>	onse:		
23 24 25 26	BC Hy Licent alread date.	ydro do ces of dy discu	es not ow Occupatio ussed this	In the land associated with the two sites. FBC intends to secure no-cost on for both sites prior to proceeding with the station swap. FBC has with both site hosts, neither of whom have indicated any concerns to
27 28				
29 30 31 32 33			1.3.1	If owned by BCH, is ownership of the land being transferred to FBC and, if so, please reconcile with the statement on page 17 that FBC's sites are all leased.

FORTIS BC ^{**}		FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
		Response to British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Council of Senior Citizens' Organizations of BC, Active Support Against Poverty, Disability Alliance BC, and the Tenant Resource and Advisory Centre <i>et al.</i> (BCOAPO) Information Request (IR) No. 1	Page 2
1	Response:		
2	Please refer	to the response to BCOAPO IR1 1.3.	
3			
4			
5	4 4	Are all of the stations at all four sites 50 MM stations?	
6 7	1.4	Are all of the stations at all four sites 50 kw stations?	
8	<u>Response:</u>		
9	Yes, all of th	e charging stations at all four sites are 50 kW stations.	
10 11			
12 13	15	Why is this "exchange" of sites taking place?	
14	1.5	with is this exchange of sites taking place:	
15	<u>Response:</u>		
16	Please refer	to the response to BCUC IR1 17.2.	
17 18			
19			
20	1.6	Does Table 4-1 include the cost of FBC stations that will be trans	sferred to BCH or
21 22		the cost of the stations that BCH will transfer to FBC?	
23	<u>Response:</u>		
24	Table 4-1 in	ncludes the cost ¹ of the FBC stations that will be transferred t	o BC Hydro. As
25 26	Princeton to	its rate base at FBC's net book value of the stations in Nakusp a	and New Denver.
27	The exchan	ge will not have an impact on Table 4-1.	
28 29			
30 21	4 7	Place provide a schedule that acts out as of Decembe	r 21 2020 tha
31	1.7	(approximated) book value of: i) the FBC stations that will be sta	ations that will be

¹ Estimated net book values as at December 31, 2020.



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- transferred to BCH and ii) the stations that BCH will transfer to FBC using the same format as in Table 4-1.
- 2 3

4 <u>Response:</u>

5 Please see the table below for the estimated net book value of the Nakusp and New Denver 6 stations as at December 31, 2020. FBC will value the Princeton and Keremeos stations at the 7 same net cost as the Nakusp and New Denver stations. However, the precise allocation 8 between the Princeton and Keremeos stations is not yet known as of the filing date of this IR 9 response. As shown in the table below, if the stations were transferred at December 31, 2020, 10 the combined net book value of the Princeton and Keremeos stations would be approximately

11 \$353 thousand.

DCFC Station	Gross Value (\$000s)	Accumulated Depreciation (\$000s)	Net Book Value (\$000s)
Nakusp DCFC	\$174	\$(14)	\$160
New Denver DCFC	\$209	\$(16)	\$193
Princeton/ Keremeos DCFC			\$353

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- 1.8 The schedules in Appendix E do not show any adjustments in rate base for this exchange of stations/sites. How is this exchange accounted for/treated in the Cost of Service and Financial Schedules?
- 18 40 **D** - -

19 Response:

As confirmed in the response to BCUC IR1 17.4, FBC plans to add the stations in Keremeos and Princeton to its rate base at FBC's net book value of the stations in Nakusp and New Denver. The exchange will not have an impact on the proposed rates; therefore, no adjustment to the financial schedules is necessary.



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1 2.0 Reference: Exhibit B-5, page 5 (lines 18-21)

- 2 2.1 Has the recovery of the actual/forecast costs associated with the regulatory 3 process and approval of this Application that are currently being captured in the 4 EV Charging Stations Rate Design and Tariff Application deferral account 5 included in the cost of service analysis and proposed rate calculations set out in 6 sections 3.2 and 3.3 of the current Application?
 - 2.1.1 If yes, please indicate where in the Schedules provided in Appendix E these costs have been included?
 - 2.1.2 If not, why not?
- 102.1.3If not, please provide a revised cost of service analysis that includes the
recovery of these costs over a five-year period starting in 2022. (Note:12Please use an alternative amortization period if FBC feels five years is
not appropriate and explain why)

15 **Response:**

16 The external costs related to the rate design, Application and Revised Application are captured 17 in the *Rate Design and Rates for Electric Vehicle Direct Current Fast Charging Service* 18 *Application* deferral account which was approved for this purpose by BCUC Order G-246-18 19 and is not included in the cost of service calculation for RS 96. The associated directive 20 specified that the amortization period would be proposed in a future application.

21 Including these costs into the rate calculation for recovery solely from EV customers would be 22 inconsistent with the treatment of other rate-related application costs, which have been 23 recovered through rates generally despite being focused on a narrow subset of customers. 24 Examples of rate-related proceedings where the external costs of the application were 25 recovered from all customers are Net-Metering, the Stand-by and Maintenance rate, Self-26 Generation policies and Lighting tariff revisions related to light emitting diode (LED) technology. 27 This treatment is appropriate because all customers benefit from the rate setting process and 28 the BCUC's oversight over rates and those rate schedules with a smaller customer base should 29 not be disproportionately affected by achieving this objective.

30 While FBC does not agree that these external costs should be recovered solely EV customers, 31 and doing so would be inconsistent with the past practice of FBC and the BCUC, please refer to 32 Attachment 2.1a and 2.1b for the requested revised cost of service analysis. In that analysis, 33 FBC amortized the costs over 10 years to match the asset lifecycle of the EV stations. The 34 estimated costs total \$175 thousand and have been allocated to the 50 kW and 100 kW stations 35 based on the percentage of the total projected capital spending from 2018 to 2021. The 50 kW stations were allocated 86 percent of the costs and the 100 kW stations were allocated 14 36 37 percent. The inclusion of the application costs resulted in revised rates of \$0.28 per minute for 38 the 50 kW stations and \$0.57 per minute for the 100 kW stations.



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- bry Centre et al. (BCOAPO) information Request (IR) No. 1 1 2 3.0 **Reference:** Exhibit B-5, pages 7-8 3 Preamble: The Application states (page 8): "FBC will own and operate the DCFC 4 stations, which satisfies the criteria in section 5(2)(a) of the GGRR. FEI 5 will contract FLO Services Inc. (FLO) to provide maintenance services 6 and network management services. FLO will provide customer support services for EV drivers using the station, and will also be responsible for 7 providing technical support for diagnosing and remedying any 8 9 breakdowns or malfunctions of the DCFC stations." (Emphasis Added) 10 Why is it FEI (and not FBC) that is contracting with FLO Services Inc? 3.1 11 12 Response: 13 The reference to FEI is a typographical error. The Revised Application should read: "FBC will 14 contract FLO Services Inc. (FLO) to provide maintenance service and network management 15 services." 16 17 18 3.2 19 Does the fact that FEI is doing this contracting impact (increase) FEI's annual 20 charges to FBC for shared or other services? 21 3.2.1 If not, why not? 22 3.2.2 If yes, what is the estimated impact in 2022? 23 3.2.3 If yes, please confirm that these "charges" have been included in the 24 cost of service analysis and proposed rate calculations set out in 25 sections 3.2 and 3.3 of the current Application and indicate where in the 26 Appendix E schedules this is done. 27 28 **Response:** 29 Please refer to the response to BCOAPO IR1 3.1. 30 31 32
- 333.3Are there any aspects related to the annual operation and maintenance of the34DCFC stations that FBC will carry out directly?
- 35 3.3.1 If yes, what are they?



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- 3.3.2 If not, what is the basis for FBC's claim that it operates the DCFC stations?
- 3
- 4 <u>Response:</u>
- 5 FBC performs a number of operating and maintenance activities as described in the response to
- 6 BCUC IR1 10.1. As the owner/operator of the DCFC stations, FBC also provides oversight of
- 7 the services provided by FLO described in BCUC IR1 10.1.



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1 4.0 Exhibit B-5, pages 7-8

- 2 **Preamble:** The Application states: "The existing 23 DCFC stations (16 sites) 3 currently in operation, as well as the 17 planned stations (7 sites) in the 4 Application meet the definition of an eligible charging station in Section 5 5 5(1) of the GGRR in that they are all: available for use 24 hours a day by 6 any member of the public; do not require users to be members of a 7 charging network, and are capable of charging electric vehicles of more 8 than one make.
- 9 Drivers using FBC DCFC stations for EV recharging purposes will have 10 two options for payment transactions with FBC:
- 111. Creating a membership with the FLO network and linking an12appropriate means of payment (credit card, bank account) to that13membership; or
- 142. Scanning a Quick Response Code (QR code) on the station with their15mobile phone which will take the customer to a payment portal where16they can enter their credit card details which will allow the station to17be activated. Customers may also contact FLO's telephone customer18support to establish a single use credit card transaction. The19customer's credit card will be charged the appropriate amount once20the charging session is complete."
 - 4.1 Is there any fee (either fixed or per transaction) associated with FLO network membership?
- 2324 <u>Response:</u>
- 25 No, the FLO network membership is free for EV drivers.
- 26
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 28
 29 4.2 Will FLO's telephone customer support be available 24/7 to accept calls from customers wanting service who do not have a FLO membership or a mobile phone with the capability to use the QR code?
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33 Response:

Yes, FLO's customer support is available 24/7 to accept calls from customers wanting service who do not have a FLO membership or a mobile phone with the capability to use the QR code. FBC notes these particular circumstances are rarely encountered, but are supported by FLO's

37 customer support.



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4.3 Will customer's using either the QR Code or establishing payment through FLO's telephone customer support incur any additional cost for the transaction?

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7 Response:

8 Customers establishing payment through FLO's QR Code payment portal or through FLO's 9 telephone customer support for a single use credit card transaction will incur a fee of \$0.50. 10 FBC notes that this method of payment is relatively infrequent with the majority of customers 11 electing to transact via either a FLO network membership or roaming-supported membership 12 (e.g. Chargepoint, BC Hydro).

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- 15
- 4.4 If customers do not have a FLO membership or a mobile phone will they be able
 to use the station and, if yes, how?
- 18

19 **Response:**

Please refer to the response to BCOAPO IR1 4.2. FLO's customer support can enable charging
 sessions for any customers without a FLO membership or mobile phone provided they are able

to contact FLO via telephone (landline or otherwise). Should this option be unavailable to the customer (in addition to the other options for transaction via network membership), they would

24 be unable to initiate a charging session.



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1 5.0 Reference: Exhibit B-5, pages 7-8

- 2 **Preamble:** The Application states: "All FBC DCFC stations will be equipped with 3 connectors supporting both CHAdeMO and Combined Charging System 4 (CCS) connectors capable of charging electric vehicles of more than one 5 make."
 - 5.1 What makes of electric vehicles will the FBC DCFC stations be able and not be able to charge?
- 7 8

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9 Response:

- 10 Currently, every make/model of electric vehicle with DC fast charging capability will be able to
- 11 charge at the FBC DCFC stations through the CHAdeMO or CCS connectors. Tesla is the only
- 12 manufacturer with a proprietary connection system; however, Tesla does offer a CHAdeMO
- 13 adapter to allow its vehicles to use DCFC stations like those deployed by FBC.



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6.0 Exhibit B-5, pages 7-11 and Appendix A 1 **Reference:**

2 6.1 Please confirm that Table 2-1 sets out the number of charging sites (as opposed 3 to stations) in each limited municipality.

5 Response:

6 Confirmed.

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10 6.2 Why is the 2016 Census (per Table 2-1 and 2-2) used to determine whether a 11 station/site is located in a "limited" municipality? Is there not more recent data 12 available; for example, from the municipalities themselves?

14 Response:

15 FBC believes the published census data is the most reasonable source upon which to 16 determine the population of a "limited" municipality. It is an authoritative source and uses 17 consistent measures across municipalities

18 Municipalities may or may not have more recent data available, which may or may not be based 19 on better data than the 2016 census.

20 As shown in Table 2-2, Castlegar and Trail are the only two municipalities that are close to the 21 9,000 threshold for being a "limited municipality" under section 5 of the GGRR. Castlegar's 22 website² indicates a population of 8,992 (no named source), which is below the threshold. 23 Trail's website³ indicates a population of 7,681 (based on 2011 Census data), which is also 24 below the threshold. In any case, even if these municipalities were above the threshold, FBC's 25 single sites in each of these municipalities would not exceed the site limit should the population 26 of either of these communities be 9,000 or more.

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- 30 31
- 6.3 Do "eligible charging sites" (as the term is used and defined in Section 5 of the GGRR) include both sites owned by exempt and non-exempt utilities?
- 32

² https://www.castlegar.ca/visitors/about-castlegar/.

https://www.trail.ca/en/inside-city-hall/about-trail.asp.



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1 Response:

- 2 Yes, an eligible charging site, meaning a site where one or more eligible charging stations are
- 3 located, could be owned by either an exempt or non-exempt utility.
- 4 5 6 7 6.4 What is the basis for the exempt utility site count (current) and exempt utility site 8 count (planned) values set out in Table 2-1? 9 10 Response: 11 Please refer to the responses to BCUC IR1 3.7 and 3.7.1. 12 13 14 15 6.5 Are the values set out in Table 2-1 for current and planned exempt utility site 16 counts still valid? If not, please provide an update. 17 18 **Response:** 19 The values set out in Table 2-1 for current and planned exempt utility site counts are still valid. 20 21 22 23 6.6 What is the status of the site in the limited municipality of Penticton that FBC 24 indicated it planned on owning and operating beginning October 1, 2020 (page 9, 25 lines 5-6)? 26 27 Response: 28 FBC completed this transaction on October 1, 2020 and currently owns and operates this site in 29 Penticton. 30 31 32 33 6.7 Section 5 of the GGRR states: "the public utility reasonably expects, on the date 34 the public utility decides to construct or purchase an eligible charging station, 35 that: (i) the station will come into operation by December 31, 2025, and (ii) if the



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station will be located in a limited municipality, the number of eligible charging
sites in the municipality on the date the station will come into operation will not
exceed the site limit for the municipality on that date". Has FBC formally decided
to construct/purchase a station/stations at the second site intended for
Penticton?

