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March 12, 2024

British Columbia Public Interest Advocacy Centre
Suite 803 470 Granville Street
Vancouver, B.C.
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Attention: Leigha Worth, Executive Director

Dear Leigha Worth:

Re: FortisBC Inc. (FBC)

FBC Electric Vehicle (EV) Direct Current Fast Charge (DCFC) Energy-Based Rate Application (Application)

Response to the British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre *et al.* (BCOAPO) Information Request (IR) No. 1

On December 22, 2023, FBC filed the Application referenced above. In accordance with the regulatory timetable established in BCUC Order G-17-24 for the review of the Application, FBC respectfully submits the attached response to BCOAPO IR No. 1.

For convenience and efficiency, if FBC has provided an internet address for referenced reports instead of attaching the documents to its IR responses, FBC intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC INC.

Original signed:

Sarah Walsh

Attachments

cc (email only): Commission Secretary
Registered Interveners

1.0 Reference: Exhibit B-1, page 2

Preamble: The Application states:

> "As part of the RS 96 Assessment Report, FBC committed to providing an updated assessment report or an application for energy-based rates by December 31, 2023. The BCUC accepted the RS 96 Assessment Report by Letter L-33-23 dated June 19, 2023, including FBC's proposal to apply an expected service life of 10 years to EV DCFC charging stations. A copy of the RS 96 Assessment Report is included as Appendix A to this Application."

1.1 Apart from the proposal regarding the 10-year expected service life for EV DCFC charging stations, did the RS 96 Assessment Report contain any other proposals that FBC considers having been accepted by the Commission as a result of Letter L-33-23?

Response:

BCUC Letter L-33-23 also accepted FBC's proposal to provide an update to its RS 96 Assessment Report by December 31, 2023, if an application for energy-based rates was not filed with the BCUC prior to this date. As FBC filed this Application on December 22, 2023, an update to the RS 96 Assessment Report was not necessary.

2.0 Reference: Exhibit B-1, page 2

Preamble: The Application states:

> "On February 20, 2023, Measurement Canada announced a temporary dispensation program for commercial level 3+ EV charging devices that permits energy-based (i.e., kWh) meters to be used at level 3+ EV charging stations that are in-service prior to July 1, 2024 without verification and sealing, subject to the terms and conditions of the temporary dispensation program. On December 18, 2023, FBC applied to Measurement Canada's temporary dispensation program for its existing EV DCFC charging stations and expects to receive approval early in 2024."

2.1 Given that Measurement Canada announced the temporary dispensation program on February 20, 2023, why did FBC wait until December 18, 2023 to apply for dispensation regarding its existing EV DCFC charging stations?

Response:

As explained in Section 4.1.2 of the RS 96 Assessment Report (included as Appendix A to the Application), once Measurement Canada announced the temporary dispensation, there were a number of actions and considerations that FBC needed to undertake before filing an application for an energy-based rate design. These included a detailed review of the temporary dispensation requirements and the terms and conditions, a detailed review of customer comments and feedback regarding energy-based rates, and steps to ensure the compatibility and eligibility of FBC's existing stations.

The above actions and considerations, coupled with the time required to develop the energy-based rate proposals and prepare the Application, resulted in FBC filing the Application with the BCUC in December 2023. Since FBC requires both the temporary dispensation from Measurement Canada and BCUC approval for implementing the energy-based rate, FBC considered a filing timeline of December 2023 for the Application to be reasonable.

2.2 Do FBC's existing EV DFC charging stations currently comply with all of the terms and conditions of the temporary dispensation program?

2.2.1 If not, what terms and conditions are not currently met by FBC's existing EV DCFC charging stations?

2.2.2 If not, what is the timeline and cost required to bring FBC's EV DCFC charging stations in compliance?

Response:

FBC believes that all of its DCFC stations comply with all terms and conditions of the temporary dispensation program.

2.3 What is the current status of FBC's application for dispensation?

Response:

FBC's application for dispensation is under review by Measurement Canada. FBC received a request for additional detail pertaining to each of the charging stations on January 30, 2024. FBC provided the additional detail to Measurement Canada on February 22, 2024. A decision from Measurement Canada is pending.

3.0 Reference: Exhibit B-1, pages 4 & 5; Section3.2 and Appendix E1, E2 and E3

Preamble: The Application states:

"The establishment of a new rate base deferral account, titled the RS 96 Energy-Based Rate Application Cost deferral account, to record the costs associated with the regulatory review of the Application, with the amortization period to be determined in a future rate setting proceeding." (page 4)

"As noted above, FBC is seeking approval to establish a rate base deferral account, titled the RS 96 Energy-Based Rate Application Cost deferral account, to capture the costs associated with the regulatory process for this Application, including BCUC costs, Participant Cost Award funding, and external legal fees. FBC estimates the total regulatory process costs to be $150 thousand in 2024 based on the proposed regulatory timetable provided in Table 1-1 below." (page 5)

3.1 Apart from the costs identified on page 5 (i.e., BCUC costs, Participant Cost Award funding, and external legal fees), are there any other costs that will be included in the proposed RS 96 Energy-Based Rate Application Cost deferral account?

Response:

Based on the regulatory timetable approved by Order G-17-24, FBC does not expect any other costs will be added to the RS 96 Energy-Based Rate Application Cost deferral account beyond what is described on pages 4 and 5 of the Application.

3.2 Have these expected costs been included in the cost of service analysis for the 50 kW and 100 kW EV DCFC charging stations and the derivation of the proposed rate of $0.42 / kWh?

3.2.1 If not, please provide an updated versions of Appendices E1, E2 and E3 that include these costs and indicate what resulting levelized energy based rate would be required to recover the cost of service over the proposed 10 year period.

Response:

The costs associated with the regulatory process are not included in the EV DCFC cost of service model and the calculation of the proposed energy-based rate. Consistent with the treatment of

FBC's other regulatory proceeding cost deferral accounts, including the regulatory proceeding costs associated with FBC's previous applications for EV DCFC service (i.e., the Original Application in 2017 and the Revised Application in 2020), the costs recorded in the requested RS 96 Energy-Based Rate Application Cost deferral account are proposed to be recovered from FBC's other (non-EV) customers through amortization of the deferral account. While the proposed energy-based rate is specific to FBC's RS 96 (i.e., EV) customers, the purpose of this Application is to propose an energy-based rate that results in the recovery of the cost of FBC's EV DCFC service from EV customers (on a levelized basis), in order to mitigate the potential for FBC's other customers to bear the costs of under-recoveries. The Application is therefore important for all of FBC's customers, and it is reasonable and consistent with FBC's other regulatory proceeding cost deferral accounts for the regulatory proceeding costs for this Application to be recovered through the rates of FBC's other customers.

4.0 Reference: Exhibit B-1, page 9

Preamble: The Application states:

"FBC also notes the following factors that further limited the utilization and year-over-year growth for 2023:

1. The 50 kW stations in New Denver and Nakusup were transferred to BC Hydro in November 2022 as approved by Order G-215-21. As such, the total charging minutes in 2023 were reduced as a result of excluding these two stations.

2. The charging stations in Castlegar (50 kW and 100 kW) have been out of service since May 2023 due to the construction of the new building for the Castlegar Chamber of Commerce. The stations recently re-opened in December 2023 with limited access only, but FBC expects the stations will return to full service in early 2024 after construction is complete."

4.1 Please confirm that in Table 2-2, the charging minutes cited for 2022 and 2023 50 kW stations exclude the minutes associated with the New Denver and Nakusup stations. If not confirmed, please explain the treatment of the 2022 and 2023 charging minutes for these stations.

Response:

As the New Denver and Nakusp stations were transferred to BC Hydro in November 2022, the associated charging minutes from these two stations are included in Table 2-2 up to November 2022. There are no charging minutes from New Denver and Nakusp in Table 2-2 starting from December 2022.

4.2 Please confirm that in Table 2-2, the calculation of the 2022 and 2023 utilization rates for 50 kW stations excludes the availability and charging minutes associated with the New Denver and Nakusup stations. If not confirmed, please explain the treatment of these stations in the determination of the 2022 and 2023 utilization rates for 50 kW stations.

Response:

The utilization rates in Table 2-2 of the Application are calculated using all actual charging minutes from all stations; thus, 2022 includes the charging minutes from New Denver and Nakusp up to November 2022 before both stations were transferred to BC Hydro. Subsequent to the transfer of

the stations to BC Hydro (i.e., from December 2022 and onward), the utilization rates were calculated with no charging minutes from New Denver and Nakusp.

4.3 Please confirm that in Table 2-2, the 50 and 100 kW charging minutes cited for 2023 and the 2023 utilization rates for both 50 kW and 100 kW stations exclude the Castlegar stations. If not confirmed, please explain the treatment of the Castlegar station for 2023.