- 6.7.1 If yes, when was the "formal" decision made and by whom?
- 6.7.2 If not, does FBC intend to update its assessment as to whether the second site will meet the requirements of the GGRR per Section 5 (2) prior to formally making this decision?
- 11 Response:

FBC plans to proceed with a second station or site in Penticton, but has not yet made any financial commitment. FBC continues to review potential locations for a second station in Penticton, including those locations as indicated in Table 2-2 from the Revised Application.

15 FBC will only proceed with the second station or site if it would meet the requirements of section

16 5 of the GGRR, including section 5(2), at the time FBC decides to construct or purchase the 17 eligible charging station.

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1 7.0 Reference: Exhibit B-5, page 9

- 2 Preamble: The Application states: "While FBC expects all of its planned stations to 3 come into operation prior to January 1, 2022, all of its charging stations 4 (both current and planned) will be configured to use the OCPP. OCPP 5 refers to a network communication protocol between DCFC stations and 6 a charging station management system. FBC's DCFC stations currently 7 use a communication protocol referred to as the Open Network Protocol 8 (ONP)-Intranetworking for communication between the stations and the 9 charging station management system. However, FBC's vendor 10 AddEnergie is committed to achieving OCPP compliance by mid-2021 for all stations owned and operated by FBC". 11
- 7.1 Will the two stations at the two sites currently owned by BCH to be transferred toFBC also be configured to use the OCPP?

15 **Response:**

16 FBC will replace the existing stations at Keremeos and Princeton with the AddEnergie stations it

17 owns in Nakusp and New Denver as part of the proposed transfer. As a result, these stations

18 will be configured to use OCPP as discussed on page 9 of the Revised Application. Please also

19 refer to the response to BCUC IR1 17.1.

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FORTIS BC [*]			Applica	Submission Date: November 19, 2020	
			Respons Columbia of B0 Reso	e to British Columbia Public Interest Advocacy Centre representing the British a Old Age Pensioners' Organization, Council of Senior Citizens' Organizations C, Active Support Against Poverty, Disability Alliance BC, and the Tenant urce and Advisory Centre <i>et al.</i> (BCOAPO) Information Request (IR) No. 1	Page 14
1	8.0	Refe	rence:	Exhibit B-5, pages 10-11	
2 3 4		8.1	In Tat notatio one st	ble 2-2, under the column titled "5(2)(b)(i)", for Kelowna on that there are two stations involved. Does this mean ation associated with each of the other dates in this colum	Airport there is a that there is only n?
5 6 7			8.1.1	If not, please provide a revised table that indicate individual stations associated with each date.	s the number of
8	<u>Resp</u>	onse:			
9 10	Yes, f Kelow	for exis vna Airj	ting stati port, as r	ons in Table 2-2, there is one station associated with eacl noted).	n date (other than
11 12					
13 14 15 16		8.2	In Tal chargi	ble 2-2, how many of the stations at each site are 50 ng stations?	kW vs. 100 kW
17	<u>Resp</u>	onse:			
18	Pleas	e refer	to the re	sponse to BCUC IR1 1.1.	
19 20					
21 22 23 24 25 26 27 28		8.3	Is eac statior revise (if app date b overal	ch "station" only capable of charging one vehicle at a time ins can charge more than one vehicle at a time, please d version Table 2-2 or include in the response to the pre- plicable) not only the station count and station kW asso nut also the number of vehicles that can simultaneously be I maximum potential demand for the site.	me? If some/all provide either a eceding questions ociated with each e charged and the
29	<u>Resp</u>	onse:			
30	Pleas	e refer	to the re	sponses to BCUC IR1 1.1 and 7.5.	
31					



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1 9.0 Reference: Exhibit B-5, pages 10-11

- 9.1 What criteria does FBC use to decide where a charging site should be located,
 how many charging stations should be installed and whether the stations should
 be 50 kW or 100 kW?
- 5

6 Response:

Aside from meeting the requirements of section 5 of the GGRR, below are FBC's criteria when
considering where a charging site should be located, how many charging stations should be
installed, and the speed of the charging station.

- 10 Charging site:
- Land lease arrangement. It is important that the owner of the charging site land be contractually committed to keeping the charging site clean and cleared of debris, garbage and snow. Low (or zero) lease costs are also desirable.
- Proximity to existing or planned charging sites. To reduce range anxiety, charging sites should be located to provide a continuous network along highways and to provide local options in larger towns and cities.
- Adequacy of proximate charging sites. New charging sites will be considered when existing FBC sites (if any) cannot accommodate additional chargers and existing infrastructure is inadequate to serve public demand in an area. Adequacy will be determined using usage data (for FBC stations), PlugShare data and customer feedback.
- **Proximity to services.** Charging sites should be placed near infrastructure desired by users, including restrooms, restaurants and convenience stores.
- Customer feedback. Feedback from individuals and associations like EV owners'
 clubs, whether directly to FBC or through comments in websites such as PlugShare, will
 be taken into account when siting new infrastructure.
- 28 Number of charging stations:
- Adequacy of proximate charging stations. New charging stations will be considered when existing infrastructure is inadequate to serve public demand in an area. Adequacy will be determined with usage data (for FBC stations) and with PlugShare data and customer feedback for third-party sites.
- Customer feedback. Feedback from individuals and associations like EV owners' clubs, whether directly to FBC or through comments in websites such as PlugShare, will be taken into account when adding new infrastructure.

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- 1 Station charging speed:
- Vehicle sales data. As more vehicles capable of higher charging speeds are sold, the
 demand for higher speed charging will increase.
 - Adequacy of existing infrastructure. If the demand for already-deployed high-power charging stations is causing customers to have to wait, more high-power charging stations will be considered in that area. If there are underutilized high-power stations in an area, FBC will consider re-deploying them to areas of higher demand.
- Customer feedback. Feedback from individuals and associations like EV owners'
 clubs, whether directly to FBC or through comments in websites such as PlugShare, will
 be taken into account when purchasing new infrastructure.
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9.2 Please demonstrate that each of the sites listed in Table 2-2 meets these criteria.

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16 **Response:**

While FBC's evaluation criteria are somewhat subjective and were applied generally as part ofits EV charging site selection, the criteria that FBC must demonstrate compliance with are those

19 included in the GGRR as set out in Section 2.1 of the Revised Application. Please also refer to

20 the response to BCSEA IR1 1.3.



FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
Response to British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Council of Senior Citizens' Organizations of BC, Active Support Against Poverty, Disability Alliance BC, and the Tenant Resource and Advisory Centre <i>et al.</i> (BCOAPO) Information Request (IR) No. 1	Page 17

10.0 **Reference:** 1 Exhibit B-5, pages 12 and 20 2 Preamble: The Application states (page 12): 3 "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: 4 5 (2) In setting rates under the Utilities Commission Act for a public utility carrying out a prescribed undertaking, the commission must set rates that 6 7 allow the public utility to collect sufficient revenue in each fiscal year to 8 enable it to recover its costs incurred with respect to the prescribed 9 undertaking." (Emphasis added) 10 The Application also states (page 20): "Due to the levelized nature of the rate, 11 there will be some (early) years where the EV charging revenue will be less than 12 the cost of service. In these years, all other FBC customers will bear the costs in 13 excess of revenues. Conversely, in years where the charging revenue is greater 14 than the cost of service, all other FBC customers will benefit from the excess of 15 revenues." 16 10.1 Given that the CEA requires that the BCUC set rates related to prescribed 17 undertakings that allow the public utility to collect sufficient revenue in each fiscal 18 year to enable it to recover its costs, why is it appropriate to the EV charging 19 revenue in the early years to be less than the cost of service? 20 21 **Response:** 22 Please refer to the response to BCUC IR1 6.6. 23 24 25 26 10.2 Did FBC consider addressing the under-recovery of costs in the early years by 27 establishing a regulatory/deferral account that would track the under recovery in 28 the early years and then recover it in later years through the RS 96 rates? 29 10.2.1 If yes, please outline the pros and cons associated with such an 30 approach and why it was rejected? 31 10.2.2 If not, discuss the pros and cons of such an approach as compared to the approach proposed by FBC. 32 33



FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
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1 Response:

FBC considered but rejected the option of establishing a deferral account to track over and under recoveries over the 10 year analysis period.

The only reason that FBC has been able to identify in support of the deferral account approach is to capture variances between actual and forecast costs and revenues and isolate them from other customers. The reasons why FBC does not believe a deferral account approach is neither necessary or appropriate are listed below.

- Levelized rates are a common approach to rate setting, and will achieve a similar result
 for RS 96 without requiring tracking of variances in a deferral account.
- FBCs approach will treat RS 96 customers more consistently with FBC's other customers. It is accepted regulatory practice that no rate class exactly recovers its cost of service at any given point in time, and that there is a range of reasonableness where this is considered acceptable. It is not appropriate to hold RS 96 customers to a higher standard than all other rate classes by requiring them to exactly recover their costs.
- 15 3. Annual variances will not be material to other customers.
- 4. Section 18(2) of the Clean Energy Act requires rates to be set 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, FBC's other customers backstop the recovery of FBC's charging station costs to ensure that costs are recovered, and deferring the recovery of costs incurred is not permitted.
- 5. RS 96 can be adjusted, if necessary, in the future and may depend on factors other than revenue surpluses or deficiencies, including the rates charged by other DCFC operators.
- As such, FBC does not believe there is an advantage to using a deferral account.

FORTIS BC ^{**}		BC™	Applica	Submission Date: November 19, 2020	
			Response Columbia of BC Resou	Page 19	
1	11.0	Refe	rence:	Exhibit B-5, pages 10-11 and page 13	
2 3 4 5		Prea	mble:	The Application states (page 13): "FBC has assumed c kWh per charge event based on historical kWh volu session at FBC's existing stations. Based on historical us kWh corresponds to approximately 30 minutes of chargin	onsumption of 20 imes per charge sage patterns, 20 ig."
6 7		11.1	Please	e confirm that the 20 kWh per 30 minutes is based on a 50	kW station.
8	<u>Respo</u>	nse:			
9	Confirm	ned.	Please a	lso refer to the response to BCUC IR1 8.1.	
10 11					
12 13 14 15	Deene		11.1.1	What is the assumed typical usage and length of cha 100kW station and how were these values determined?	rging event for a ?
10	Respo	onse:	4.5.46.5.45		
17 18 19	Please	reter	to the rea	sponse to BCUC IR1 8.1.1.	
20 21 22 23 24 25		11.2	For ea site the there proces	ch of the sites listed in Table 2-2, is the only electricity us e usage associated with the charging station(s) when it/the other usage as well such as security lighting or usage ssing equipment?	age at a charging ey are in use or is by the payment
26	<u>Respo</u>	nse:			
27 28 29 30	Additio recorde include estima	nal el ed thr ed in ted 20	ectricity u ough the the cost) kWh pe	usage at sites related to ancillary station equipment and di utility meter (single meter per site). These additional ele of service analysis. These additional volumes are in r charge event.	splay lighting are ectricity costs are cremental to the
31 32					
33					

	_			
FORTIS BC [*]		Applicati	Submission Date: November 19, 2020	
-		Response Columbia (of BC, Resour	to British Columbia Public Interest Advocacy Centre representing the British Old Age Pensioners' Organization, Council of Senior Citizens' Organizations Active Support Against Poverty, Disability Alliance BC, and the Tenant ce and Advisory Centre <i>et al.</i> (BCOAPO) Information Request (IR) No. 1	Page 20
4	11.0	How io	the electricity upper at each site metared (i.e., is there	a aingla matar far
2	11.3	each si	the electricity usage at each site metered (i.e., is there a te and/or does each station have a meter) and does the	a single meter lor
3		capture	non-station usage (if there is any)?	e metered deuge
4				
5	<u>Response:</u>			
6	Please refer	to the res	ponse to BCOAPO IR1 11.2.	
7 8				
9				
10 11	11.4	Please service	provide a schedule that, for each of the sites with char for part/all of 2018, sets out for the year:	rging stations in-
12 13 14		i.	the number of days the stations were in-service and (Note: If there was more than one station and the da station, please report each separately),	d their kW rating ys differ for each
15		ii.	the number of charging events,	
16		iii.	the number of charging minutes,	
17		iv.	the average number of charging minutes per event,	
18		v.	the total kWh used,	
19		vi.	the average maximum monthly demand,	
20		vii.	the average kWh per charging event (based on (ii) and	(iii)) for the site),
21		viii.	the overall (based on all sites) average kWh per event,	
22		ix.	the number of charging events per day at the site, and	
23 24		Х.	the overall (based on all sites) average number of cha day.	arging events per
25 26 27 28		11.4.1	As part of the response, please indicate whether the includes all kWh usage at the site (i.e., usage for pur actual charging events).	ne kWh reported poses other than
20 29	<u>Response:</u>			
30	A portion of	this respo	onse is redacted pursuant to Section 18 of the BCUC's	Rules of Practice

A portion of this response is redacted pursuant to Section 18 of the BCUC's Rules of Practice and Procedure (Order G-15-19) regarding confidential documents because it contains commercially sensitive information that, if disclosed, may prejudice negotiations with other parties in future bid and contract negotiations. A confidential version of this response is being filed with the BCUC under separate cover and can be made available to registered parties upon providing a signed form of Confidentiality Declaration and Undertaking acceptable to the BCUC.



FortisBC Inc. (FBC or the Company) Submission Date: Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct November 19, 2020 Current Fast Charging (DCFC) Service (Revised Application) Response to British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Council of Senior Citizens' Organizations of BC, Active Support Against Poverty, Disability Alliance BC, and the Tenant

Page 21

1

Tab	le 1:	2018	Data

Resource and Advisory Centre et al. (BCOAPO) Information Request (IR) No. 1

Station	In-service Date	# of days in service (i)	kW rating (i)				
Salmo	January 12, 2018	354	50 kW				
Christina Lake	January 12, 2018	354	50 kW				
Creston	January 12, 2018	354	50 kW				
Castlegar	January 12, 2018	354	50 kW				
Greenwood	January 12, 2018	354	50 kW				
Total	-	1,770	-				

2

3 The kWh values reported above include only the energy delivered to vehicles during charging 4 events, not the entire energy usage at site (refer to the response to BCOAPO IR1 11.2). The average maximum monthly demand is based on the overall site demand as recorded through 5 6 the utility meter for the site.