Response:

In 2023, the 50 kW and 100 kW stations at Castlegar were open from January through to the beginning of May. As such, Table 2-2 of the Application includes only those actual charging minutes from Castlegar during the period in 2023 when the stations were open, and the utilization rates in Table 2-2 include only those charging minutes from Castlegar when the station was open. Castlegar re-opened with limited access at the start of 2024.

4.4 Please update Table 2-2 to include 2023 actual values. In doing so, please use the same treatment of the New Denver, Nakusup and Castlegar stations as in the current table.

4.4.1 If data is not available for all of 2023, please indicate for what period 2023 actual data is available and provide FBC's updated projection as to the charging minutes and utilization rates for 50 kW and 100 kW utilization rate for this 2023 period. In doing so, please use the same treatment of the New Denver, Nakusup and Castlegar stations as in the current table.

Response:

Please refer to Table 1 below which shows the charging minutes, utilization rates, and year-over-year growth rates for FBC's 50 kW and 100 kW stations with full years of 2023 Actuals. The New Denver, Nakusp, and Castlegar stations are included as described in the responses to BCOAPO IR1 4.1, 4.2 and 4.3.

Table 1: Charging Minutes, Utilization % and Year-over-Year Growth Rates for 50 kW and 100 kW EV DCFC Stations (2018 Actual to 2023 Actual)

	50 kW			100 kW		
Year	Charging Minutes	Utilization %	Year-over-Year Growth Rates	Charging Minutes	Utilization %	Year-over-Year Growth Rates
2018	15,309	0.6%				
2019	94,386	1.6%	180%			
2020	110,504	0.8%	(54%)			
2021	231,942	1.3%	73%	16,539	0.5%	
2022	410,783	2.2%	67%	54,933	1.3%	149%
2023	525,724	2.9%	36%	123,819	2.9%	125%

4.5 Please provide a schedule that for the 50 kW stations and for each year 2018-2022 (2023 if actuals are available) the following: i) the total available charging minutes, ii) the total number of actual charging minutes in each year, iii) the utilization rate (i.e., ratio of item (ii) over item (i)), iv) the total number of charging sessions in each year, v) the average number of minutes per charging session in each year, vi) the total kWh dispensed in each year, v) the average energy dispensed per minute of charging in each year, and vi) the average energy dispensed per charging session in each year.

Response:

Please refer to Table 1 below for the requested data.

Table 1: Charging Minutes, Charging Sessions, and Dispensed Energy for 50 kW EV DCFC Stations (2018 to 2023 Actuals)

	2018	2019	2020	2021	2022	2023
Number of Stations	5	11	28	34	36	34
i) Maximum Available Minutes[1]	2,628,000	5,781,600	14,716,800	17,870,400	18,921,600	17,870,400
ii) Charging Minutes	15,309	94,386	110,504	231,942	410,783	525,724
iii) Utilization Ratio[2] (%)	0.6%	1.6%	0.8%	1.3%	2.2%	2.9%
iv) Charging Sessions	541	1,686	3,516	6,685	11,350	13,888
v) Charging Minutes per Charging Session	28	56	31	35	36	38
vi) Dispensed Energy (kWh)	7,855	27,970	65,094	134,215	240,308	310,380
vii) Dispensed Energy per Charging Minute (kWh)	0.513	0.296	0.589	0.579	0.585	0.590
viii) Dispensed Energy per Charging Session (kWh)	14.519	16.590	18.514	20.077	21.173	22.349

Notes to Table:

[1] Calculated based on 60 minutes per hour x 24 hours per day x 365 days per year x number of stations

[2] Charging minutes / maximum available minutes

4.6 Please provide a schedule that for the 100 kW stations and for each year 100 kW stations were in operation through to 2022 (2023 if actuals are available) the following: i) the total available charging minutes, ii) the total number of actual charging minutes in each year, iii) the utilization rate (i.e., ratio of item (ii) over item (i)), iv) the total number of charging sessions in each year, v) the average number of minutes per charging session in each year, vi) the total kWh dispensed in each year, v) the average energy dispensed per minute of charging in each year, and vi) the average energy dispensed per charging session in each year.

Response:

Please refer to Table 1 below for the requested data.

Table 1: Charging Minutes, Charging Sessions, and Dispensed Energy for 100 kW EV DCFC Stations (2021 to 2023 Actuals)

	2021	2022	2023
Number of Stations	6	8	8
i) Maximum Available Minutes[1]	3,153,600	4,204,800	4,204,800
ii) Charging Minutes	16,539	54,933	123,819
iii) Utilization Ratio[2] (%)	0.5%	1.3%	2.9%
iv) Charging Sessions	527	1,950	4,144
v) Charging Minutes per Charging Session	31	28	30
vi) Dispensed Energy (kWh)	11,590	44,415	113,336
vii) Dispensed Energy per Charging Minute (kWh)	0.701	0.809	0.915
viii) Dispensed Energy per Charging Session (kWh)	21.993	22.777	27.349

Notes to Table:

[1] Calculated based on 60 minutes per hour x 24 hours per day x 365 days per year x number of stations

[2] Charging minutes / maximum available minutes

4.7 Please recalculate the 2022 utilization rate for 50 kW stations based on charging minutes and available minute values that include the New Denver and Nadkusup stations for the period in 2022 when they were owned by FBC.

Response:

As noted in the response to BCOAPO IR1 4.2, the 2022 utilization rate for FBC's 50 kW stations includes the New Denver and Nakusp stations up to November 2022 (i.e., before the stations were transferred to BC Hydro).

4.8 Please recalculate the 2023 utilization rates for 50 kW stations and 100 W stations based on charging minutes and available minute values that include: i) the New Denver and Nadkusup stations for all of 2021 and ii) the Castlegar stations for the 2023 period during which they were fully accessible. For 2023 please use, as appropriate, either i) the actual data for 2023 or ii) the updated 2023 projections per the previous question.

Response:

Please refer to the response to BCOAPO IR1 4.4 for the 2023 utilization rates of the 50 kW and 100 kW stations with the full year of 2023 actuals.

Regarding item i), it is not reasonable to include the charging minutes of the New Denver and Nakusp stations from 2021 into the actual charging minutes of 2023. First, FBC did not own these stations in 2023. Second, there is no reason to skew the 2023 utilization rates by including charging minutes from 2021. The number of EVs on the road and station usage are vastly different between 2021 and 2023; therefore, it would not be reasonable to assume the 2021 usage applies to 2023.

Regarding item ii), FBC has already included the charging minutes of the Castlegar station for the period when the station was fully accessible, as discussed in the response to BCOAPO IR1 4.3. Therefore, there is no change to the utilization rate as provided in the response to BCOAPO IR1 4.4.

5.0 Reference: Exhibit B-1, page 9 and Appendix F, page 7

Preamble: The Application states:

> "FBC expects the utilization of its EV DCFC stations will continue to grow. The CleanBC Roadmap to 2030 commits to amend the BC Zero-Emission Vehicles (ZEV) Act to reach ZEV sales of 21 percent by 2026, 90 percent by 2030, and 100 percent by 2035, which is accelerated from the current target in the ZEV Act of 10 percent by 2025, 30 percent by 2030, and 100 percent by 2040. Please refer to Section 3.2.1.2 of the Application for the updated assumptions and forecasts of EV sales in FBC's service area and growth in utilization for FBC-owned DCFC stations."
>
> Appendix F identifies a number of EV segments including light-duty, medium duty, heavy duty and buses.

5.1 Do the sales targets in the CleanBC Roadmap and the BC Zero-Emission Vehicles (ZEV) Act pertain to all EV segments (i.e., light-duty, medium duty, heavy duty and buses)?

5.1.1 If not, to which segments do the targets apply?

Response:

The sales targets cited refer to the ZEV Act targets for light-duty passenger vehicle sales only.

5.2 Please provide a schedule that sets out as of the end of each of the years 2017 through 2023 the number of EV registered in FortisBC's service area by segment? Note: If not available by segment, please provide the year-end values broken down as available.

Response:

FBC began collecting EV registration data in 2020. The 2020 data includes battery electric vehicles only, whereas 2021 and 2022 include plugin hybrids and fuel cell electric vehicles. The 2023 year-end registration data is not yet available from ICBC. No medium or heavy duty EVs were registered before the end of 2022 in FBC's service territory. Please refer to Table 1 below for the EV registration data from 2020 to 2022.

Table 1: EV Registration Data in FBC Service Area from 2020 to 2022

Year	Light Duty ZEVs
2020	831
2021	2,953
2022	4,174

6.0 Reference: Exhibit B-1, pages 9-10

6.1 Please update Table 2-3 to include the actual 2023 values for the full year.

Response:

Table 1 below provides an update to Table 2-3 of the Application with the full year of 2023 actuals. The main difference from the original Table 2-3 of the Application is the monetization of carbon credits in 2023 being delayed to 2024. FBC has not yet received the validation of the carbon credits from the 2021 Compliance Report, which was submitted to the BC Low Carbon Fuel Standard (BC-LCFS) in March 2022. As discussed during FBC's Annual Review for 2024 Rates and acknowledged by the BCUC in the Annual Review for 2024 Rates Decision and Order G-340-23[1], there continues to be uncertainty regarding the timing of the validation of carbon credits by the provincial authority. FBC expects to receive the credit validation in 2024 and monetize the credits in mid-2024.[2]

Table 1: Updated Table 2-3 of the Application for Costs and Revenues of FBC's DCFC Service To-date (2018-2023 Actuals, $000s)

Line	Particulars	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Acutal	2023 Actual	Cumulative
1	Cost of Energy	2	7	7	13	136	189	
2	Less: Power Purchase Expense	(2)	(7)	(7)	(13)	-	-	
3	O&M	0	2	46	101	213	204	
4	Depreciation	-	60	197	307	456	551	
5	Amortization of CIAC	-	(35)	(70)	(150)	(190)	(236)	
6	Other Revenue - Carbon Credits	-	-	-	-	(744)	-	
7	Income Tax	(9)	(361)	(72)	(299)	(6)	55	
8	Earned Return	6	53	95	124	170	192	
9	Total Cost of Service ($000s)	(2)	(282)	196	83	35	955	**985**
10	RS 96 Revenue ($000s)	(4)	(24)	(28)	(60)	(116)	(173)	**(405)**
11	**(Surplus) / Deficiency**	**(6)**	**(306)**	**168**	**23**	**(81)**	**782**	**580**

6.2 In Table 2-3, the carbon credit revenue of $744,000 shown in 2022 is for credits earned over what period of time?

6.2.1 What were the total kWh associated with these credits?

[1] Pages 13 to 14 of the Decision.

[2] If the delayed carbon credits to 2024 are accounted, the cumulative deficiency would have been approximately $36 thousand, based on the expected monetization value of $544 thousand.

Response:

The carbon credit revenue of $744 thousand is related to the carbon credits generated from 2018 to 2020, which were monetized in 2022. The equivalent electricity is approximately 1.46 GWh, of which 273,073 kWh is from FBC's DCFC stations. As explained on page 8 of the RS 96 Assessment Report included as Appendix A to the Application, the credits earned prior to 2022 are eligible for both public charging stations owned by FBC as well as public stations owned by other entities (metered commercial accounts). However, the eligibility definition was changed from 2022 and onwards to only include the final supplier who owns the electricity going through the final supply equipment (i.e., charging equipment).

6.3 In Table 2-3, the carbon credit revenue of $544,000 shown in 2023 is for credits earned over what period of time?

6.3.1 What were the total kWh associated with these credits?

Response:

The carbon credit revenue of $544 thousand projected for 2023 in Table 2-3 of the Application is for carbon credits generated in 2021 (as part of the 2021 Compliance Report to BC-LCFS). The equivalent electricity is approximately 1.35 GWh, of which 253,112 kWh is from FBC-owned stations. As explained in the response to BCOAPO IR1 6.2, FBC was eligible for credits from third-party public stations prior to 2022. Also, as discussed in the response to BCOAPO IR1 6.1, FBC's 2021 Compliance Report submitted in March 2022 has not yet been validated by BC-LCFS. As such, there is no actual carbon credit revenue in 2023 and the associated carbon credits are now expected to be monetized in 2024.

6.4 The actual 2023 carbon credit revenue provided in response to part 1 (above) is for credits earned over what period of time?

6.4.1 What were the total kWh associated with these credits?

Response:

Please refer to the response to BCOAPO IR1 6.3.

7.0 Reference: Exhibit B-1, pages 10 and 19

Preamble: The Application states:

> "Although there is a cumulative deficiency to-date and, therefore, a negligible rate impact to FBC's other customers, the current approved time-based rates were set on a 10-year levelized basis; as such, a deficiency in the early years is expected. Based on the original approved forecast in the Revised Application, FBC was not expecting its EV DCFC stations to be in a surplus position until 2025 or later. FBC also notes that, as part of the proposed energy-based rates discussed in Section 3 below, FBC is expecting to recover the full cost of service over the expected life of the EV DCFC Stations." (page 10)

> "As such, the proposed energy-based rate is designed to fully recover the cost-of-service of FBC's EV DCFC service since inception to 2033, including past surpluses/deficiencies from 2018 to 2023, and the forecast cost-of-service from 2024 to 2033." (page 19)

7.1 What was the 10-year period over which the currently approved levelized rates were set?

Response:

The currently approved levelized time-based rates were set based on a 10-year levelized period from 2021 to 2030. For clarity, when FBC set the current levelized time-based rates in the Revised Application filed in September 2020, FBC included the cost-of-service of the 50 kW stations from 2018 to 2020; thus, the approved levelized time-based rate for the 50 kW stations covers a period of 13 years from 2018 to 2030. As there were no 100 kW stations prior to 2021, the approved levelized time-based rate for the 100 kW stations covers a 10-year period from 2021 to 2030.

As explained in Section 3.2.1.3 of the Application, the 10-year levelized period was selected based on the 10-year expected service life of a new station.

7.2 Based on the current Application, in what year is FBC's EV DCFC stations expected to be in a surplus position (on an annual basis)?

Response:

Concurrently with these IR responses, FBC has filed an Evidentiary Update to the Application which updates FBC's proposed energy-based rate from $0.42 per kWh to $0.39 per kWh. FBC

has responded to this information request based on the updated cost-of-service analysis for FBC's EV DCFC stations as presented in the Evidentiary Update.

As shown in Appendix E-3, Schedule 1, Line 26 of the Evidentiary Update, FBC's EV DCFC stations are forecast to be in a surplus position by 2029.

7.3 Over what period of time were FBC's currently owned DCFC stations placed into service?

7.3.1 Based on this timeframe and the expected service life of DCFC charging stations, please reconcile FBC's claim that "FBC is expecting to recover the full cost of service over the expected life of the EV DCFC Stations" with an analysis period used in Section 3 that extends to 2033.

Response:

FBC's existing stations were placed in service between 2018 and 2022. Please refer to the response to BCUC IR1 3.1 for an explanation of why FBC selected a 10-year levelization period from 2024 to 2033 for the proposed energy-based rate.

FBC notes the statement on page 19 of the Application and referenced in the preamble above is referring to the fact that the proposed energy-based rate is calculated to recover the total cost-of-service of FBC's DCFC service from 2018 to 2033, which includes the past surpluses/deficiencies from 2018 to 2023, and that the proposed levelization period covers one lifecycle of each station, which is 10 years. This is reconciled in Appendix E-3, Schedule 4, Line 14 of the Application (also in the Evidentiary Update), which shows that the present value of the deficit/surplus for FBC's EV DCFC stations over the 10-year levelization period from 2024 to 2033 is forecast to be zero (i.e., the present value of the revenue at the proposed energy-based rate from 2024 to 2033 equals the present value of the cost-of-service over the same period).

8.0 Reference: Exhibit B-1, page 10, Footnote #15

Preamble: The Application states:

> "The actuals for 2018 to 2022 are as presented in FBC's Annual Review for 2024 Rates Application (Table 3-1), including a $2 thousand increase to 2021 revenue as explained in the response to BCSEA IR1 13.3. The 2023 Projected numbers include actuals up to November 2023, while Table 3-1 of FBC's 2024 Annual Review included actuals up to May 2023."

8.1 Table 3-1 in FBC's Annual Review for 2024 Rates Application deals with FBC's Forecast Incremental 2024 DSM Savings (GWh). Please provide the correct reference as to where in FBC's Annual Review for 2024 Rates Application the actual costs and revenues for 2018 to 2022 are set out.

Response:

The reference in Footnote 10 of the Application should be to Table 3-5 of FBC's Annual Review for 2024 Rates. FBC notes that Table 3-5 from the 2024 Annual Review only provides the aggregate surplus/deficiency from 2018 to 2021. For the detailed breakdown of the costs and revenues from 2018 to 2021, please refer to Table 2-3 of this Application.

9.0 Reference: Exhibit B-1, pages 11-12, Appendix A, page 9 and Appendix E-1 & E-2

9.1 The FBC EV DCFC Service RS 96 Assessment Report (G-341-21 Compliance Filing) includes time-based rates for Tesla. However, Table 2-4 does not. Please explain why and, if available, provide time-based rates for Tesla.

Response:

Table 2-4 of the Application did not include the time-based rates for Tesla because they have converted to energy-based rates, which is listed in Table 2-5 of the Application.

9.2 Please confirm that FBC's Cost of Service Analysis for 50 kW and 100 kW charging stations assumes electricity is dispensed at rates of 0.592 kWh/minute and 0.905 kWh/minute respectively in 2024 and after (per line 21 of the Volume_Rev_O&M Tab in Appendices E-1 and E-2).