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11.5 Please provide a schedule that, for each of the sites with charging stations inservice for part/all of 2019, sets out for the year:

- i. the number of days the stations were in-service and their kW rating (Note: If there was more than one station and the days differ for each station, please report each separately),
- 15 ii. the number of charging events,
- 16 iii. the number of charging minutes,
- 17 the average number of charging minutes per event, iv.
- 18 the total kWh used, v.
- 19 vi. the average maximum monthly demand,
- 20 vii. the average kWh per charging event (based on (ii) and (iii)) for the site),
- 21 viii. the overall (based on all sites) average kWh per event,
- 22 the number of charging events per day at the site, and ix.
- 23 the overall (based on all sites) average number of charging events per Х. 24 day.

	FORTIS	BC [™]
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FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
Response to British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Council of Senior Citizens' Organizations of BC, Active Support Against Poverty, Disability Alliance BC, and the Tenant Resource and Advisory Centre <i>et al.</i> (BCOAPO) Information Request (IR) No. 1	Page 22

11.5.1 As part of the response, please indicate whether the kWh reported include all kWh usage at the site (i.e., usage for purposes other than only actual charging events).

5 **Response:**

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13

Table 1: 2019 Data

Station	In-service Date	# of days in service (i)	kW rating (i)				
Salmo	January 12, 2018	365	50 kW				
Christina Lake	January 12, 2018	365	50 kW				
Creston	January 12, 2018	365	50 kW				
Castlegar	January 12, 2018	365	50 kW				
Greenwood	January 12, 2018	365	50 kW				
Kelowna (Museum) 1	November 8, 2019	54	50 kW				
Kelowna (Centennial Park) 1	November 8, 2019	54	50 kW				
Kelowna (Airport) 1	May 24, 2019	222	50 kW				
Kelowna (Airport) 2	May 24, 2019	222	50 kW				
Beaverdell 1	November 8, 2019	54	50 kW				
Osoyoos 1	December 10, 2019	22	50 kW				
Oliver 1	December 10, 2019	22	50 kW				
Total	-	2,475	-				

14

15 The kWh values reported above include only the energy delivered to vehicles during charging

16 events, not the entire energy usage at site (refer to the response to BCOAPO IR1 11.2). The

17 average maximum monthly demand is based on the overall site demand as recorded through

18 the utility meter for the site.



FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
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1 2			
3 4 5 6	11.6	Please service now ava	provide a schedule that, for each of the sites with charging stations in- for part/all of 2020, sets out for those months of the year where data is ailable:
7 8 9		i.	the number of days the stations were in-service (Note: If there was more than one station and the days differ for each station, please report each separately),
10		ii.	the number of charging events,
11		iii.	the number of charging minutes,
12		iv.	the average number of charging minutes per event,
13		V.	the total kWh used,
14		vi.	the average maximum monthly demand,
15		vii.	the average kWh per charging event (based on (ii) and (iii)) for the site,
16		viii.	the overall (based on all sites) average kWh per event,
17		ix.	the number of charging events per day at the site, and
18 19		Х.	the overall (based on all sites) average number of charging events per day.
20 21 22 23		11.6.1	As part of the response, please indicate whether the kWh reported include all kWh usage at the site (i.e., usage for purposes other than actual charging events).
24	Response:		

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of BC, Active Support Against Poverty, Disability Alliance BC, and the Tenant Resource and Advisory Centre et al. (BCOAPO) Information Request (IR) No. 1 Page 24

Table 1: 2020 (January 1 – October 31) Data

		# of days in service	kW rating	#			
Station	In-service Date	(i)	(i)				
Salmo	January 12, 2018	305	50 kW				
Christina Lake	January 12, 2018	305	50 kW				
Creston	January 12, 2018	305	50 kW				
Castlegar	January 12, 2018	305	50 kW				
Greenwood	January 12, 2018	305	50 kW				
Kelowna (Museum) 1	November 8, 2019	305	50 kW				
Kelowna (Museum) 2	May 21, 2020	164	50 kW				
Kelowna (Centennial Park) 1	November 8, 2019	305	50 kW				
Kelowna (Centennial Park) 2	May 25, 2020	160	50 kW				
Kelowna (Airport) 1	May 24, 2019	305	50 kW				
Kelowna (Airport) 2	May 24, 2019	305	50 kW				
Beaverdell 1	November 8, 2019	305	50 kW				
Beaverdell 2	May 28, 2020	157	50 kW				
Rossland 1	January 13, 2020	293	50 kW				
Rossland 2	May 6, 2020	179	50 kW				
Nelson 1	January 8, 2020	298	50 kW				
Nelson 2	May 8, 2020	177	50 kW				
Osoyoos	December 10, 2019	305	50 kW				
Oliver 1	December 10, 2019	305	50 kW				
Oliver 2	May 15, 2020	170	50 kW				
Kaslo	January 31, 2020	275	50 kW				
New Denver	January 31, 2020	275	50 kW				
Nakusp	January 31, 2020	275	50 kW				
Penticton	October 1, 2020	31	50 kW				
Total	-	6,114	-				

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3 The kWh values reported above include only the energy delivered to vehicles during charging

4 events, not the entire energy usage at site (refer to the response to BCOAPO IR1 11.2). The



FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020	
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- 1 average maximum monthly demand is based on the overall site demand as recorded through
- 2 the utility meter for the site.



FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
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1 12.0 Reference: Exhibit B-5, page 13 and Appendix E, Schedule 2

- 2 Preamble: The Application states (page 13): "The usage at FBC's EV stations are 3 the minutes per year that EV customers will use the stations to charge 4 their vehicles. As described below, FBC modeled EV charging usage by 5 establishing a baseline using historical data and then applying growth 6 rates based on third party analysis. To understand current use, FBC 7 reviewed historical usage (in minutes) at existing FBC-owned DCFC 8 stations across FBC's service territory. Average usage was approximately 9 0.3 sessions (9 minutes) per station per day in 2018, and 0.7 sessions 10 (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. 11 12 fewer customers driving resulting in lower-than-anticipated DCFC usage compared to historical trends)." 13
- 14The Application further states (page 13): "To estimate future usage of15DCFC stations, FBC reviewed year-over-year projected growth rates of16EV registrations in FBC's service territory based on EV sales targets from17the Province's Zero Emissions Vehicles (ZEV) Act. FBC has assumed18that the growth rate in EV registrations will be reflected in the growth rate19of DCFC usage, which aligns with observations from 2018 and 201920data."
- 12.1 What year was used as the baseline and what was the average usage attributed
 to a 50 kW station in that year (i.e., minutes per station per day)?

24 **Response:**

- This information was based on station usage data from 2018 and 2019, the details of which are provided as part of the Confidential Responses to BCOAPO IR 11.4 and 11.5.
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 30 12.2 Given all of the existing stations are 50 kW, please indicate what baseline year
 31 and value was used for the 100 kW stations and how the baseline usage value
 32 was established.
- 33

34 Response:

- 35 Please refer to the responses to BCUC IR1 8.1, 8.1.1 and 8.3.1.
- 36
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1 2 3 4 5 6 7	12.3 <u>Response:</u>	Please provide the EV sales targets from the Province's ZEV Act and explain how the targets were translated into year over year growth rates in DCFC usage (i.e., charging minutes per station) for the period 2019-2030 and provide the supporting calculations.									
8	Please refer t	o the resp	ponses to BCUC IR1 8.4 and 8.4.1.								
9 10											
11 12 13	12.4	Please (will grow	confirm that FBC is assuming that EV registration in its service territory vat the same rate as overall provincial registrations.								
14		12.4.1	If confirmed, what is the basis for this assumption?								
15 16 17 18 19	<u>Response:</u>	12.4.2	If not confirmed, what is the basis for assuming that the growth in provincial EV registrations will be reflected in the growth in DCFC usage in its service territory?								
20	Please refer t	o the resp	ponse to BCUC IR1 8.4.								
21 22											
23 24	12.5	Please p	provide schedules that set out the calculation of:								
25 26 27		i.	The number of charging minutes in each year from 2020 to 2030 for 50 kW stations (per Appendix E, Schedule 2, line 11) based on the number of stations and the assumed number of charging minutes per station.								
28 29 30 31 32 33	Resnonse	ii.	The number of charging minutes in each year from 2020 to 2030 for 100 kW stations (per Appendix E, Schedule 2, line 11) based on the number of stations and the assumed number of charging minutes per station.								
55	response:										

Please refer to the tables below for the yearly minutes per station. The Total Charging Minutes
 per Year are as shown on line 11 of Schedule 2 in the financial schedules (Appendix E).



FortisBC Inc. (FBC or the Company) Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application)	Submission Date: November 19, 2020
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1 i. <u>50 kW Station</u>

Line	_	Reference	2020	<u>2021</u>	2022	2023	2024	2025	2026	2027	2028	2029	<u>2030</u>
1	Charge Events Per Station Per Day		1.56	2.04	2.72	3.66	4.69	5.81	7.41	9.49	11.30	11.90	12.00
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
3	Charging Minutes per Station per year	Line 1 x Line 2 x 365.25 days	17,125	22,421	29,927	40,223	51,543	63,911	81,478	104,385	124,310	130,911	132,011
4	Stations		23	34	34	34	34	34	34	34	34	34	34
5	Total Charge Minutes per Year	Line 3 x Line 4	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

3 ii. <u>100 kW Station</u>

Line		<u>Reference</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
1	Charge Events Per Station Per Day		1.88	2.72	3.66	4.69	5.81	7.41	9.49	12.07	14.80	15.80
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	Charging Minutes per Station per year	Line 1 x Line 2 x 365.25 days	11,992	17,399	23,384	29,965	37,156	47,369	60,686	77,184	94,654	101,049
4	Stations		6	6	6	6	6	6	6	6	6	6
5	Total Charge Minutes per Year	Line 3 x Line 4	71,953	104,393	140,305	179,793	222,934	284,211	364,113	463,103	567,923	606,296

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- 9 12.6 For purposes of the cost of service analysis (Appendix E), in forecasting the 10 number of charging minutes for 2020 – 2022 was any allowance made for 11 continuing impacts of COVID-19 on charging patterns?
- 11 12

12.6.1 If yes, what was the allowance incorporated for each year?

13 12.6.2 If not, why not?

14

15 **Response:**

FBC did not make any allowances for continuing impacts of COVID-19 on charging patterns as the duration and severity of any impacts are impossible to predict. FBC notes that charging usage patterns appear to be trending back to anticipated levels, as observed by FBC in Q3 2020, which coincides with the easing of restrictions in Phase 3 of the BC Restart Plan on June 24, 2020.



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1 13.0 Reference: Exhibit B-5, page 13, lines 22-28

13.1 Please explain why FBC considers inflation of 2%/annum to be a reasonable
assumption regarding the escalation for RS 21 and O&M in the years after 2024
and 2021 respectively.

5

6 Response:

FBC considers the 2 percent inflation assumption to be reasonable for use in rate setting. The provincial government has forecast inflation to be 1.8 percent in 2021⁴, and previously, in 2019 stated an expectation for an average 2.0 per cent annually from 2020 to 2023 and noting that the national inflation rate is forecast to average 2.0 per cent (the Bank of Canada's inflation target) over the medium-term.⁵ While FBC believes that the 2 percent escalation is reasonable, as described in the responses to BCUC IR1 6.7 and 6.8, RS 96 will be subject to a periodic cost

13 of service analysis that will serve to confirm that the assumptions have been reasonable.

⁴ <u>https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/government-finances/guarterly-reports/2020-21-q1-report.pdf</u>, page 59.

⁵ https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/governmentfinances/quarterly-reports/2019-20-q1-report.pdf.



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tonne, FBC would receive \$268,400 per year on average over ten years".

114.0Reference:Exhibit B-5, pages 14, 17 and Appendix E, Schedule 1, lines 7 & 122-221253Preamble:The Application states (page 14): "Assuming the price for carbon credits
matches the penalty for failing compliance with RLCFRR of \$200 per

- 6 14.1 Appendix E indicates that in both 2018 and 2019 the price FBC received for 7 carbon credits was \$200/tonne. Please confirm that all available carbon credits 8 were actually sold in each year and that this was the price received in each year.
- 914.1.1If not confirmed, please explain what transactions took place in each10year and the average price received.
 - 14.1.2 If not confirmed, please explain the basis for assuming all carbon credits will be sold at a price equal to the \$200 per tonne penalty?
- 13

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14 **Response:**

15 Not confirmed. The 2018 and 2019 credits have not been sold. FBC expects to sell the carbon

16 credits by the end of 2020 or in 2021. The credits that have been generated since the inception

17 of the EV DCFC stations under the RLCFRR are provided in the response to BCUC IR1 9.1. As

18 explained in the response to BCUC IR1 9.4.1, the \$200 per credit represents a conservative

19 approach given that the market has indicated that the average negotiated price to sell the

20 credits will likely exceed the \$200/credit penalty.



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1 15.0 Reference: Exhibit B-5, pages 8, 15, 16 and Appendix E, Schedule 1

(lines 22-27) & Schedule 2 (lines 15-17)

- 3 Preamble: The Application states:
 - "FEI will contract FLO Services Inc. (FLO) to provide maintenance services and network management services. FLO will provide customer support services for EV drivers using the station, and will also be responsible for providing technical support for diagnosing and remedying any breakdowns or malfunctions of the DCFC stations." (page 8)
- 9 "A transaction fee of 15 percent for global management services is 10 charged by FLO and is added to the calculated EV rate before the 11 transaction fee. This fee covers the network management services 12 provided by FLO (station status monitoring, remote diagnostics/upgrades, 13 etc.), 24/7 telephone support for customers using the DCFC stations, as 14 well as payment collection and processing". (page 15)
- 15"FBC estimates that the operating and maintenance cost is \$5,19316annually per station for both 50 kW and 100 kW stations. This includes17maintenance, travel, repairs outside of warranty, and FBC network18management expenses including half of a full-time equivalent (FTE)19employee. The operating and maintenance cost drops to \$4,900 in year202026 as FBC expects to reduce costs related to managing network21administration of FBC stations". (page 16)
- 2215.1Are all of the charges from FLO included in the 15% transaction fee or does the23OM&A forecast (per Appendix E, Schedule 1, lines 22-27) also include charges24from FLO?

26 **Response:**

TLine 24 also includes an annual \$750 charge per station from FLO related to the cellularmodem rental and telecommunication back-haul services for the DCFC stations.

29

- 30
- 313215.1.13315.1.134what services these charges cover, ii) how the charges are determined34annually and iii) for each of the 50 kW and 100 kW station analyses in35Appendix E what the charges for each year and where they are36captured in Schedule 1.



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2 Response:

Please refer to the response to BCOAPO IR1 15.1 and BCUC IR1 10.1. The annual network
fees are the same for both 50 kW and 100 kW stations.

- 5 6 7 8 Please explain why the OM&A costs are expected to fall as of 2026 when 15.2 9 according to the Application (pages 8 & 15) FLO provides the network 10 management services and compensation for these services is provided through 11 the transaction fee. 12 13 Response: 14 FBC expects reduced expenditures related to management of third-party station location 15 services (e.g., PlugShare), which FBC is responsible for as opposed to FLO, from 2026 onward. 16 FBC expects that there will be a decreased need to monitor and manage third party location 17 services, as the location and capabilities of FBC's DCFC sites will be well-established, requiring 18 fewer interactions. 19 20 21 22 What are the activities carried out by the 1/2 FTE and is the associated cost 15.3 23 captured in Appendix E, Schedule 1, line 23 for both the 50 kW and 100 kW 24 stations? 25 26 **Response:** 27 Please refer to the response to BCUC IR1 10.1 for a description of activities carried out by the 28 0.5 FTE. The labour costs associated with the 0.5 FTE are captured in Appendix E, Schedule 1, 29 line 23 for both the 50 kW and 100 kW stations. 30 31 32
 - 33 15.4 What is included in the Non-Labour costs (per Appendix E, Schedule 1, line 24
 34 for the 50 kW and 100 kW stations)?
 - 35



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1 Response:

- 2 The non-labour O&M for the 50 kW and 100 kW station consists of network management 3 expenses as described in response to BCUC IR1 10.1 (excluding labour), repairs outside of
- 4 warranty, travel and maintenance costs. Please see the below tables for the yearly breakdown
- 5 the non-labour O&M for 100 kW and 50 kW stations.

	50 kW O&M Costs		2018	2019	2020	2021	2022	2023	2024	2025	2026	<u>2027</u>	2028	2029	2030
	Maintenance Travel				3,170 507	18,488 2,958	22,497 3,600	22,947 3,672	23,406 3,745	23,874 3,820	24,352 3,896	24,839 3,974	25,335 4,054	25,842 4,135	26,359 4,217
6	Repairs (outside of warranty FBC Network Management E	xpenses	450 450	1,750 1,750	8,877 13,784 26,339	27,880 101,093	62,992 33,926 123,014	64,252 34,604 125,475	65,537 35,296 127,984	66,848 36,002 130,544	68,185 25,326 121,758	69,548 25,832 124,193	70,939 26,349 126,677	72,358 26,876 129,211	73,805 27,413 131,795
	100 kW O&M Costs			<u>2021</u>	2022	<u>202</u>	<u>23 2</u>	024	2025	2026	<u>2027</u>	<u>20</u>	<u>28</u>	2029	<u>2030</u>
	Maintenance Travel Repairs (outside of war	ranty)	-	1,946 311 5,449	3,97 63 11,11	0 4,0 5 (6 11,3	049 548 339 1	4,130 661 1,565	4,213 674 11,797	4,297 688 12,033	4,38 70 12,27	33 4, 01 73 12,	471 715 519	4,560 730 12,769	4,652 744 13,024
7	FBC Network Managern	ent Expense	s –	10,641	21,70	8 22,1	143 2	2,585	23,037	21,487	21,91	16 22,	.355	22,802	23,258
8 9															
10 11 12	15.5 [a	Does the and Ger	e ON ieral	1&A in (A&G)	clude cost	any s?	allowa	ance 1	for the	e recov	very c	of FBC	C's A	dminis	trative
13 14	ŕ	15.5.1	lf y dete	es, wl ermine	here d?	are t	hey ii	nclude	ed in	Арреі	ndix E	E and	d hov	v were	e they
15	1	15.5.2	lf no	ot, why	/ not?										
16															

17 **Response:**

18 FBC did not include an additional allocation for administrative and general costs in O&M in 19 Appendix E because these expenses are already included elsewhere in other cost line items, 20 including the costs related to the 0.5 FTE which will directly supporting the FBC charging 21 program. FBC allocates administrative and general costs when it determines the electricity rates 22 for RS 21, which is reflected in the proposed EV rates through the cost of electricity. The 23 increase in power purchases from the EV stations is sufficient to cover the portion of 24 administrative and general costs related to the EV network management services being 25 provided by FBC. Please see BCUC IR1 10.1 for further discussion of the network management 26 services being provided by FBC. As stated in the Revised Application, FLO covers the network 27 management services (station status monitoring, remote diagnostics/upgrades, etc.), 24/7 28 telephone support for customers using the DCFC stations, as well as payment collection and



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1 processing. A large portion of the applicable administrative and general costs would be directly 2 related to the management services provided by FLO. All of the overhead and administrative 3 fees from FLO are already incorporated into the 15 percent transaction fee. 4 5 6 15.5.3 If not, please provide FBC's most recent COSA study and, based on its 7 results, indicate the percentage A&G costs represent of total O&M costs 8 excluding A&G and Power Purchased costs. 9 10 Response: 11 FBC's most recent COSA can be found at the following link to the BCUC website. 12 https://www.bcuc.com/Documents/Proceedings/2018/DOC 50985 B-2 FBC-COSA-and-RDA COSA-Model.pdf 13 14 Per Schedule 3.1 of the COSA model, and using the categories as presented in the question, 15 allocated A&G costs (\$12,999,425) represent 25.4 percent when compared to the Total O&M 16 costs excluding A&G and Power Purchased costs (\$51,173,575). FBC notes that A&G costs 17 would need to be included in the divisor if the A&G cost is to be referred to as a percent of the 18 total. 19 20 21 Will the ownership and operation of the DCFC charging stations impact the 22 15.6 allocation of FI's or FHI's corporate services costs to FBC? 23 24 If yes, what is the estimated impact for each year from 2018-2030? 15.6.1 25 15.6.2 If yes, has this impact been included in the cost of service analysis set 26 out in Appendix E and, if so, where?

- 27
- 28 **Response:**

The ownership and operation of the DCFC charging stations would have an immaterial impact on the allocation of corporate service costs to FBC.

The FI and FHI corporate service costs are allocated to FEI, FBC and ACGS based on the Massachusetts formula, a BCUC approved allocation methodology. The Massachusetts formula method is a widely used and accepted financial composite cost allocator in the utility industry in North America as a method of allocating costs. It is composed of the arithmetical



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average of operating revenues, payroll, and the average net book value of capital assets plus
 inventories.

- 3 Using FBC's numbers for the Massachusetts Formula Allocation calculation as set out in Table
- 4 6-5 of the MRP application, and incorporating the changes due to the DCFC charging stations,

5 FBC's share of the Massachusetts Formula Allocation percentage would increase by 0.04

- 6 percent or about \$6 thousand per year.
- 7 Changes to the capital assets of FEI, FBC (excluding DCFC Charging Stations) and ACGS, and
- 8 changes to the other components of the Massachusetts cost allocation formula including
- 9 Revenues and Payroll for FEI, FBC and ACGS, have a much more material impact than the
- 10 DCFC charging stations on the FHI corporate services costs allocation to FBC.
- 11 As such, FBC has not included in the cost of service analysis any incremental allocation of

12 corporate service costs to FBC. This is consistent with FBC's cost of service analysis for other

- 13 projects.
- 14



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1 16.0 Reference: Exhibit B-5, page 17, lines 1-4

16.1 Who is the land leased from?

34 <u>Response:</u>

2

5 FBC has partnered with municipalities, the Osoyoos Indian Band, and one private site host 6 (Beaverdell) who have provided land at no-cost for the FBC DCFC sites.

7 8	
9 10 11 12	16.1.1 If any of land is leased from an affiliate of FBC, please indicate the basis for the lease payments?<u>Response:</u>
13	None of FBC's DCFC sites are leased from an affiliate of FBC.
14 15	
16 17 18 19	16.2 Where are the annual lease payments captured in Appendix E and how much are they annually?
20	Response:
21 22	All of FBC's DCFC sites are secured by no-cost Licenses of Occupation and as a result no annual lease payments are included.



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Exhibit B-5, page 17, lines 20-27 1 17.0 **Reference:**

2 17.1 Please confirm that when FBC states that it "has used the 2020 and 2021 capital 3 structures, as applied for, from FBC's Annual Review for 2020 and 2021 Rates" it 4 is referring to the LT and ST debt rates and mix of LT vs. ST debt.

5

6 Response:

- 7 Confirmed. Please refer to response to BCUC IR1 13.1.
- 8
- 9

- 10

11

12 13 17.2 Given the impact that the COVID-19 pandemic has had on recent forecasts for both ST and LT debt rates, why is it appropriate to use the 2021 rates from the Annual Review to determine the WACC for the balance of the period?

14 15 Response:

16 The most recent forecast 2021 interest rates for both long-term and short-term debt as filed in

- 17 FBC's Annual Review are the most relevant for the forward-looking 10-year time frame used for
- 18 setting RS 96. These interest rates are subject to review in the Annual Review proceeding.

19 Since the vast majority of FBC's debt rates are already fixed, only a very small component of 20 debt is subject to any interest rate forecasting risk. This is because long-term debt makes-up 21 about 95 percent of FBC's debt and 96 percent of that debt has already been issued. FBC 22 typically issues LT debt with 30 year terms with fixed interest rates over the entire term.

23 For the small amount of remaining debt where the interest rates have been forecast, although 24 there will inevitably be variations in financing rates over the next ten years, FBC's recent interest 25 rate forecasts represent the best available information. To incorporate a shorter-term and speculative pandemic-related change in interest rates to FBC's EV Charging ten year rate-26 27 setting term would introduce greater variations.



1 18.0 **Reference:** Exhibit B-5, pages 15-16 and Appendix E, Schedule 1 lines 35-54

- 2 Preamble: The Application states: "FBC's estimates that its gross capital 3 expenditures for the forty EV charging stations (existing and planned) 4 across 23 sites will be \$5.17 million. To date FBC has spent \$3.48 million 5 on EV charging stations, and plans to spend an additional \$1.69 million in 6 2021. These expenditures cover EV station kiosks, charger connectors, 7 poles, towers, conductors, line transformers, civil work, installation and 8 commissioning".
- 9 18.1 Please reconcile the \$5.17 M with the total project spending for 50 kW and 100 10 kW stations as set out in Appendix E. Note: The sum of rows 36 for 50 kW and 11 100 kW stations exceeds the \$5.17 M.
- 12

13 Response:

14 The \$5.17 million is the sum of the initial capital outlay for the EV stations for years 2018 through 2021 (highlighted in yellow). Please see the table below for a summary of the total 15 16 project spending over the analysis period. Please refer to the response to CEC IR1 17.1 for a

17 further discussion of the nature of the 2025-2030 capital amounts.

27 \$27	\$28	
	Ψ20	\$4,603
		\$ 725
27 \$27	\$28	\$5,328
	27 \$27	27 \$27 \$28

- 23
- sites (i.e., equipment that would typically be owned and maintained by the RS 21 customer if the site was owned and operated by a third party)?
- 24

25 **Response:**

26 Confirmed, all of the capital expenditures are typical of those that would be incurred by an exempt utility providing DCFC charging services under RS 21. The expenditures are related to 27 28 facilities and equipment serving the charging site.

- 29
- 30 31
- If yes, assuming the sites were owned and operated by a third-party RS 18.2.1 21 customer, would FBC's provision of service to any of the

BC [™]
30

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1	existing/planned locations have required the customer to make a capital
2	contribution to FBC? If any such contributions would have been
3	required: i) why were they not included in the Appendix E capital
4	expenditures, ii) what would the annual requirements have been for the
5	50 kW and 100 kW stations and iii) what would the revised Schedules 1
6	and 2 be in each case?
7	

8 Response:

9 Yes, the provision of service to these sites would have required a third party to make a capital contribution to FBC for the system extension required to provide service. In the instance of FBC 10 11 requesting a new metered service for its DCFC sites, a capital contribution is determined in 12 accordance with Section 16 of the FBC Tariff which governs cases where a system extension is 13 required to provide service. This capital contribution is charged to FBC's DCFC project, 14 resulting in the same overall capital project spend as would have been incurred by a third-party 15 requesting the same new service from FBC (as the utility). These costs are included in Project 16 Capital Spending line 36, Schedule 1 for both the 50 kW and 100 kW rates, with the rates in 17 Schedule 2 reflecting these costs. As such, Schedules 1 and 2 do not need to be revised.

- 18
- 19

20 21

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- 18.2.2 If no, does the capital spending include amounts comparable to what a third-party RS 21 customer would have paid to FBC in contributions for providing service to the sites? If not comparable why and what is the annual dollar difference in spending for 50 kW and 100 kW stations?
- 24 25
- 26 Response:
- 27 Please refer to the response to BCOAPO IR1 18.2.
- 28



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1 19.0 Reference: Exhibit B-5, pages 8, 16 and Appendix E, Schedule 2, line 4

- 2Preamble:The Application states (page 16): "FBC has modelled the cost of power3based on the DCFC stations taking metered electric service at FBC's4existing rates for commercial service under RS 21. The model assumes a5typical half hour charge session will deliver 20 kWh of energy, with thirty-6four individual 50 kW stations contributing 54 kW of demand and six 1007kW station contributing 108 kW of demand to each individually metered8DCFC site".
- 9 The Application indicates (page 8) that, overall, FBC plans to have 40 10 stations at 23 sites.
- 1119.1Please confirm that, for purposes of determining the cost of electricity to CDFC12stations, FBC is assuming that when all stations are in-service the total monthly13billing demand across the 23 sites will be 2,484 kW (i.e., 34x54 kW plus 6x10814kW).
 - 19.1.1 If not confirmed please indicate what the aggregate monthly billing demand will be and how it is derived.

18 **Response:**

19 Billed demand has been calculated on a per-site basis as each site is Not confirmed. 20 individually metered at the commercial utility rate. As per RS 21, the first 40 kW of demand (or 21 45 kVA) are not billed, which is reflected in the calculation of demand for the sites, and allocated on an equal basis between the 50 kW and 100 kW models (given those stations are served 22 23 through the same utility meter). In general, aggregate billing demand was based on maximum 24 demand depending on site capacity (i.e. 54/108/162 kW corresponding to a single 50 kW 25 station/site, dual 50 kW stations/site, or a 50 kW and one 100 kW station/site). Maximum site 26 demand based on coincident station demand is forecast to begin occurring in 2021 for the 2x50 27 kW station sites, and in 2024 for the 50/100 kW station sites.