9.2.1 If not confirmed, what were the assumptions used?

Response:

Not confirmed. FBC does not make any assumption of dispensed electricity per charging minute (i.e., kWh/min) in its cost-of-service model or in the calculation of the proposed energy-based rate.

Line 21 in the Volume_Rev_O&M tab of Appendices E-1 and E-2 are not assumptions FBC used for forecasting between dispensed electricity or charging minutes. Rather, the kWh/min shown on Line 21 of the Volume_Rev_O&M tab of both Appendices are the calculated value based on the forecast charging minutes and dispensed electricity in kWh. As such, these values represent an output from the forecasts, rather than an assumption used for the forecast.

As explained in Sections 3.2.1.2 and 3.2.1.3 of the Application, FBC applied the growth rates from Dunsky's medium scenario and a maximum utilization cap of 54 percent to both the actual charging minutes and actual dispensed electricity in order to forecast for 2024 to 2033. Please refer to the response to BCUC IR1 4.1 which provides examples for calculating the forecast of charging minutes from 2024 to 2033 and to the response to BCUC IR1 5.2 which provides the calculation for forecasting the dispensed electricity using the same examples in BCUC IR1 4.1.

9.3 Based on FBC's assumed dispensing rates (kWh/minute) for 50 kW and 100 kW charging stations, please provide a revised version of Table 2-4 for the 50 and 100 kW stations where the time-base rates have been converted to energy based rates.

Response:

As explained in the response to BCOAPO IR1 9.2, the kWh/min numbers shown in Appendices E-1 and E-2 are not assumptions of the DCFC stations' dispensed electricity over charging minutes. These kWh/min numbers are calculated based on FBC's actual charging minutes and dispensed kWh between 2018 and 2023, or calculated based on FBC's forecast charging minutes and dispensed kWh between 2024 and 2033.

FBC is not able to convert the time-based rates to the energy-based rates for the service providers listed in Table 2-4 of the Application for the following reasons:

- FBC's proposed energy-based rate is not a direct conversion from time-based rates using certain kWh/min assumptions. FBC's proposed energy-based rate is calculated to recover the cost-of-service of its EV DCFC stations based on a 10-year levelization period.
- The kWh/min data calculated in Appendices E-1 and E-2 of the Application are specific to FBC's DCFC stations, which are reflective of the locations and the demographics of the customers that use FBC's stations. These factors could be very different than the experience of those service providers listed in Table 2-4. Applying this data to other service providers would not be reasonable.
- FBC does not have information on how the time-based rates were set by other service providers, such as whether they are cost-based or market-based, and FBC has no knowledge as to whether the stations of other service providers are in a surplus or deficiency position in order to calculate an energy-based rate.

10.0 Reference: Exhibit B-1, pages 8 & 19 and Appendices A, E1, E2 & E3

Preamble: The Application states:

"FBC's RS 96 EV charging rates were originally set on a levelized-cost basis from 2018 to 2030 for the 50 kW stations (13 years) and from 2021 to 2030 for the 100 kW stations (10 years). The levelized costs were based on the original planned installation schedule of all stations to be complete in 2021 with an expected service life of 10 years for the DCFC stations.

FBC is proposing to reset the rates for its EV DCFC service starting in 2024 over a 10-year levelization period (i.e., 2024 to 2033). For clarity, the cost-of-service analysis over the 10-year period includes the actual accumulated deficiency of approximately $15 thousand discussed in Section 2.2 as a cost in 2024. As such, the proposed energy-based rate is designed to fully recover the cost-of-service of FBC's EV DCFC service since inception to 2033, including past surpluses/deficiencies from 2018 to 2023, and the forecast cost-of-service from 2024 to 2033." (page 19)

"FBC's RS 96 EV charging rates were originally set on a levelized-cost basis from 2018 to 2030 for the 50 kW DCFC stations (13 years) and from 2021 to 2030 for the 100 kW DCFC stations (10 20 years). The levelized costs were based on the original planned installation schedule of all stations to be complete in 2021 with an expected service life of 10 years for the DCFC stations. However, due to delays in construction of some stations as well as the safety retrofits completed in 2022 as discussed in Section 2.2.2, the evaluation period is now extended to 2032 for both 50 kW and 100 kW stations. This reflects all 50 kW and 100 kW assets entering FBC's rate base in 2022, plus 10 years of expected service life." (Appendix A, page 15)

10.1 Please provide a revised version of Table 2-1 which indicates: i) the in-service date for each of the 42 stations listed and ii) the first year the cost of each station was included in rate base.

10.1.1 Per Appendix E1 (Capital Cost Tab, Row 35), please confirm that all of FBC's EV DCFC stations were in-service by the end of 2022.

Response:

FBC's DCFC stations were placed in-service between 2018 and 2022, as such, FBC confirms all of its stations were in-service by the end of 2022. Please refer to Table 1 below which provides an updated Table 2-1 with the requested in-service dates for each of the 42 stations.

Table 1: Updated Table 2-1: List of FBC's Current 50 kW and 100 kW EV DCFC Stations and In-service Dates

Station Name	50 kW Station	100 kW Station	First Station In-Service Date (MM-DD-YY)	Second Station In-Service Date (MM-DD-YY)
Beaverdell	2	-	11-08-19	05-28-20
Castlegar	1	1	01-12-18	12-22-21
Christina Lake	1	1	01-12-18	03-05-21
Creston	2	-	01-12-18	12-09-21
Grand Forks	2	-	12-22-21	12-22-21
Greenwood	1	1	01-12-18	12-08-21
Kaslo	1	-	01-31-20	-
Kelowna Airport	1	1	05-24-19	07-14-21
Kelowna Museum	2	-	11-08-19	05-21-20
Keremeos	1	1	12-08-22	12-08-22
Kootenay Bay	2	-	10-01-20	10-01-20
Naramata	2	-	12-16-21	12-16-21
Nelson	2	-	01-08-20	05-08-20
Oliver	2	-	12-10-19	05-15-20
Osoyoos	1	1	12-10-19	05-13-21
Penticton	2	-	10-01-20	12-16-21
Princeton	1	1	11-30-22	11-20-22
Rock Creek	1	1	12-03-20	07-15-21
Rossland	2	-	01-13-20	05-06-20
Rutland	2	-	11-08-19	05-25-20
Salmo	1	-	01-12-18	-
Trail	2	-	12-08-20	12-08-20
Total	**34**	**8**		

However, regarding item ii), pursuant to Order G-9-18, FBC was directed "to separately track and account for all costs associated with DCFC stations and exclude all such costs from its utility rate base until the Commission directs otherwise." As a result, all of FBC's DCFC stations were held outside of rate base until the issuance of Order G-215-21, dated July 14, 2021, which approved FBC to "include the assets associated with its EV DCFC stations that meet the definition of a prescribed undertaking under the Greenhouse Gas Reduction Regulation (GGRR) in FBC's rate base." Following this decision in 2021, FBC included all of its DCFC stations in rate base in 2022.

10.2 Appendix A sets out the rationale for the evaluation period being extended to 2032 in the Rate Schedule 96 Detailed Assessment Report. Please explain why it is appropriate to extend the evaluation period to 2033 for purposes of the current Application as opposed to continuing to use the 2018-2032 period.

10.2.1 Please provide revised versions of Appendices E1, E2 and E3 where the energy-based rates are set so as to fully recover the cost of service over the period 2018-2032 (i.e. the evaluation period used in Appendix A).

Response:

Please refer to the response to BCUC IR1 3.1 which explains the rationale for using a 10-year levelization period from 2024 to 2033.

If the energy-based rate was set based on a levelization period from 2024 to 2032, the energy-based rate would increase to $0.45 per kWh. FBC notes that this energy-based rate includes the update related to the carbon credit calculation discussed in the Evidentiary Update which changed the proposed energy-based rate to $0.39 per kWh. Please refer to Attachment 10.2A, 10.2B, and 10.2C for the revised Appendices E1, E2, and E3 reflecting a levelization period from 2024 to 2032.

10.3 Please provide revised versions of Appendices E1, E2 and E3 where the energy-based rates are set so as to fully recover the cost of service over the period 2018-2030 (i.e., the evaluation period used in the original application).

Response:

Please refer to the response to BCUC IR1 3.1 which shows that if the energy-based rate is calculated based on a levelization period up to 2030 only, the rate will increase to $0.61 per kWh. FBC notes that this energy-based rate includes the update related to the carbon credit calculation discussed in the Evidentiary Update which changed the proposed energy-based rate to $0.39 per kWh. Please refer to Attachment 10.3A, 10.3B, and 10.3C for the revised Appendices E1, E2, and E3 reflecting a levelization period from 2024 to 2030.

10.4 Based on the approved 10 year service life, what is the last year that any of the currently existing EV DCFC stations is assumed to be: i) in-service in the current cost of service analysis, and i) included in rate base in the current cost of service analysis?