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19.2 Please provide a schedule that sets out the derivation of the annual values in Schedule 2, line 4 for the 50 kW stations.

3334 <u>Response:</u>

Please see the below schedule for the derivation of the annual values in Schedule 2, line 4 forthe 50 kW stations.

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	Electricity Cost															
Line	Year	Reference	201	8 20	19	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Electricity Rates (GS21 Commercial Service)															
2	Demand Charge (per kVA > 45 kVA)		\$ 8.550	\$ 9.47	70 \$	9.470	\$ 10.980	\$ 11.364	11.762	12.174	12.417	12.666	\$ 12.919	\$ 13.177	\$ 13.441	\$ 13.710
3	Energy Charge (First 8,000 kW.h)		\$ 0.080	\$ 0.07	75 \$	0.075	\$ 0.074	\$ 0.077 \$	0.079 \$	0.082	0.084	0.085	\$ 0.087	\$ 0.089	\$ 0.091	\$ 0.093
4	Energy Charge (balance kW.h)		\$ 0.071	\$ 0.07	71 \$	0.071	\$ 0.074	\$ 0.077	0.079 \$	0.082	0.084	0.085	\$ 0.087	\$ 0.089	\$ 0.091	\$ 0.093
5																
6	Basic Charge (monthly)		\$ 28.990	\$ 41.92	20 \$	41.920	\$ 58.010	\$ 60.040 \$	62.142 \$	64.317	65,603	66.915	\$ 68.253	\$ 69.618	\$ 71.011	\$ 72.431
7																
8	Electricity Inflation Factor							3.50%	3.50%	3.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
9																
10	Single 50 kW Station															
11	Forecasted Maximum Demand for Single 50 kW Station in KVA		5	1	54	54	54	54	54	54	54	54	54	54	54	54
12	Less: 45 kVA		4	5	45	45	45	45	45	45	45	45	45	44	45	45
13	Dilling Domand > #E INA par Station				0			45			45					
13	Billing Demand >45 KVA per station			,	3	3	9	9	3	9	9	3	9	3	3	9
14	Deuble to but the line															
15	Double 50 KW Station			4	oc	00	100	100	100	100	100	100	100	100	100	100
10	Forecasted maximum bemand for bouble so kwy station in kwy			8	45	85	108	108	108	100	108	108	105	100	108	105
10	Dilling Demand > 45 bits and Station			-	40	43	40	40	43	40	40	43	40	45	40	40
18	Billing Demand >45 KVA per Station			1	+0	40	03	05	03	03	03	03	03	03	03	03
15	Collit Stations 100 MM Station/CO MM Station															
20	Split stations 100 kw station/ 50 kw station			8	6.4	5.4	54	64	5.4	54	64	5.4	54		54	54
22	Lorer (45 kVA /1) for Solit Stations with 100 kW and 50 kW Ch	valoa		3	34	24	22	34	12	22	34	24	22	22.6	27 5	22.5
22	Billion Domand > 45 /2 kVA par Station	aging	-				23	23	23	23	23	23	23	22.5	22.3	22.3
23	Billing Demand >45/2 kVA per Station						32	32	32	32	32	32	32	32	32	32
24	Desig Marshlu Charge Associal			11	NE.											
25	Basic Monthly charge Accruai			33	55											
20	Cinale CO MU Station															
27	Single 30 KW Station		13		13	12	12	12	12	12	12	12	12	12	12	12
20	Months Filiable for 15% Reduction in Domand Charge		12	1		14	12	12	12	12	12	12	12	14	12	12
20	Billing Demand Reduction at 25% (1, 25)		750	75	544	75%	75%	75%	75%	759/	75%	75%	759/	754	75%	75%
21	bining bemand Reduction at 25% (1-25)		131	• /-	210	1376	13/6	13/6	1376	13/8	1210	1376	13/6	131	1376	13/9
32	Double 50 kW Stations															
32	Months Hitting Maximum Demand				1	1	12	12	12	12	12	12	12	12	12	12
3.4	Months Flightle for 25% Reduction in Demand Charge		0		6	11										
35	Billing Demand Reduction at 25% (1, 25)		759	. 75	5%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
36	35 primite memory memory of the (1-1-2)					10.0	1010		1010			10.10	1210			
37	Solit Stations 100 kW Station/50 KW															
38	Months Hitting Maximum Demand						1	12	12	12	12	12	12	12	12	12
39	Months Eligible for 25% Reduction in Demand Charge						11									
40	Billing Demand Reduction at 25% (125)						75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
41																
42	Number of Charging Events		508	3.13	34	13.078	25,311	33,784	45,406	58,185	72.147	91,978	117,836	140.329	147,780	149.022
43	Energy Consumption for all Stations (kWh)		40,831	131,17	14	373,997	723,951	893,418	1,125,860	1,381,446	1,660,676	2,057,292	2,574,458	2,650,391	2,779,558	2,801,086
44	First Tier kWh (First 8,000 kWh per station)		40,000	48,00	00 1	128,000	136.000	136,000	136,000	136.000	136,000	136.000	136,000	40,000	40,000	40,000
45	Second Tier kWh		831	83,17	14	245,997	587,951	757,418	989,860	1,245,446	1,524,676	1,921,292	2,438,458	2,610,391	2,739,558	2,761,086
46	Number of Single Stations 50 kW		5		5	9	5	5	5	5	5	5	5	5	5	5
47	Number of Double 50 kW Stations				1	7	12	12	12	12	12	12	12	12	12	12
48	Number of Double Stations -split (100 kW)/(50 kW)						5	5	5	5	5	5	5	5	5	5
49	Annual for all Stations															
50	Demand Charge (\$) Split Stations - 100kW/50kW	(Line 2 x Line 23 x Line 38 x Line 48) + (Line 2 x Line 23 x Line 39 x Line 40 x Line 48)	-			-	15,996	21,479	22,230	23,008	23,469	23,938	24,417	24,905	25,403	25,911
51	Demand Charge (\$) Double 50 kW Stations	(Line 2 x Line 18 x Line 33 x Line 47) + (Line 2 x Line 18 x Line 34 x Line 35 x Line 47)		2,08	83	24,527	99,611	103,097	106,705	110,440	112,649	114,902	117,200	119,544	121,935	124,373
52	Demand Charge (\$) Single Stations 50 kW	(Line 2 x Line 13 x Line 28 x Line 46) + (Line 2 x Line 13 x Line 29 x Line 30 x Line 46)	4,617	5,11	14	9,205	5,929	6,137	6,352	6,574	6,705	6,839	6,976	7,116	7,258	7,403
53	Energy Charge (First 8,000 kW.h (\$)	Line 3 x Line 44	3,210	3,59	99	9,596	10,079	10,432	10,797	11,175	11,398	11,626	11,859	3,558	3,629	3,701
54	Energy Charge (balance kW.h)	Line 4 x Line 45	59	5,89	92	17,426	43,573	58,097	78,583	102,335	127,784	164,245	212,625	232,169	248,530	255,493
55	and a second statement of the second statement of the second second statement of the second se															
56	Basic Charge (Annual)	(Line 6 x 12) x (Line 46 + Line 47 + (Line 48/2)) + Line 25	1,739	3,35	54	8,049	13,574	14,049	14,541	15,050	15,351	15,658	15,971	16,291	16,617	16,949
57	Total Annual Electricity Cost (\$)	Sum of Line 50 to Line 56	9,626	20,04	11	68,803	188,763	213,290	239,209	268,582	297,356	337,208	389,047	403,582	423,371	433,831

Fortis BC



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- 1 2
- 19.3 Please provide a schedule that sets out the derivation of the annual values in Schedule 2, line 4 for the 100 kW stations.
- 3
- 4 <u>Response:</u>

5 Please see the below schedule for the derivation of the annual values in Schedule 2, line 4 for

6 the 100 kW stations.

	FORTIS BC [∞]
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Fortis BC

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	Electricity Cost											
Line	Year	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Electricity Rates (GS21 Commercial Service)											
2	Demand Charge (per kVA > 45 kVA)		\$10.9800	\$11.3643	\$11.7621	\$12.1737	\$12.4172	\$12.6655	\$12.9189	\$13.1772	\$13.4408	\$13.7096
3	Energy Charge (First 8,000 kW.h)		\$ 0.0741	\$ 0.0767	\$ 0.0794	\$ 0.0822	\$ 0.0838	\$ 0.0855	\$ 0.0872	\$ 0.0889	\$ 0.0907	\$ 0.0925
4	Energy Charge (balance kW.h)		\$ 0.0741	\$ 0.0767	\$ 0.0794	\$ 0.0822	\$ 0.0838	\$ 0.0855	\$ 0.0872	\$ 0.0889	\$ 0.0907	\$ 0.0925
5												
6	Basic Charge (monthly)		\$ 58.010	\$ 60.040	\$ 62.142	\$ 64.317	\$ 65.603	\$ 66.915	\$ 68.253	\$ 69.618	\$ 71.011	\$ 72.431
7												
8	Electricity Inflation Factor			3.50%	3.50%	3.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
9												
10	Single 100 kW Station							`				
11	Forecasted Maximum Demand for Single 100 kW Station in KVA		85	85	85	108	108	108	108	108	108	108
12	Less: 45 kVA		45	45	45	45	45	45	45	45	45	45
13	Billing Demand > 45 kVA per Station		40	40	40	63	63	63	63	63	63	63
14												
15	Split Stations 100 kW Station/50 kW											
16	Forecasted Maximum Demand for 100kW Side of Split		108	108	108	108	108	108	108	108	108	108
17	Less: (45 kVA/2) for Split Stations with 100 kW and 50 kW Charging		23	23	23	23	23	23	23	23	23	23
18	Billing Demand > 45/2 kVA per Station		86	86	86	86	86	86	86	86	86	86
19												
20	Single 100 kW Station											
21	Months Hitting Maximum Demand		12	12	12	12	12	12	12	12	12	12
22	Months Eligible for 25% Reduction in Demand Charge										-	
23	Billing Demand Reduction at 25% (125)		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
24												
25	Split Stations 100 kW Station/50 kW											
26	Months Hitting Maximum Demand		1	12	12	12	12	12	12	12	12	12
27	Months Eligible for 25% Reduction in Demand Charge		11	-				-		-	-	
28	Billing Demand Reduction at 25% (125)		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
29												
30	Number of Charging Events		4,109	5,962	8,013	10,268	12,732	16,231	20,795	26,448	32,434	34,626
31	Energy Consumption for all Stations (kWh)		120,610	157,662	198,681	243,785	293,060	363,052	454,316	567,383	687,108	730,938
32	First Tier kWh (First 8,000 kWh per station)		48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
33	Second Tier kWh		72,610	109,662	150,681	195,785	245,060	315,052	406,316	519,383	639,108	682,938
34												
35	Number of Single Stations (100 kW)		1	1	1	1	1	1	1	1	1	1
36	Number of Split Stations - (100 kW)/(50 kW)		5	5	5	5	5	5	5	5	5	5
37	Annual for all Stations											
38	Demand Charge (\$) Split Stations - 100kW/50kW	(Line 2 x Line 18 x Line 26 x Line 36) + (Line 2 x Line 18 x Line 27 x Line 28 x Line 36)	43,419	58,299	60,339	62,451	63,700	64,974	66,274	67,599	68,951	70,330
39	Demand Charge per (\$) Single Stations 100 kW	(Line 2 x Line 13 x Line 21 x Line 35) + (Line 2 x Line 13 x Line 22 x Line 23 x Line 35)	5,270	5,455	5,646	9,203	9,387	9,575	9,767	9,962	10,161	10,364
41	41 Energy Charge (First 8,000 kW.h (\$) Line 3 x Line 32				3,811	3,944	4,023	4,103	4,185	4,269	4,355	4,442
42	Energy Charge (balance kW.h)	Line 4 x Line 30	5,381	8,411	11,962	16,087	20,539	26,933	35,429	46,194	57,979	63,195
43												
44	Basic Charge (Annual)	Line 6 x 12 x (Line 35 + (Line 36/2))	2,436	2,522	2,610	2,701	2,755	2,810	2,867	2,924	2,982	3,042
45	Total Annual Electricity Cost (\$)	Sum of Line of 38 to Line 44	60,064	78,369	84,368	94,387	100,404	108,396	118,522	130,948	144,429	151,373



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1 20.0 Reference: Exhibit B-5, page 20 and Appendix E, Schedule 2, line 16

2 20.1 What would the levelized rates be for the 50 kW stations if EV usage was 10% or
3 25% lower than that embedded in the financial models?

5 **Response:**

4

Please refer to the response to BCUC IR1 8.6.
Please refer to the response to BCUC IR1 8.6.
20.2 What would the levelized rates be for the 100 kW stations if EV usage was 10% or 25% lower than that embedded in the financial models?
Response:
Please refer to the response to BCUC IR1 8.6.



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1	21.0	Refer	ence: I	Exhibit B-5, pages 12 and 20-21
2 3 4 5		21.1	Given th basis, v used for	nat there are approved meters for billing other FBC customers on a kWh why is there no Measurement Canada approved metering that can be charging stations?
6	Resp	onse:		
7	Please	e refer t	o the res	ponses to BCUC IR1 7.7 and 7.7.1.
8 9				
10 11 12		21.2	Are thei a per m	e approved meters that can be used to bill for charging station usage on inute/second basis?
13 14 15	Poop		21.2.1	If yes, are there multiple suppliers such that they can be obtained at a competitive price?
10	Resp	onse:		
17 18	Chron Meas	iometer ures R	s, that b e <i>gulation</i> ^e	ill on a per minute/second basis are exempt from the Weights and . Therefore, metering on this basis does not require approval from

Measures Regulation⁶. Therefore, metering on this basis does not require approval from
 Measurement Canada. For clarity, FBC's stations already include integrated chronometers,
 therefore, there is no need to identify additional or alternate suppliers.

⁶ <u>https://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1605/page-1.html.</u>



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Reference: 1 22.0 Exhibit B-5, pages 22-23 and Appendix E, Schedule 2

2 Preamble: The Application states: "As described above, over the term of the MRP, 3 FBC will forecast costs and revenues associated with EV charging in 4 each Annual Review. The costs and revenues associated with the 5 provision of EV charging will be afforded flow-through treatment. This 6 means that any variances between forecast and actual costs associated 7 with the EV charging service will be accounted for in FBC's existing Flow-8 through deferral account."

- 9 22.1 Will, as a part of each Annual Review, FBC be able to report the specific costs 10 incurred and revenue accrued to date and forecast for the coming test year for 11 DCFC charging stations?
- 12 22.1.1 If not, why not?
- 13 22.1.2 If yes, will FBC commit to doing so?
- 14
- 15 Response:
- Confirmed. 16
- 17
- 18

- 19

22

- 20 Please provide schedules for each of the 50 kW and 100 kW stations and for the 22.2 total of both, that set out for each year in the period 2018-2030: 21
 - i. The annual revenues expected at the interim/proposed RS 96 rates.
- 23 ii. The annual revenue requirement (per Schedule 2).
- 24 iii. The net difference between the annual expected revenues and the 25 annual forecasted revenue requirement.
- 26
- 27 Response:

28 FBC has provided three table below which have been summarized from the financial schedules 29 in Appendix E, the first shows the 50 kW stations at the proposed rate, the second the 50 kW 30 stations at the interim rate and the third the 100 kW stations at the proposed rate. Each table 31 includes the information requested based on each of the sub-questions. As can been seen in 32 Tables 1 and 3, the proposed rates collect the revenue requirement exactly whereas Table 2, 33 using the interim rate, shows an over recovery due to the interim rate being higher than the 34 proposed rate.

35 Note that all of the rates exclude the transaction fee (revenue) that will be retained by FLO.



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Table 1: 50 kW Stations at the Proposed Rate

(PV \$000s), unless otherwise stated 50 kW Proposed Rate

Line	Reference	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Charging Minutes per Year	Appendix E, Sch 2, Line 12	14,459	84,181	332,910	609,262	768,913	977,115	1,183,890	1,387,972	1,673,059	2,026,620	2,281,957	2,272,174	2,166,414
2 Levelized \$ per minute rate to recover Cost of Service	Appendix E, Sch 2, Line 15	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
3 Total Yearly Revenue (i)	(Line 1 x Line 2)/ 1,000	3	19	76	138	175	222	269	315	380	460	518	516	492
4 Revenue Requirement (ii)	Appendix E, Sch 2, Line 6	1	(251)	214	589	483	446	408	371	327	290	271	212	222
5 Difference in Revenue and Cost of Service (iii)	Line 3 - Line 4	2	270	(139)	(450)	(308)	(224)	(139)	(55)	53	171	247	304	270
6 (Under)/ Over Recovery	Sum of Line 5	0												

2 3

1

4

Table 2: 50 kW Stations at the Interim Rate

(PV \$000s), unless otherwise stated 50 kW Interim Rate

Line	Reference	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Charging Minutes per Year 50 kW	Appendix E, Sch 2, Line 12	14,459	84,181	332,910	609,262	768,913	977,115	1,183,890	1,387,972	1,673,059	2,026,620	2,281,957	2,272,174	2,166,414
2 50kW interim Rate		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 (i)	(Line 1 x Line 2)/ 1,000	4	21	85	155	196	249	302	354	427	517	582	579	552
4 Revenue Requirement (ii)	Appendix E, Sch 2, Line 6	1	(251)	214	589	483	446	408	371	327	290	271	212	222
5 Difference in Revenue and Cost of	Service (iii) Line 3 - Line 4	2	273	(130)	(433)	(287)	(197)	(106)	(17)	100	227	311	367	330
6 (Under)/ Over Recovery	Sum of Line 5	441												

5 6

7

Table 3: 100 kW Stations at the Proposed Rate

(PV \$000s), unless otherwise stated 100 kW Proposed Rate

	Line	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	1 Charging Minutes per Year	Appendix E.1, Sch 2, Line 11	68,032	93,326	118,596	143,693	168,463	203,065	245,978	295,803	342,989	346,211
	2 Levelized \$ per minute rate to recover Cost of Service	Appendix E.1, Sch 2, Line 14	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
	3 Total Yearly Revenue (i)	(Line 1 x Line 2)/ 1,000	32	44	56	68	79	95	116	139	161	163
	Kevenue Requirement (ii) Difference in Revenue and Cost of Service (iii)	Appendix E.1, Sch 2, Line 6	(18)	(118)	(65)	(50)	(29)	98	26	58	72	121
8	6 (Under)/ Over Recovery	Sum of Line 5	0	(110)	(05)	(50)	(25)	(3)	20	58	85	41
0												
0												
9												
10												
4.4												
11												
12												
10			a 4h a			tablia	h:			thread	a a l a fu	- 44 -
13		be amenable t	o the	BUU	lo es	labils	ning a	mate	enancy	threst		or the
14	overall diffe	rence betwee	en re	venu	ie ar	nd re	venue	rea	uireme	ent as	s cur	rentlv
							vonue	109				·······································
15	forecast vs.	that reported	as a	chiev	/ed/fo	recas	st in fu	uture	Annua	al Rev	iews,	such
16	that if the ma	atoriality throat	nold v	vae e	vcoo	dod a	, rovic	w 26	to the	annro	nriate	nace
10		atenanty thesi		vas e		ueu a		w as		appic	phate	11033
17	of the RS	96 rate woul	d be	trig	gered	d as	part	of th	e Anı	nual F	Reviev	v (or
10	constatu/2			•	•		•					•
10	separately)?											
4.0												
19	22.3.1 If n	ot, why not?										
20	22.3.2 If y	/es, what wo	ould l	FBC	con	sider	to be	e a I	reasoi	nable	mate	riality
04	۔ معطف	, abald0										,
21	Une	shoid?										
22												
	-											
23	<u>Response:</u>											

No. FBC does not believe that a specific materiality threshold is necessary or helpful as the context behind any variance needs to be understood and will already be subject to review each



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year. The Company has committed to an annual review of the DCFC Program as well as a
 periodic, or if required by the BCUC more frequent, examination in the context of a cost of

3 service analysis. The BCUC could direct FBC to provide additional information regarding RS 96

4 if the results of the annual review caused it concern. Please also refer to the response to BCUC

5 IR1 6.6 for further discussion on why the review of the program should be considered over the

6 10 year term rather than on a year by year basis.

Attachment 2.1a

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

Line	Particulars	Reference	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	2022	2023	2024	<u>2025</u>	<u>2026</u>	2027	2028	<u>2029</u>	2030
1	Cost of Service														
2	Power Purchase		2	7	19	38	46	60	76	94	120	154	164	177	183
3	Operation & Maintenance	Line 28	0	2	26	154	187	191	194	198	191	195	199	203	207
4	Property Taxes	Line 33	-	-	(0)	(3)	2	6	5	5	4	4	3	3	3
5	Depreciation Expense	Line 59	-	60	197	312	401	401	401	401	403	406	409	351	227
6	Amortization Expense on Deferred Charges	Line 107	-	-	-	11	11	11	11	11	11	11	11	11	11
7	Amortization Expense on CIAC	Line 72	-	(35)	(70)	(106)	(211)	(211)	(211)	(211)	(211)	(211)	(211)	(211)	(211)
8	Other Revenue - Carbon Credits	-Line 149	(6)	(20)	(57)	(110)	(135)	(171)	(209)	(252)	(312)	(390)	(402)	(421)	(425)
9	NRCan Repayment	Line 174	-	-	194	36	-	-	-	-	-	-	-	-	218
10	Income Taxes	Line 113	(9)	(361)	(219)	148	86	86	85	82	79	76	74	50	3
11	Earned Return	Line 96	6	53	118	129	107	94	81	69	57	46	34	23	19
12	Incremental Annual Revenue Requirement	Sum of Line 2 to Line 11	(6)	(295)	208	609	494	467	432	397	343	290	280	186	235
13	PV of Revenue Requirement (After-tax WACC of 5.87%)	Line 12 / (1 + Line 98)^Yr	(6)	(263)	176	487	374	334	292	253	207	166	151	95	113
14	Total PV of Annual Revenue Requirement	Sum of Line 13	2,379												
15															
16	2021 Approved Revenue Requirement (2021 Advanced N	Materials)	356.340	370.534	370.534	362.255	362,255	362,255	362.255	362,255	362.255	362,255	362,255	362.255	362,255
17	% Increase on 2021 Rate	Line 12 / Line 16	0.00%	-0.08%	0.06%	0 17%	0 14%	0.13%	0 12%	0 11%	0.09%	0.08%	0.08%	0.05%	0.06%
18			0.007/0	0.0070	0.0070	0.1770	0.2.00	0.1070	0.12/0	0.11/0	0.0570	0.0070	0.00/0	0.0570	0.0070
19	PV of Annual 2021 Approved Revenue Requirement	Line 16 / (1 + Line 98)^Yr	336.571	330.470	313,177	289.519	273,743	258.826	244,722	231.387	218,779	206.857	195,585	184.928	174.851
20	Total PV of 2021 Approved Revenue Requirement	Sum of Line 19	3.259.414	,			,		,		,				,
21	Levelized % Increase (13 vrs) on 2021 Rate	Line 14 / Line 20	0.07%												
22															
23	Operation & Maintenance														
24	Labour Costs		-		-	53	64	65	66	68	69	71	72	73	75
25	Non-Labour Costs		0	2	26	101	123	125	128	131	122	124	127	129	132
26	Total Gross O&M Expenses	Line 24 + Line 25	0	2	26	154	187	191	194	198	191	195	199	203	207
27	Less: Capitalized Overhead	Overhead Rate of 0%	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Net O&M Expenses	Line 26 + Line 27	0	2	26	154	187	191	194	198	191	195	199	203	207
29			Ũ	-	20	101	107	101		150		100	100	200	207
30	Property Taxes														
31	General School and Other		-		-	-	-	-	-	-	-	-	-	-	-
22	1% in Lieu of General Municipal Tax ¹	1% of Line 12		_	(0)	(2)	n	6	5	E	Л	л	2	2	2
22					(0)	(3)							<u> </u>	<u> </u>	<u> </u>
33	1. Coloritation in broad on the second encoding ways a 202		-	-	(0)	(3)	2	Ь	5	5	4	4	3	3	3
34	1 - Calculation is based on the second preceding year, e.g. 202	tu is based on 2018 revenue													

EV Charging Stations Review - 50 kW Stations

Schedule 1

September 2020 (\$000s), unless otherwise stated

5000s), uniess otnerwise statea

Line	Particulars	Reference	<u>2018</u>	2019	2020	<u>2021</u>	2022	2023	2024	2025	2026	2027	2028	2029	2030
36	Capital Spending														
37	Project Capital Spending ²		599	1.644	1.238	965	-	-	-	25	26	26	27	27	28
38	AFUDC		-	-	37	29	-	-	-	-	-	-	-	-	-
39	Total Annual Capital Spending & AFUDC	Sum of Line 37 to 40	599	1,644	1,274	994	-	-	-	25	26	26	27	27	28
40	Cost of Removal		-	·	· _	-		-	-			-	-	-	
41	Contributions in Aid of Construction (CIAC)		(423)	(415)	(434)	(1.251)	-	-	-	-	-	-	-	-	-
40	Total Annual Design Cost, Cost ital		130	1 220		(257)				25	20	20	27		20
42	Total Annual Project Cost - Capital	Line 39 + Line 40	176	1,229	840	(257)	-	-	-	25	26	20	27	27	28
45	Total Project Cost (incl. AEUDC)	Sum of Line 29	4 669												
44	Net Project Cost (incl. Removal and/or CIAC)	Sum of Line 42	4,009												
46	2 - Excluding capitalized overhead: First year of analysis in	cludes all prior year spending	2,140												
47															
48	Gross Plant in Service (GPIS)														
49	GPIS - Beginning ³	Preceding Year, Line 53	-	599	2.243	3.517	4.511	4.511	4.511	4.511	4.536	4.562	4.588	4.015	2,770
50	Additions to Plant ⁴		599	1 644	1 274	994	-	-	-	25	26	26	27	27	28
51	Retirements		-	-		-	-	-	-	-	-	-	(599)	(1.272)	(1.092)
52	Net Addition to Plant	Sum of Line 50 to 51	599	1.644	1.274	994				25	26	26	(572)	(1.245)	(1.065)
53	GPIS - Ending	Line 49 + Line 52	599	2.243	3.517	4.511	4.511	4.511	4.511	4.536	4.562	4.588	4.015	2.770	1.705
54	3 - Consistent with treatment of CPCN, additions (when we	ork complete and placed in-service) is shown in the opening balance	of plant on Jan 1	of following	vear)	,-	,-	/-	,-	,	,	,	,	, -	,
55	4 - Includes capitalized overhead	,	·	0											
56															
57	Accumulated Depreciation														
58	Accumulated Depreciation - Beginning	Preceding Year, Line 61	-	-	(60)	(257)	(569)	(970)	(1,371)	(1,772)	(2,173)	(2,577)	(2,983)	(2,792)	(1,872)
59	Depreciation Expense ⁵	Line 49 @ 8.37%	-	(60)	(197)	(312)	(401)	(401)	(401)	(401)	(403)	(406)	(409)	(351)	(227)
60	Retirements		-	-	-	-	-	-	-	-	-	-	599	1,272	1,092
61	Accumulated Depreciation - Ending	Sum of Line 58 to 60	-	(60)	(257)	(569)	(970)	(1,371)	(1,772)	(2,173)	(2,577)	(2,983)	(2,792)	(1,872)	(1,006)
62	5 - Depreciation & Amortization Expense calculation is bas	ed on opening balance x composite depreciation rate; The composit	te rate of all asset	s addition to	plant is 8.37%										
63															
64	Contributions in Aid of Construction (CIAC)														
65	CIAC - Beginning	Preceding Year, Line 68	-	(423)	(838)	(1,272)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)
66	Additions		(423)	(415)	(434)	(1,251)	-	-	-	-	-	-	-	-	-
67	Retirements	-			<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>				423
68	CIAC - Ending	Sum of Line 65 to 67	(423)	(838)	(1,272)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,100)
69															
70	Accumulated Amortization of Contributions in Aid o	of Construction (CIAC)									4 955				
/1	Accumulated Amortization of CIAC - Beginning	Preceding Year, Line /4	-	-	35	106	212	423	634	846	1,05/	1,268	1,479	1,690	1,902
/2 72	Amortization (over 11.95 yrs)	Line נס ש א.3/%	-	35	70	106	211	211	211	211	211	211	211	211	(422)
75	Accurate the structure of CIAC. Earlier														(423)
74	Accumulated Amortization of CIAC - Ending	Sum of Line /1 to /3	-	35	106	212	423	634	846	1,057	1,268	1,479	1,690	1,902	1,690