Response:

FBC's most recent 50 kW and 100 kW stations (i.e., Keremeos and Princeton) were placed into service in 2022 with final invoices for work received in 2023. Therefore, these stations will reach the end of their 10-year expected service life in 2032. However, since some costs were received in 2023, these stations will not be fully depreciated in FBC's rate base until 2033.

11.0 Reference: Exhibit B-1, pages 19-21 and Appendices E1, E2 and F

Application for Approval of Rate Design and Rates for Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Service (Revised Application), Exhibit B-7, BCUC 8.4, 8.4.1 and 8.5

Preamble: The Application states:

"The utilization of FBC's EV DCFC stations is the number of minutes per year that EV customers will use the stations to charge their vehicles. Consistent with the approach used in FBC's Revised Application that set the existing approved time-based rates, the forecast of station utilization will be based on the historical charging minutes in each station escalated by the growth rates of EV sales from 2024 to 2033.

In order to develop the growth rates for FBC's owned EV DCFC stations, FBC engaged Dunsky Energy + Climate Advisors (Dunsky) to provide a forecast of light duty EV sales in the FBC service area from 2023 to 2040 based on three growth scenarios, i.e., low growth, medium growth, and high growth, depending on various factors such as public charging infrastructure, existing building charging infrastructure retrofits, availability of vehicle incentives, government policy, and local availability of EV stock. Table 3-1 below summarizes Dunsky's three growth scenarios for light duty EVs, and Table 3-2 provides the growth rates for the three scenarios. The Dunsky analysis is included as Appendix F." (page 19) [Emphasis added]

"In setting the energy-based rates from 2024 to 2033 as part of this Application, FBC applied the medium scenario growth rates from Dunsky's analysis to all of FBC's EV DCFC stations with a cap of maximum utilization at 54 percent at each station." (pages 20-21)

11.1 Please clarify whether the growth rates in Table 3-2 are based on: i) the year over year percentage increase in sales (i.e., the percentage increase between the annual sales of EVs in a given year and the annual sales in the previous year) as indicated on page 19, ii) the year over year percentage increase in total EV registrations as done in FBC's Revised Application, or iii) some other EV sales growth metric.

11.1.1 If not based on the year over year percentage increase in total EV registrations, please explain the approach used and why the approach used in the current Application differs from that used in the Revised Application previously filed with the BCUC.

11.1.2 If not based on the year over year percentage increase in total EV registrations, please provide the historical annual values 2018-2022 for the metric used.

Response:

The growth rates in Table 3-2 are based on the year-over-year growth in EV sales as indicated on page 19 of the Dunsky report. Please refer to Table 1 below for the historical EV sales from 2018 to 2022. 2023 Actual EV sales have not been released at the time of responding to this information request.

Table 1: Actual EV Sales in FBC Service Area (2018-2022)

Year	Annual EV Sales	Cumulative EV Sales
2018	330	685
2019	630	1,310
2020	170	1,480
2021	870	2,350
2022	1,415	3,765

FBC has used the forecast growth in EV sales for forecasting utilization of its EV DCFC stations instead of the forecast growth in EV registrations for the following reasons:

- Access to up-to-date EV registration data from ICBC that is specific to FBC's service area is limited. As the forecast of EV sales data from the Dunsky report is more comprehensive, it provides a better basis for the forecast.
- For the purposes of forecasting growth in utilization of FBC's DCFC stations, the year-over-year growth in percentage is more important than the absolute numbers, whether based on EV sales or EV registrations. In both cases, the forecast will show the growth in the number of EVs on the road, which in turn will increase the utilization of FBC's stations. Although the absolute number might be different between EV sales and EV registrations, FBC believes the difference in the year-over-year growth in percentage terms between the two would be small.

As such, FBC considers it is reasonable to use the year-over-year growth in EV sales from the Dunsky report for forecasting the utilization of its EV DCFC stations.

11.2 Please provide a schedule setting out the number of EV registrations in each year from 2018 to 2023 (as used in the Application). If available, please also provide the actual number of 2023 EV registrations.

Response:

Please refer to the response to BCOAPO IR1 5.2 for the EV registrations from 2020 to 2022. FBC does not have data prior to 2020, and the 2023 data has not yet been released by ICBC.

11.3 Please confirm whether the growth rates set out in Table 3-2 (page 20) are based on the year over year growth in sales/registrations for: i) light duty passenger EVs, ii) total light duty EVs (passenger plus commercial), or iii) some other categorization of EVs. If the latter, please define.

11.3.1 If based on light duty passenger EVs, please confirm that the growth rates in Table 3-2 are based on the values set out in Appendix E1, Growth Tab, Cells H13-H25.

11.3.2 If based on some other categorization of EVs, please provide a schedule that sets out the forecast of EV sales/registrations used for the cost of service analysis and the calculation of the year over year percentage increases reconciling with the values in Table 3-2.

11.3.3 Please indicate where in Appendix F the forecast sales/registration values used in the cost of service analysis can be found.

Response:

The growth rates from Dunsky's scenarios are based on the year-over-year growth in sales for total light duty EVs (LDVs). Page 19 of Appendix F provides the figures for the growth rates and cumulative sales from Dunsky's analysis. The underlying data for these figures is not provided in Appendix F, but it is shown in the Growth Rates tab of Appendix E-1. Please also refer to the response to BCOAPO IR1 11.4 where FBC explains the cumulative sales in 2040 shown in the Growth Rates tab in Appendix E-1 (i.e., 246,418) are the correct and most up-to-date numbers.

FBC only used the EV sales data for passenger LDVs (i.e., Column L of the Growth Rates tab of Appendix E-1) to develop the growth rates shown in Table 3-2 of the Application (which aligns with Column H of the Growth Rates tab of Appendix E-1). FBC did not include commercial vehicles or medium and heavy-Duty Vehicles (MHDVs) which are also discussed on pages 22 to 24 of

Dunsky's analysis in Appendix F. FBC expects there will be very limited commercial EVs and that it is unlikely there will be MHDVs using public fast-charging networks.

11.4 Please reconcile: i) the 240,682 in cumulative sales for 2040 set out in Appendix F (page 19) with ii) the cumulative sales values set out in Appendix E1 (Growth Rates Tab) of 216,614 for passenger EVs and 29,804 for commercial EVs.

Response:

The 240,682 in cumulative EV sales under the medium growth scenario by 2040 shown in the figure on page 19 of Appendix F includes both passenger and commercial vehicles. As discussed in the response to BCOAPO IR1 11.3, FBC only used passenger EVs to develop the growth rates shown in Table 3-2 of the Application.

While responding to this information request, FBC noticed that the cumulative numbers shown in the figure on page 19 of Appendix F are from an older version of the data. The most updated data is shown in the Growth Rate tab of Appendix E-1, which for medium growth should be 246,418 (216,614 for passenger EVs and 29,804 for commercial EVs). As such, the numbers in Appendix E-1 are the correct and most up-to-date numbers for the purposes of calculating the proposed energy-based rate for FBC's EV DCFC stations.

12.0 Reference: Exhibit B-1, page 20 and Appendix E1 (Volume_Rev_O&M Tab)

Preamble: The Application states:

"Table 3-1 below summarizes Dunsky's three growth scenarios for light duty EVs, and Table 3-2 provides the growth rates for the three scenarios. The Dunsky analysis is included as Appendix F." (page 19)

Set out below are the forecasted annual charging minutes for each of the years 2023 to 2033 per Appendix E1 for the 50 kW stations and the calculated annual growth rates.

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Actual/Forecast	Projected	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Growth Rate Selected: (Update Solver in Rate Design tab if changed)											
Dunsky Medium Adoption		0.47	0.39	0.36	0.38	0.37	0.35	0.32	0.28	0.25	0.22
Total Annual Charging Minutes	531,009	808,192	1,123,053	1,527,736	2,110,212	2,884,275	3,731,263	4,745,553	5,742,760	6,530,948	7,209,025
Annual Growth		52%	39%	36%	38%	37%	29%	27%	21%	14%	10%

Set out below are the forecasted annual charging minutes for each of the years 2023 to 2033 per Appendix E2 for the 100 kW stations and the calculated annual growth rates.

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Actual/Forecast	Projected	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Growth Rate Selected: (Update Solver in Rate Design tab if changed)											
Dunsky Medium Adoption		0.474284745	0.389587466	0.360341799	0.381267251	0.366817626	0.350694583	0.320611153	0.284183618	0.245378506	0.21698
Total Annual Charging Minutes	127814.6273	199705.4723	277508.2212	377506.0329	521436.7203	712708.9001	962652.0508	1192964.486	1451327.318	1737807.538	1997142
Annual Growth		56%	39%	36%	38%	37%	35%	24%	22%	20%	15%

12.1 Given the statement on page 19, please explain why the annual growth rates set out in the Preamble for 50 kW stations do not match the values in Table 3-2.

12.2 Given the statement on page 19, please explain why the annual growth rates set out in the Preamble for 100 kW stations do not match the values in Table 3-2.