FortisBC Inc. EV Charging Stations Review - 50 kW Stations Schedule 1

(\$000s), unless otherwise stated

Line	Particulars	Reference	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	2023	<u>2024</u>	2025	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	<u>2030</u>
76	Rate Base and Earned Return		_												
77	Gross Plant in Service - Beginning	Line 49	-	599	2,243	3,517	4,511	4,511	4,511	4,511	4,536	4,562	4,588	4,015	2,770
78	Gross Plant in Service - Ending	Line 53	599	2,243	3,517	4,511	4,511	4,511	4,511	4,536	4,562	4,588	4,015	2,770	1,705
79															
80	Accumulated Depreciation - Beginning	Line 58	-	-	(60)	(257)	(569)	(970)	(1,371)	(1,772)	(2,173)	(2,577)	(2,983)	(2,792)	(1,872)
81	Accumulated Depreciation - Ending	Line 61	-	(60)	(257)	(569)	(970)	(1,371)	(1,772)	(2,173)	(2,577)	(2,983)	(2,792)	(1,872)	(1,006)
82															
83	CIAC - Beginning	Line 65	-	(423)	(838)	(1,272)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)
84	CIAC - Ending	Line 68	(423)	(838)	(1,272)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,523)	(2,100)
85															
86	Accumulated Amortization of CIAC - Beginning	Line 71	-	-	35	106	212	423	634	846	1,057	1,268	1,479	1,690	1,902
87	Accumulated Amortization of CIAC - Ending	Line 74	-	35	106	212	423	634	846	1,057	1,268	1,479	1,690	1,902	1,690
88															
89	Net Plant in Service, Mid-Year	(Sum of Lines 77 to Line 87) / 2	88	778	1,737	1,862	1,536	1,346	1,156	979	813	645	476	334	283
90	Adjustment to 13-month average	6	-	-	-	-	-	-	-	-	-		-	-	-
91	Cash Working Capital	Line 53 x FBC CWC/Closing GPIS %	2	7	10	13	13	13	13	13	13	13	12	8	5
92	Total Rate Base	Sum of Line 89 to 91	90	785	1,802	1,980	1,643	1,442	1,241	1,053	876	697	515	358	293
93															
94	Equity Return	Line 92 x ROE x Equity %	3	29	66	72	60	53	45	39	32	26	19	13	11
95	Debt Component	7	3	24	52	57	47	42	36	30	25	20	15	10	8
96	Total Earned Return	Line 94 + Line 95	6	53	118	129	107	94	81	69	57	46	34	23	19
97	Return on Rate Base %	Line 96 / Line 92	6.69%	6.71%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%
98	After- Tax Weighted Average Cost of Capital (WACC)	8	5.87%	5.89%	5.77%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%

99 6 - (Line 52 + Line 59 + Line 66) x [(Days In-service/365)-1/2]

100 7 - Line 92 x (LTD Rate x LTD% + STD Rate x STD %)

101 8 - ROE Rate x Equity Component + [(STD Rate x STD Portion) + (LTD Rate x LTD Portion)] x (1- Income Tax Rate)]

September 2020

EV Charging Stations Review - 50 kW Stations

Schedule 1

September 2020 (\$000s), unless otherwise stated

Line	Particulars	Reference	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	2023	<u>2024</u>	2025	<u>2026</u>	2027	2028	2029	<u>2030</u>
103	Income Tax Expense														
104	Earned Return	Line 96	6	53	118	129	107	94	81	69	57	46	34	23	19
105	Deduct: Interest on debt	Line 95	(3)	(24)	(52)	(57)	(47)	(42)	(36)	(30)	(25)	(20)	(15)	(10)	(8)
106	Add: Depreciation Expense	Line 59	-	60	197	312	401	401	401	401	403	406	409	351	227
107	Add: Amortization of Deferred Charges		-	-	-	11	11	11	11	11	11	11	11	11	11
108	Deduct: CIAC Amortization	Line 72	-	(35)	(70)	(106)	(211)	(211)	(211)	(211)	(211)	(211)	(211)	(211)	(211)
109	Deduct: Capital Cost Allowance	Line 121 (Include CCA from 2018)	(26)	(1,028)	(785)	112	(27)	(21)	(17)	(18)	(22)	(25)	(27)	(28)	(30)
110	Taxable Income After Tax	Sum of Line 104 to 109	(23)	(975)	(592)	401	234	232	229	221	213	206	200	136	8
111	Income Tax Rate		27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%
112															
113	Total Income Tax Expense	Line 110 / (1 - Line 111) x Line 111	(9)	(361)	(219)	148	86	86	85	82	79	76	74	50	3
114	·····	, (, (,,,,	(-7	(,	(/										-
115	Capital Cost Allowance														
116	Opening Balance	Proceeding Year Line 122	-	150	350	369	195	168	146	129	136	139	140	140	138
117	Additions to Plant	line 39	500	1 644	1 274	903	155	- 100	140	25	26	26	27	27	28
110		Line 39	555	1,044	(27)	(20)				25	20	20	27	27	20
110	Less: CIAC	Line 38	(422)	(415)	(37)	(1 251)	-	-	-	-	-	-	-	-	-
119	Less. CIAC		(423)	(413)	(434)	(1,231)	<u> </u>	<u> </u>	<u> </u>				-		-
120	Net Addition for CCA	Sum of Line 117 through 119	1/6	1,229	804	(286)	- (27)	-	-	25	26	26	(27)	27	28
121	CLA	[Line 116 + (Line 120/2)] X CCA Rate	(26)	(1,028)	(785)	112	(27)	(21)	(17)	(18)	(22)	(25)	(27)	(28)	(30)
122	Closing Balance	Line 116 + Line 120 + Line 121	150	350	369	195	168	146	129	136	139	140	140	138	136
123															
124															
125	Deferred Charge - Rate Base														
126	Opening Balance	Proceeding Year, Line 132	-	-	-	110	99	88	77	66	55	44	33	22	11
127	Gross Additions		-	-	151	-	-	-	-	-	-	-	-	-	-
128	Tax	-Line 127 x Line 111	-	-	(41)	-	-	-	-	-	-	-	-	-	-
129	AFUDC/WACC	[Line 126 + (Line 127 + Line 128/2)] x AFUDC Rate		-	-	-	-	-	-	-	-	-	-	-	-
130	Net Additions	Sum of Line 126 through 129	-	-	110	110	99	88	77	66	55	44	33	22	11
131	Amortization Expense		-	-	-	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)
132	Closing Balance	Line 126 + Line 130 + Line 131		-	110	99	88	77	66	55	44	33	22	11	-
133															
134	Deferred Charge, Mid-Year	(Line 126 + Line 132)/2	-	-	55	104	93	82	71	60	49	38	27	16	5
135		(-
136	Annual Discount Rate														
137	Fauity Component														
138	BOF %		9 15%	9 15%	9 15%	9 15%	0 15%	Q 15%	9 15%	0 15%	Q 15%	9 15%	0 15%	0 15%	9 15%
120	Faulty Portion		40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%
140	Debt Component		40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%
140	Long Term Dobt Pato		E 100/	E 100/	E 0.E%	4.02%	4 0 2 9/	4.029/	4 0 2 9/	4 0 2 9/	4.029/	4.020/	4 0 2 9/	4.02%	4 0 2 %
141	Long Term Debt Nate		5.16%	5.16%	5.05%	4.95%	4.95%	4.95%	4.95%	4.95%	4.95%	4.95%	4.95%	4.95%	4.95%
142	Long Term Debt Portion		55.03%	54.77%	55.45%	57.10%	57.10%	57.10%	57.10%	57.10%	57.10%	57.10%	57.10%	57.16%	57.10%
143	Short Term Debt Rate		3.45%	4.12%	1.86%	2.22%	2.22%	2.22%	2.22%	2.22%	2.22%	2.22%	2.22%	2.22%	2.22%
144	Short Term Debt Portion		4.37%	5.23%	4.55%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%
145															
146	Carbon Credit		_												
147	Credit (Tonne)		31	99	283	549	677	853	1,047	1,259	1,559	1,951	2,009	2,107	2,123
148	Carbon Price (\$/tonne)		200	200	200	200	200	200	200	200	200	200	200	200	200
149	Carbon Credit Revenue (\$)	Line 147 x Line 148	6	20	57	110	135	171	209	252	312	390	402	421	425
150															

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

Line	Particulars	Reference	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
151	NR Can Repayment		_												
152	Revenue	NR Can Stations Usage x Schedule 2, Line 15	-	9	61	137	183	246	316	391	499	639	761	802	809
153															
154	Expenses														
155	Cost of Electricity	NR Can Stations	-	8	47	154	173	194	216	239	269	309	321	336	344
156	Operation & Maintenance	NR Can Stations	-	2	17	110	143	146	149	152	146	149	152	155	158
157	Property Taxes	NR Can Stations	-	-	-	(3)	2	5	4	4	4	3	3	2	2
158	Depreciation Expense	NR Can Stations	-	-	138	242	331	331	331	331	333	336	338	341	217
159	Amortization Expense on Deferred Charges	NR Can Stations	-	-	-	8	8	8	8	8	8	8	8	8	8
160	Amortization Expense on CIAC	NR Can Stations	-	-	(35)	(71)	(176)	(176)	(176)	(176)	(176)	(176)	(176)	(176)	(176)
161	Other Revenue - Carbon Credits	NR Can Stations	-	(8)	(37)	(84)	(104)	(131)	(160)	(192)	(238)	(298)	(307)	(322)	(325)
162	Total Expenses	Sum of Lines 155 through 161		2	130	356	378	377	372	365	346	331	339	344	229
163		-													
164	Operating Income	Line 152 - Line 162	-	8	(70)	(219)	(195)	(130)	(56)	27	153	308	423	457	580
165	Interest	NR Can Stations	-	19	48	50	41	36	32	27	23	19	15	11	8
166	Earnings Before income taxes	Line 164 - Line 165		(11)	(118)	(268)	(236)	(167)	(88)	(1)	130	289	407	447	571
167	Income tax (recovery)	NR Can Stations	-	(355)	(183)	139	76	74	72	69	66	63	61	59	12
168	Net Earnings	Line 166 - Line 167		344	65	(408)	(311)	(240)	(160)	(69)	64	226	346	387	560
169	Ũ					. ,	. ,	. ,	. ,	. ,					
170	Cumulative Net Earnings	Cumulative Sum of Line 168	-	344	409	1	(310)	(551)	(711)	(780)	(716)	(490)	(143)	244	804
171	Repayment to Canada (True/False)	If both Line 168 & 170 are positive, then TRUE	FALSE	TRUE	TRUE	FALSE	TRUE	TRUE							
172	· · · ·	• •													
173	Repayment Ratio	NR Can funding as ratio of Capital	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
174	Repayment Amount	If Line 171 = TRUE, then Line 173 x Line 168	-	194	36	-	-	-	-	-	-	-	-	218	315

EV Charging Stations Review - 50 kW Stations

Schedule 2

September 2020

(\$000s), unless otherwise stated

Line	Particulars	Reference	2018	<u>2019</u>	<u>2020</u>	<u>2021</u>	2022	2023	<u>2024</u>	2025	<u>2026</u>	2027	<u>2028</u>	<u>2029</u>	<u>2030</u>
2	Incremental Annual Revenue Requirement	Cost of Service, Line 12	(6)	(295)	208	609	494	467	432	397	343	290	280	186	235
3	Subtract: FBC Power Purchase	-1 x Cost of Service. Line 2	(2)	(7)	(19)	(38)	(46)	(60)	(76)	(94)	(120)	(154)	(164)	(177)	(183)
4	Add: FBC Commercial Service Rate (RS 21)		10	20	69	189	213	239	269	297	337	389	404	423	434
5	Total Annual Revenue Requirement from EV Customer	Sum of Line 2 to Line 4	1	(282)	258	760	662	646	625	600	560	525	520	432	485
6	PV of Revenue Requirement (After-tax WACC of 5.87%)	Line 2 / (1 + Line 20)^Yr	1	(251)	218	607	500	462	422	383	338	300	281	221	234
7	Total PV of Annual Revenue Requirement	Sum of Line 6	3,717												
8															
9															
10	Levelized \$ per Minute Rate														
11	Number of Charging Minutes per Year		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
12	PV of Charging Minutes per year	Line 11 / (1 + Line 20)^Yr	14,459	84,181	332,910	609,262	768,913	977,115	1,183,890	1,387,972	1,673,059	2,026,620	2,281,957	2,272,174	2,166,414
13	Total PV of Charging Minutes per year	Sum of Line 12	15,778,924												
14															
15	Levelized \$ per minute rate to recover Cost of Service	Line 7 x 1,000 / Line 13	0.24												
16	Transaction Fee Percentage		15%												
17	Levelized \$ per minute rate (incl. Trans Fee)	Line 15 / (1 - Line 16)	0.28												
18															
19															
20	After- Tax Weighted Average Cost of Capital (WACC)	1	5.87%	5.89%	5.77%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%
21	1 - ROE Rate x Equity Component + [(STD Rate x STD Portion) + (LTD Rate	ate x LTD Portion)] x (1- Income Tax Rate)]													

Attachment 2.1b

EV Charging Stations Review - 100 kW Stations

Schedule 1

September 2020

(\$000s), unless otherwise stated

Line	Particulars	Reference	<u>2021</u>	2022	2023	2024	2025	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	2030
1	Cost of Service											
2	Power Purchase		6	8	11	13	17	21	27	35	44	48
3	Operation & Maintenance	Line 28	16	33	34	34	35	34	34	35	36	36
4	Property Taxes	Line 33	-	-	(1)	1	1	1	1	1	0	0
5	Depreciation Expense	Line 59	-	67	67	67	67	67	67	67	67	67
6	Amortization Expense on Deferred Charges	Line 106	-	2	2	2	2	2	2	2	2	2
7	Amortization Expense on CIAC	Line 72	-	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
8	Other Revenue - Carbon Credits	- Line 126	(18)	(24)	(30)	(37)	(44)	(55)	(69)	(86)	(104)	(111)
9	NR Can Repayment	Line 151	-	36	-	-	-	-	-	-	-	96
10	Income Taxes	Line 112	(87)	14	13	13	13	12	12	12	11	11
11	Earned Return	Line 96	10	20	18	16	14	12	10	9	7	5
12	Annual Revenue Requirement	Sum of Line 2 to Line 11	(72)	115	73	69	63	53	44	33	22	114
13	PV of Revenue Requirement (After-tax WACC of 5.76%)	Line 12 / (1 + Line 98)^Yr	(68)	103	62	55	48	38	30	21	13	65
14	Total PV of Annual Revenue Requirement	Sum of Line 13	368									
15												
16	2021 Approved Revenue Requirement (2021 Advanced I	Materials)	362.255	362.255	362.255	362.255	362.255	362.255	362.255	362.255	362.255	362.255
17	% Increase on 2021 Bate	Line 12 / Line 16	-0.02%	0.03%	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.03%
18		2	0102/0	0.0070	0102/0	0.02/0	0102/0	0.01/0	0.01/0	0.01/0	0.01/0	0.0070
19	PV of Annual 2021 Approved Revenue Requirement	Line 16 / (1 + Line 98)^Yr	342,515	323,851	306,204	289,519	273,743	258.826	244,722	231.387	218,779	206.857
20	Total PV of 2021 Approved Revenue Requirement	Sum of Line 19	2.696.403	020,001	000,201	200)010	270)710	200,020	,/	201,007	220,775	200,007
21	Levelized % Increase (10 yrs) on 2021 Rate	Line 14 / Line 20	0.01%									
22												
23	Operation & Maintenance											
24	Labour Costs		6	11	12	12	12	12	12	13	13	13
25	Non-Labour Costs		11	22	22	23	23	21	22	22	23	23
26	Total Gross O&M Expenses	Line 24 + Line 25	16	33	34	34	35	34	34	35	36	36
27	Less: Capitalized Overhead	Overhead Bate of 0%	-	-	-	-	-	-	-	-	-	-
28	Net O&M Expenses	Line 26 ± 1 ine 27	16	33	3/	3/	25	3/	3/	35	36	36
20	Net Oall Expenses	Line 20 + Line 27	10	55	54	54	33	54	54	55	50	50
20	Bronerty Taxes											
30	General School and Other			-	-	_		_	_	_		_
22	1% in Lieu of General Municipal Tax ¹	10/ of Line 12			(1)	1	1	1	1	1	0	0
52					(1)							
33	Total Property Taxes	Line 31 + Line 32	-	-	(1)	1	1	1	1	1	0	0
34	 Calculation is based on the second preceding year, e.g. 20 	23 is based on 2021 revenue										

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Line	Particulars	Reference	<u>2021</u>	2022	2023	<u>2024</u>	2025	2026	<u>2027</u>	2028	2029	<u>2030</u>
36	Capital Spending										·	_
37	Project Capital Spending ²		725	-	-	-	-	-	-	-	-	-
38	AFUDC		21				-					-
39	Total Annual Capital Spending & AFUDC	Sum of Line 37 to 40	746	-	-	-	-	-	-	-	-	-
40	Cost of Removal		-	-	-	-	-	-	-	-	-	-
41	Contributions in Aid of Construction (CIAC)		(450)	-	-	-	-	-	-	-	-	-
42	Total Annual Project Cost - Capital	Line 39 + Line 40	296	-		-					-	-
43	<i>,</i> ,											
44	Total Project Cost (incl. AFUDC)	Sum of Line 39	746									
45	Net Project Cost (incl. Removal and/or CIAC)	Sum of Line 42	296									
46	2 - Excluding capitalized overhead; First year of analysis in	cludes all prior year spending										
47												
48	Gross Plant in Service (GPIS)											
49	GPIS - Beginning ³	Preceding Year, Line 53	-	746	746	746	746	746	746	746	746	746
50	Additions to Plant ⁴		746	-	-	-	-	-	-	-	-	-
51	Retirements											-
52	Net Addition to Plant	Sum of Line 50 to 51	746	-	-	-	-	-	-	-	-	-
53	GPIS - Ending	Line 49 + Line 52	746	746	746	746	746	746	746	746	746	746
54	3 - Consistent with treatment of CPCN, additions (when w	ork complete and placed in-service) is shown in th	e opening balance of plant on .	an 1 of follow	/ing year)							
55	4 - Includes capitalized overhead											
56												
57	Accumulated Depreciation				((12.1)	(224)	(2.50)	(0.0.5)	((150)	(= - = -)
58	Accumulated Depreciation - Beginning	Preceding Year, Line 61	-	-	(67)	(134)	(201)	(268)	(335)	(401)	(468)	(535)
59	Depreciation Expense	Line 49 @ 8.97%	-	(67)	(67)	(67)	(67)	(67)	(67)	(67)	(67)	(67)
60	Retirements		<u> </u>									-
61	Accumulated Depreciation - Ending	Sum of Line 58 to 60	-	(67)	(134)	(201)	(268)	(335)	(401)	(468)	(535)	(602)
62	5 - Depreciation & Amortization Expense calculation is bas	ed on opening balance x composite depreciation	rate; The composite rate of all a	ssets addition	n to plant is 8.	.97%						
63	Contributions in Aid of Construction (CIAC)											
64 65	CIAC Boginning	Drocoding Voor Line 68		(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)
66	Additions	Preceding fear, Line oo	- (450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)
67	Retirements		(450)	_	_	_	_	_	_	_	_	_
68	CIAC - Ending	Sum of Line 65 to 67	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)
60	CIAC - Lifuing	Sum of Line 05 to 07	(450)	(430)	(450)	(430)	(450)	(450)	(430)	(430)	(430)	(450)
70	Accumulated Amortization of Contributions in Aid o	f Construction (CIAC)										
71	Accumulated Amortization of CIAC - Beginning	Preceding Year, Line 74	-	-	40	81	121	161	202	242	283	323
72	Amortization (over 11.15 yrs)	Line 65 @ 8.97%	-	40	40	40	40	40	40	40	40	40
73	Retirements		-	-	-	-	-	-	-	-	-	-
74	Accumulated Amortization of CIAC - Ending	Sum of Line 71 to 73		40	81	121	161	202	242	283	323	363
75	O											

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76	Rate Base and Earned Return											
77	Gross Plant in Service - Beginning	Line 49	-	746	746	746	746	746	746	746	746	746
78	Gross Plant in Service - Ending	Line 53	746	746	746	746	746	746	746	746	746	746
79												
80	Accumulated Depreciation - Beginning	Line 58	-	-	(67)	(134)	(201)	(268)	(335)	(401)	(468)	(535)
81	Accumulated Depreciation - Ending	Line 61	-	(67)	(134)	(201)	(268)	(335)	(401)	(468)	(535)	(602)
82												
83	CIAC - Beginning	Line 65	-	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)
84	CIAC - Ending	Line 68	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)	(450)
85	-											
86	Accumulated Amortization of CIAC - Beginning	Line 71	-	-	40	81	121	161	202	242	283	323
87	Accumulated Amortization of CIAC - Ending	Line 74	-	40	81	121	161	202	242	283	323	363
88												
89	Net Plant in Service, Mid-Year	(Sum of Lines 77 to Line 87.) / 2	148	282	256	229	203	176	150	123	97	70
90	Adjustment to 13-month average	6	-					-			-	-
91	Cash Working Capital	Line 53 x FBC CWC/Closing GPIS %	2	2	2	2	2	2	2	2	2	2
02	Total Pate Base	Sum of Line 89 to 91	150	302	27/	245	217	199	160	122	10/	75
93	Total Nate Dase	Sum of Line 85 to 91	155	302	2/4	245	217	105	100	152	104	/5
94	Fauity Return	Line 92 x BOF x Equity %	6	11	10	9	8	7	6	5	4	3
95	Debt Component	7	5		8	7	6	5	5	4	3	2
06	Total Farnad Paturn	1 in 0.04 ± 1 in 0.05		20	10	16	14	12	10			
90	Poturn on Pato Paco %		5 5 4%	6 5 4 %	6 5 4 %	6 5 4 %	14 6 5 1%	6 5 4 %	6 5 4 %	5	6 5 4 %	6 5 4 9/
<i></i>	After Tax Weighted Average Cost of Capital (MACC)	8	0.54%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	0.54%
98	After- rax weighted Average Cost of Capital (WACC)	5	5.76%	5./6%	5.76%	5.76%	5.76%	5./6%	5.76%	5.76%	5.76%	5.76%
99	ь - (Line 52 + Line 59 + Line 66) х [(Days in-service/365)-1/2]											

100 7 - Line 92 x (LTD Rate x LTD% + STD Rate x STD %)

101 8 - ROE Rate x Equity Component + [(STD Rate x STD Portion) + (LTD Rate x LTD Portion)] x (1- Income Tax Rate)]

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Line	Particulars	Reference	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
103	Income Tax Expense											
104	Earned Return	Line 96	10	20	18	16	14	12	10	9	7	5
105	Deduct: Interest on debt	Line 95	(5)	(9)	(8)	(7)	(6)	(5)	(5)	(4)	(3)	(2)
106	Add: Depreciation Expense	Line 59	-	67	67	67	67	67	67	67	67	67
107	Deduct: CIAC Amortization	Line 72	-	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
108	Deduct: Capital Cost Allowance	Line 120 (Include CCA from 2018)	(240)	(3)	(3)	(2)	(2)	(2)	(2)	(2)	(2)	(1)
109	Taxable Income After Tax	Sum of Line 104 to 108	(234)	37	36	35	34	33	32	32	31	30
110	Income Tax Rate		27%	27%	27%	27%	27%	27%	27%	27%	27%	27%
111												
112	Total Income Tax Expense	Line 109 / (1 - Line 110) x Line 110	(87)	14	13	13	13	12	12	12	11	11
113												
114	Capital Cost Allowance											
115	Opening Balance	Proceeding Year, Line 121	-	35	32	29	27	25	23	21	19	18
116	Additions to Plant	Line 39	746	-	-	-	-	-	-	-	-	-
117	Less: AFUDC	Line 38	(21)	-	-	-	-	-	-	-	-	-
118	Less: CIAC	Line 41	(450)	-	-	-	-	-	-	-	-	-
119	Net Addition for CCA	Sum of Line 116 through 118	275	-	-	-	-	-	-	-	-	-
120	CCA	[Line 115 + (Line 119/2)] x CCA Rate	(240)	(3)	(3)	(2)	(2)	(2)	(2)	(2)	(2)	(1)
121	Closing Balance	Line 115 + Line 119 + Line 120	35	32	29	27	25	23	21	19	18	16
122	0											
123	Carbon Credit											
124	Credit (Tonne)		91	119	151	185	222	275	344	430	521	554
125	Carbon Price (\$/tonne)		200	200	200	200	200	200	200	200	200	200
126	Carbon Credit Revenue (\$)	Line 124 x Line 125	18	24	30	37	44	55	69	86	104	111
127	•••											

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Line	Particulars	Reference	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	2025	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	2030
128	NR Can Repayment											
129	Revenue	Schedule 2, Line 10 x Schedule 2, Line 14	35	50	68	87	108	137	176	223	274	292
130												
131	Expenses											
132	Cost of Electricity	Schedule 2, Line 4	60	78	84	94	100	108	119	131	144	151
133	Operation & Maintenance	Line 3	16	33	34	34	35	34	34	35	36	36
134	Property Taxes	Line 4	-	-	(1)	1	1	1	1	1	0	0
135	Depreciation Expense	Line 5	-	67	67	67	67	67	67	67	67	67
136	Amortization Expense on Deferred Charges	Line 6	-	2	2	2	2	2	2	2	2	2
137	Amortization Expense on CIAC	Line 7	-	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)
138	Other Revenue - Carbon Credits	- Line 126	(18)	(24)	(30)	(37)	(44)	(55)	(69)	(86)	(104)	(111)
139	Total Expenses	Sum of Lines 132 through 138	58	116	116	121	120	116	113	109	105	106
140												
141	Operating Income	Line 129 - Line 139	(23)	(65)	(48)	(35)	(13)	21	63	114	169	187
142	Interest	Line 95	5	9	8	7	6	5	5	4	3	2
143	Earnings Before income taxes	Line 141 - Line 142	(28)	(74)	(56)	(42)	(19)	15	58	111	166	184
144	Income tax (recovery)	Line 112	(87)	14	13	13	13	12	12	12	11	11
145	Net Earnings	Line 143 - Line 144	59	(88)	(69)	(55)	(31)	3	46	99	155	173
146												
147	Cumulative Net Earnings	Cumulative Sum of Line 145	59	(29)	(98)	(153)	(184)	(181)	(135)	(36)	119	292
148	Repayment to Canada (True/False)	If both Line 145 & 147 are positive, then TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE
149												
150	Repayment Ratio	NR Can funding as ratio of Capital	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
151	Repayment Amount	If Line 148 = TRUE, then Line 150 x Line 145	36	-	-	-	-	-	-	-	96	108

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Schedule 2
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Line	Particulars	Reference	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
1												
2	Incremental Annual Revenue Requirement	Cost of Service, Line 12	(72)	115	73	69	63	53	44	33	22	114
3	Subtract: FBC Power Purchase	-1 x Cost of Service, Line 2	(6)	(8)	(11)	(13)	(17)	(21)	(27)	(35)	(44)	(48)
4	Add: FBC Commercial Service Rate (RS 21)		60	78	84	94	100	108	119	131	144	151
5	Total Annual Revenue Requirement from EV Customer	Sum of Line 2 to Line 4	(18)	186	147	150	147	141	135	129	123	218
6	PV of Revenue Requirement (After-tax WACC of 5.76%)	Line 2 / (1 + Line 19)^Yr	(17)	166	124	120	111	101	92	83	74	124
7	Total PV of Annual Revenue Requirement	Sum of Line 6	977									
8												
9	Levelized \$ per Minute Rate											
10	Number of Charging Minutes per Year		71,953	104,393	140,305	179,793	222,934	284,211	364,113	463,103	567,923	606,296
11	PV of Charging Minutes per year	Line 10 / (1 + Line 19)^Yr	68,032	93,326	118,596	143,693	168,463	203,065	245,978	295,803	342,989	346,211
12	Total PV of Charging Minutes per year	Sum of Line 11	2,026,154									
13												
14	Levelized \$ per minute rate to recover Cost of Service	Line 7 x 1,000 / Line 12	0.48									
15	Transaction Fee Percentage		15%									
16	Levelized \$ per minute rate (incl. Trans Fee)	Line 14 / (1 - Line 15)	0.57									
17												
18												
19	After- Tax Weighted Average Cost of Capital (WACC)	1	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%
20	1 - ROE Rate x Equity Component + [(STD Rate x STD Portion) + (LTD	Rate x LTD Portion)] x (1- Income Tax Rate)]										