12.3 Please explain why, in some years, the growth rates are different for 50 kW and 100 kW stations.

Response:

Please refer to the response to BCUC IR1 4.1.

12.4 Please provide a schedule, similar to that in the Preamble, for the charging minutes for 50 kW and 100 kW stations combined.

12.4.1 If the annual growth rates for total charging minutes do not equal those in Table 3-2, please explain why.

Response:

Please see Table 1 below for the requested information, which includes the full year of 2023 Actuals reflected in the Evidentiary Update filed concurrently with these information requests.

Table 1: Forecast Total Annual Charging Minutes and Growth Rates for 50 kW and 100 kW Stations

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
50 kW Charging Minutes	525,724	800,403	1,112,230	1,513,012	2,089,874	2,856,477	3,684,130	4,683,309	5,672,679	6,440,660	7,099,146
100 kW Charging Minutes	123,819	193,865	269,392	366,466	506,187	691,866	934,499	1,172,632	1,425,216	1,705,290	1,966,948
Combined Charging Minutes	**649,543**	**994,268**	**1,381,622**	**1,879,478**	**2,596,062**	**3,548,343**	**4,618,629**	**5,855,941**	**7,097,896**	**8,145,950**	**9,066,095**
Calculated Growth Rate[1]		0.53	0.39	0.36	0.38	0.37	0.31	0.27	0.21	0.15	0.11
Medium Growth Rate[2]		0.47	0.39	0.36	0.38	0.37	0.35	0.32	0.28	0.25	0.22
Difference in Growth		**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.04**	**-0.05**	**-0.07**	**-0.10**	**-0.10**

Notes to Table:

[1] Current year combined charging minutes / previous year combined charging minutes - 1

[2] Dunsky medium growth rate from Table 3-2 of the Application

Please refer to the response to BCUC IR1 4.1 for an explanation on how the growth rates from Dunsky's medium scenario are applied to the forecast of the charging minutes from 2024 to 2033. The primary reason for the difference in 2024 is the adjustment related to the closure of the Castlegar station in 2023, and the difference in 2029 to 2033 is due to the maximum utilization cap of 54 percent applied to certain stations.

13.0 Reference: Exhibit B-1, pages 20-21 and Appendices E1, E2 & E3 BC Hydro's Public Electric Vehicle Charging Service Rates Application, Exhibit B-1, page 5-18

Preamble: The Application states:

"In setting the energy-based rates from 2024 to 2033 as part of this Application, FBC applied the medium scenario growth rates from Dunsky's analysis to all of FBC's EV DCFC stations with a cap of maximum utilization at 54 percent at each station. The maximum utilization of 54 percent is based on FBC's estimates of historical utilization on an hourly basis at its own EV DCFC stations, which showed approximately 90 percent of the public EV charging activities occurred between 8 am and 7 pm each day."

The BC Hydro Public Electric Vehicle Charging Service Rates Application states:

"Considering high usage hours and a maximum wait time of 10 minutes, BC Hydro's simulation determined that the number of customers leaving to find other charging stations to avoid long wait times during peak use hours could be limited to less than 5% at a maximum charging port utilization rate of 30%.

Accordingly, all three scenarios assume an average maximum utilization rate of 30% for urban charging stations. Non-urban charging stations are not expected to reach a maximum utilization rate of 30% and accordingly, no maximum utilization rate assumption is required for these stations."

13.1 It is noted that the eleven hours between 8 am and 7 pm represent 45.8% of the hours in day. Taking this value and the fact these hours account for 90% of the charging activity would yield a maximum utilization rate of 51%, even if one were to assume continuous charging during the 11 hours (45.8%/0.9=51.9%). Recognizing that continuous charging is unlikely (i.e., even in the unlikely event of continuous line-ups during the eleven hours there would be down time between charging events as vehicles change position), please provide the analysis supporting the determination that 54% is the maximum utilization rate.

Response:

Please refer to the response to BCUC IR1 4.2.

13.2 Apart from its own analysis and that undertaken by BC Hydro (per the Preamble), is FBC aware of any other assessments or analysis regarding the expected maximum utilization rate for public EV DCFCs?

13.2.1 If yes, please provide.

Response:

FBC is not aware of other assessments or analyses relevant to FBC's decision to use a 54 percent maximum utilization cap at each of its stations. As shown in the response to BCUC IR1 4.2, this cap was developed based on FBC's actual data at its stations which FBC considers to be the most representative data on how its stations are used by its customers.

13.3 Please provide revised versions of Appendices E1, E2 and E3 that calculate the levelized rate required to fully recover costs assuming a maximum utilization rate of 30%.

Response:

FBC is aware of the 30 percent maximum utilization rate used by BC Hydro; however, FBC does not have knowledge of how the 30 percent was developed. As explained in the response to BCOAPO IR1 13.2, the 54 percent maximum utilization rate was developed by FBC based on the actual utilization data from FBC's stations and FBC therefore considers this data to be the most relevant and representative information available.

However, in order to be responsive, FBC recalculated the energy-based rate using the 30 percent maximum utilization cap. Using a 30 percent cap increases the energy-based rate to $0.50 per kWh and would result in FBC's rate being one of the highest energy-based rates in BC. At this high rate relative to other service providers in FBC's service area, FBC believes there would be a significant risk of reduced utilization at its stations, with customers choosing less expensive alternative public charging options. Please refer to Attachments 13.3A, 13.3B, and 13.3C for the revised Appendices E-1, E-2, and E-3 containing the energy-based rate calculations if using a maximum utilization rate of 30 percent.

14.0 Reference: Exhibit B-1, page 19

Preamble: The Application states:

> "The utilization of FBC's EV DCFC stations is the number of minutes per year that EV customers will use the stations to charge their vehicles. Consistent with the approach used in FBC's Revised Application that set the existing approved time-based rates, the forecast of station utilization will be based on the historical charging minutes in each station escalated by the growth rates of EV sales from 2024 to 2033."

14.1 Does FBC agree that growth in competing DCFC stations in its service area will impact (i.e. reduce) the utilization rates at its own DCFC stations?

14.1.1 If not, why not?

14.1.2 If yes, how has FBC accounted for this in the determination of its forecasted utilization rates?

Response:

As shown in the response to BCUC IR1 4.1, FBC uses the 2023 actual charging minutes with the growth of EV sales from Dunsky's medium scenario to forecast for 2024 to 2033. FBC notes that there are already a number of third-party DCFC stations that have started operations in FBC's service territory over the last several years; however, given that the proposed energy-based rate at FBC's DCFC stations is similar to the offering by third-party service providers in FBC's service area (as shown in Table 2-5 of the Application), FBC believes the market share between FBC and other service providers should remain similar to the current level as EV sales continue to grow.

Furthermore, FBC believes that growth in both its own as well as third-party stations ultimately helps to advance the overall adoption of EVs. As the number of EVs continues to grow, there would be growth in the utilization of both FBC's and third-parties' DCFC stations, benefiting all service providers. As such, FBC did not make adjustments to account for growth in third-party DCFC stations.

15.0 Reference: Exhibit B-1, pages 19 and 32

Preamble: The Application states:

"The utilization of FBC's EV DCFC stations is the number of minutes per year that EV customers will use the stations to charge their vehicles. Consistent with the approach used in FBC's Revised Application that set the existing approved time-based rates, the forecast of station utilization will be based on the historical charging minutes in each station escalated by the growth rates of EV sales from 2024 to 2033." (page 19)

"it is reasonable that, regardless of whether a 50 kW or 100 kW station is used, the premium EV model with a bigger battery capacity and capability of faster charging ultimately pays more in total because it consumes more energy (more electricity is dispensed into this EV) during a charging session than a regular EV model with a smaller battery capacity and lower charging speed."(page 32)

15.1 Are all batteries used in the EVs currently registered in FBC's service area able to fully utilize the charging capability of FBC's 50 kW DCFC stations?

15.2 Are all of the batteries used in the EVs currently registered in FBC's service area able to fully utilize the charging capability of FBC's 100 kW DCFC stations?

15.3 If the response to either of the preceding questions is no, please confirm that future improvements in battery technology will likely lead to: i) reductions in the charging minutes required for a single charging session and ii) reductions in the total charging minutes required for a given number of registered EVs.

15.3.1 If not confirmed, please explain why.

15.3.2 If confirmed, please indicate how FBC has accounted for this in its utilization forecast.

Response:

FBC is aware that there is a range of EV battery sizes and charge rates in its service area, many of which are capable of charging at speeds greater than 50 kW and a number that are capable of charging at speeds greater than 100 kW. However, FBC does not have data related to EVs registered in or outside of its service area and is therefore not in a position to comment specifically about EV battery and charging characteristics.

As technology improves, it is possible that the number of charging minutes per charge session could reduce due to higher vehicle charging speeds. FBC's energy-based rate accounts for these changes as it is based on energy usage per charging session irrespective of the vehicle charging rate. Thus, changes in vehicle charging speeds over time will have no impact on FBC's proposed

1 energy-based rate. On that basis, FBC does not believe it is necessary to adjust its forecast to
2 account for batteries that can charge faster for the same amount of electricity (i.e., kWh).

3

16.0 Reference: Exhibit B-1, pages 20-21 and Appendices E1 & E2

Preamble: The Application states:

"For the purpose of forecasting the dispensed electricity from 2024 to 2033 over the 10-year levelized period, FBC assumed there is a direct correlation between the number of charging minutes and dispensed electricity in kWh. Thus, based on the same approach for forecasting station utilization described in Section 3.2.1.2 above, FBC applied the same annual growth rates of forecast EV sales in FBC's service area from Table 3-2 above under the medium growth scenario from the Dunsky analysis to the historical dispensed electricity in kWh recorded in 2023 as the base year."

Set out below is the forecasted dispensed energy for each of the years 2023 to 2033 per Appendix E1 for the 50 kW stations and the annual calculated growth rates.

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Actual/Forecast	Projected	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Growth Rate Selected: (Update Solver in Rate Design tab if changed)											
Dunsky Medium Adoption		0.474285	0.389587	0.360342	0.381267	0.366818	0.350695	0.320611	0.284184	0.245379	0.21698
Dispense/Metered kWh (2018-2022 Actual; 2023 Projected; 2024-2033 Forecast Based on Utilization Regression - Section 3.2.1.3 of Application)											
Total Annual Dispensed kWh	315471.4	478327.4	664677.7	904188.9	1248927	1707055	2211576	2816495	3412328	3887791	4297067
Annual Growth		0.5162	0.3896	0.3603	0.3813	0.3668	0.2956	0.2735	0.2116	0.1393	0.1053

Set out below is the forecasted annual dispensed energy for each of the years 2023 to 2033 per Appendix E2 for the 100 kW stations and the calculated annual growth rates.

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Actual/Forecast	Projected	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Growth Rate Selected: (Update Solver in Rate Design tab if changed)											
Dunsky Medium Adoption		0.474285	0.389587	0.360342	0.381267	0.366818	0.350695	0.320611	0.284184	0.245379	0.21698
Dispense/Metered kWh (2018-2022 Actual; 2023 Projected; 2024-2033 Forecast Based on Utilization Regression - Section 3.2.1.3 of Application)											
Total Annual Dispensed kWh	116731.3	180713.1	251116.6	341604.4	471847	644928.7	871101.8	1080293	1315114	1575489	1809617
Growth		0.54811	0.38959	0.36034	0.38127	0.36682	0.35069	0.24015	0.21737	0.19799	0.14861

16.1 Given the statement on page 21, please explain why the annual growth rates set out in the Preamble for 50 kW stations do not match the values in Table 3-2.

16.2 Given the statement on page 21, please explain why the annual growth rates set out in the Preamble for 100 kW stations do not match the values in Table 3-2.

Response:

Please refer to the response to BCUC IR1 4.1 which explains the reasons for the difference in the growth rates for charging minutes between Table 3-2 and Appendix E-1 for the 50 kW stations as well as Appendix E-2 for the 100 kW stations. The same reasons apply for the difference in growth rates for dispensed electricity.

16.3 Please explain why, in some years, the growth rates are different for 50 kW and 100 kW stations.

Response:

Please refer to the response to BCUC IR1 4.1 which explains that the difference in the growth rates for charging minutes between the 50 kW and 100 kW stations is due to the station-by-station calculation and the 54 percent maximum utilization cap. Both also lead to the difference in the growth rates for dispensed energy between the 50 kW and 100 kW stations.

16.4 Please provide a schedule, similar to that in the Preamble, for the dispensed energy for the 50 kW and 100 kW stations combined.

16.4.1 If the annual growth rates for total dispense energy do not equal those in Table 3-2, please explain why.

Response:

Please refer to Table 1 below for the requested information, which includes the full year of 2023 Actuals reflected in the Evidentiary Update filed concurrently with these IRs.

Table 1: Forecast Total Dispensed Energy and Growth Rates for 50 kW and 100 kW Stations

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
50 kW Dispensed Energy (kWh)	310,380	470,821	654,247	890,000	1,229,328	1,680,267	2,170,631	2,763,178	3,352,546	3,815,211	4,212,110
100 kW Dispensed Energy (kWh)	113,336	175,743	244,211	332,210	458,871	627,193	847,146	1,063,616	1,293,542	1,548,492	1,785,819
Combined Charging Minutes	**423,716**	**646,565**	**898,458**	**1,222,210**	**1,688,199**	**2,307,460**	**3,017,777**	**3,826,794**	**4,646,088**	**5,363,703**	**5,997,928**
Calculated Growth Rate[1]		0.53	0.39	0.36	0.38	0.37	0.31	0.27	0.21	0.15	0.12
Medium Growth Rate[2]		0.47	0.39	0.36	0.38	0.37	0.35	0.32	0.28	0.25	0.22
Difference in Growth		**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.04**	**-0.05**	**-0.07**	**-0.10**	**-0.10**

Notes to Table:

[1] Current year combined dispensed energy / previous year combined dispensed energy - 1

[2] Dunsky medium growth rate from Table 3-2 of the Application

Please refer to the response to BCUC IR1 4.1 for an explanation of how the growth rates from Dunsky's medium scenario are applied to forecast the charging minutes from 2024 to 2033; the same method applies to dispensed electricity. The primary reason for the difference in 2024 is the adjustment related to the closure of the Castlegar station in 2023, and the differences in 2029 to 2033 are due to the maximum utilization cap of 54 percent applied to certain stations.

17.0 Reference: Exhibit B-1, pages 8 & 21-22 and Appendices E1 & E2

Preamble: The Application states:

"For the purpose of forecasting the cost of electricity at FBC's stations, which is based on the metered electricity, FBC used the forecast of dispensed electricity as described above and the regression of the actual ratio of monthly dispensed electricity over metered electricity vs. the actual monthly station utilization (i.e., total charging minutes over the total number of minutes available) of each FBC owned DCFC station from 2018 to 2023, as shown in Figure 3-1 below, to forecast the metered electricity. As shown in Figure 3-1, as the utilization of the station increases, the ratio of dispensed electricity over metered electricity increases. This is expected, as more EV charging will increase the dispensed electricity, which will reduce the amount of standby electricity while the consumption by the ancillary electronic or telecommunication equipment should remain relatively constant." (page 21)

"FBC also notes that six of its 50 kW stations take electricity service from third-party utilities (i.e., two from Nelson Hydro, two from the City of Penticton, and two from the City of Grand Forks). The cost of third-party electricity use is included in the O&M costs related to FBC's DCFC service, as discussed in Section 3.2.1.5 below, and is not included as part of FBC's cost of electricity." (page 22)

17.1 For those sites in Table 2-1 (page 8) that have both 50 kW and 100 kW stations how, for purposes of Appendices E1 and E2, did FBC determine the proportion of the metered energy that should be assigned to 50 kW stations and 100 kW stations as set out in Row 19 of the Volume_Rev_O&M Tab for each Appendix for each of the years 2018 to 2023?

Response:

As the first 100 kW stations were placed into service in 2021, metered electricity from 2018 to 2020 is for the 50 kW stations. For 2021 to 2023, FBC allocated the metered electricity between the 50 kW and 100 kW stations based on the dispensed electricity.

17.2 In Appendices E1 and E2 (Volume_Rev_O&M Tab), do the values in Row 18 (Total Annual Dispensed kWh) represent the dispensed energy from all FBC DCFC

stations, including those where the energy is not supplied by FBC (per Rows 46-49)?

Response:

Confirmed. The Total Annual Dispensed kWh shown on Row 18 of the Volume_Rev_O&M tab of Appendices E-1 and E-2 includes the dispensed electricity from all of FBC's DCFC stations, including those located in service areas of third-party utilities.

17.3 In Appendices E1 and E2 (Volume_Rev_O&M Tab), do the values in Row 19 (Total Annual Metered kWh) represent the metered energy for all FBC DCFC stations, including those where the energy is not supplied by FBC (per Rows 46-49)?

Response:

Confirmed. The Total Annual Metered kWh shown on Row 19 of the Volume_Rev_O&M tab of Appendices E-1 and E-2 includes the metered electricity from all of FBC's DCFC stations, including those located in service areas of third-party utilities.

17.4 If the response to both of the preceding questions (i.e. parts (2) and (3)) is yes for the 50 kW stations, please provide a schedule setting out the ratio of energy dispensed versus metered energy for each of the years 2023 through 2033.

17.4.1 Based on the values in Rows 18 and 19 (Appendix E1 (Volume_Rev_O&M Tab)) this ratio will be greater than 1.0 for 2030 and after. Please explain why this is the case given relationship set out in Figure 3-1.

Response:

While responding to this IR, FBC discovered an excel formula error on Rows 18 and 19 of the Volume_Rev_O&M tab of Appendices E-1 and E-2 which caused the dispensed electricity to exceed the metered electricity for 2030 to 2033. The impact of this excel error is small and has been corrected as part of the Evidentiary Update. FBC is responding to this IR based on the corrected dispensed and metered electricity from the Evidentiary Update.

Please see Tables 1 and 2 below which show the ratio of energy dispensed versus metered energy for the 50 kW stations from Appendix E-1 and the 100 kW stations from Appendix E-2 of the Evidentiary Update, respectively.

Table 1: Dispensed Energy versus Metered Energy for 50 kW Stations (from Evidentiary Update)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total Annual Dispensed kWh	310,380	470,821	654,247	890,000	1,229,328	1,680,267	2,170,631	2,763,178	3,352,546	3,815,211	4,212,110
Total Annual Metered kWh	486,142	654,132	841,105	1,076,851	1,407,122	1,855,371	2,343,941	2,948,427	3,557,323	4,038,888	4,451,252
Ratio of Dispensed to Metered	**0.64**	**0.72**	**0.78**	**0.83**	**0.87**	**0.91**	**0.93**	**0.94**	**0.94**	**0.94**	**0.95**

Table 2: Dispensed Energy versus Metered Energy for 100 kW Stations (from Evidentiary Update)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total Annual Dispensed kWh	113,336	175,743	244,211	332,210	458,871	627,193	847,146	1,063,616	1,293,542	1,548,492	1,785,819
Total Annual Metered kWh	166,482	255,166	326,663	413,943	536,371	701,099	913,108	1,127,088	1,361,624	1,629,991	1,879,809
Ratio of Dispensed to Metered	**0.68**	**0.69**	**0.75**	**0.80**	**0.86**	**0.89**	**0.93**	**0.94**	**0.95**	**0.95**	**0.95**

17.5 If the response to either parts (2) or (3) is no for the 50 kW stations, please provide a schedule that, for each of the years, 2023 to 2033 sets out: i) the total dispensed energy for all of FBC's 50 kW stations, ii) the total metered energy delivered to all of FBC's station sites (including energy not supplied by FBC), and iii) the ratio of item (i) over item (ii). As part of the response please indicate how the values for items (i) and (ii) were determined based on the data provided in Appendix E1.

17.5.1 If the resulting ratio is greater than 1.0 in any year, please explain why this is the case given relationship set out in Figure 3-1.

Response:

The total dispensed energy and metered energy shown in Rows 18 and 19 of the Volume_Rev_O&M tab of Appendices E-1 and E-2 already include FBC's stations located in the service areas of third-party utilities. Please also refer to the responses to BCOAPO IR1 17.2 and 17.3.

17.6 If the response to the preceding questions (i.e. parts (2) and (3)) is yes for the 100 kW stations, please provide a schedule setting out the ratio of energy dispensed versus metered energy for each of the years 2023 through 2033.

17.6.1 Based on the values in Rows 18 and 19 (Appendix E2 (Volume_Rev_O&M Tab)) this ratio will be greater than 1.0 for 2030 and after. Please explain why this can be the case given relationship set out in Figure 3-1.

Response:

Please refer to the response to BCOAPO IR1 17.4.

17.7 If the response to either parts (2) or (3) is no for the 100 kW stations, please provide a schedule that, for each of the years, 2023 to 2033 sets out: i) the total dispensed energy for all of FBC's 100 kW stations, ii) the total metered energy delivered to all of FBC's 100 kW station (including energy not supplied by FBC), and iii) the ratio of item (i) over item (ii). As part of the response please indicate how the values for items (i) and (ii) were determined based on the data provided in Appendix E2.

Response:

Please refer to the response to BCOAPO IR1 17.5.

17.7.1 If the resulting ratio is greater than 1.0 in any year, please explain why this is the case given relationship set out in Figure 3-1.

Response:

Please refer to the response to BCOAPO IR1 17.4.

18.0 Reference: Exhibit B-1, pages 8 & 22-23 and Appendices E1 & E2

Preamble: The Application states:

"FBC's total capital expenditures (before contributions from third parties) for the 42 EV charging stations (as listed in Table 2-1 in Section 2.1 above) are now estimated to be approximately $7.361 million. This includes approximately $6.281 million of actual capital expenditures from 2018 to 2022, approximately $0.580 million of projected capital in 2023, and approximately $0.500 million of forecast capital in 2024. Table 3-3 below provides the actual/forecast capital expenditures from 2018 to 2024." (page 22)

"As discussed in the 2024 Annual Review, the 2023 Projected capital expenditures are primarily due to unbilled charges of approximately $0.363 million from 2022 construction activities related to the planned DCFC stations in Keremeos and Princeton, which were originally identified in the Revised Application approved by Order G-215-21.41 The construction was completed in 2022 but FBC did not receive all invoices for the work until 2023.

The remaining capital expenditures in 2023 Projected and the 2024 Forecast capital expenditures are related to the accessibility improvement work at FBC's existing EV DCFC sites which was started in 2023." (page 23)

18.1 Please confirm that the cost of service analysis does not include any contributions from third parties after 2023.

Response:

Confirmed.

18.2 Appendices E1 and E2 (Calculations-Plant Tab) show 2024 in-service additions for Poles, Towers and Fixtures of $405,000 and $95,000 respectively. Are these all related to accessibility improvement work?

18.2.1 If not, what else are the expenditures for?

Response:

The 2024 in-service additions of $405 thousand and $95 thousand noted in the preamble were related to the accessibility work described in Section 3.2.1.4 of the Application. However, these values have been revised in the Evidentiary Update to $571 thousand and $134 thousand, respectively. The increase is the result of some of the accessibility work that was originally planned for 2023 being delayed to 2024 (the actual capital expenditures for 2023 are less than the 2023 forecast, but the 2024 forecast has increased).

18.3 With respect to Appendix E1, are the gross capital additions shown for 2031 to 2033 (Calculations-Plant Tab, Row 453) all related to the cost of replacing the assets retired in the same year (per Row 472)?

18.3.1 If not, what costs for additions in each year are not associated with these replacements and what are they for?

Response:

The gross capital additions shown in 2031 to 2033 on Row 453 of the Calculation-Plant tab of both Appendix E-1 and Appendix E-2 include the like-for-like replacement costs for those assets retired in the same year from 2031 to 2033, which is shown on Row 472 of the Calculation-Plant tab of both Appendices E-1 and E-2. However, the capital additions from 2031 to 2033 also include the proxies of future sustainment capital for minor repairs or parts replacements (i.e., not part of the station like-for-like replacement) as discussed on page 24 of the Application.

18.4 With respect to Appendix E1, please indicate which stations in Table 2-1 (page 8) are being replaced by the capital additions shown for each of the years 2031 to 2033.

Response:

The capital additions shown from 2031 to 2033 are for like-for-like replacements of stations that were placed in-service from 2021 to 2023 based on the expected 10-year service life of the stations.

As shown in the response to BCOAPO IR1 10.1, the 50 kW stations installed from 2021 to 2023 include Creston, Grand Forks, Keremeos, Naramata, Penticton, and Princeton. All of FBC's 100 kW stations were installed between 2021 and 2022.

FBC notes that these are only forecast replacements based on expected service life. The actual service life of the assets could be longer or shorter.

18.5 With respect to Appendix E2, are the gross capital additions shown for 2031 to 2033 (Calculations-Plant Tab, Row 453) all related to the cost of replacing the assets retired in the same year (per Row 472)?

18.5.1 If not, what costs for additions in each year are not associated with these replacements and what are they for?

Response:

Please refer to the response to BCOAPO IR1 18.3.

18.6 With respect to Appendix E2, please indicate which stations in Table 2-1 (page 8) are being replaced by the capital additions shown for each of the years 2031 to 2033.

Response:

Please refer to the response to BCOAPO IR1 18.4.

19.0 Reference: Exhibit B-1, page 27, Appendix A, page 8 and Appendices E1 and E2

Preamble: Appendix A states:

> "However, for credits that are earned in years 2022 and forward, only the final supplier who owns the electricity going through the final supply equipment10 (i.e., charging equipment) is eligible to claim the carbon credits earned. As such, public charging infrastructure operators such as Tesla will receive the credits rather than FBC, resulting in a reduction in the total number of carbon credits that FBC will be eligible to earn from its EV DCFC service. For clarity, this does not impact the DCFC stations owned by FBC, as listed in Table 2-1. FBC continues to expect to earn carbon credits for the DCFC stations that it owns."

19.1 With respect to Appendix E1-Carbon Credit Tab, please explain the basis for the values used in each of Rows 5, 6, 7 and 8.

Response:

Please refer to Table 1 below which explains the values referenced in the preamble.

FBC notes that since the Application was filed on December 22, 2023, the *Low Carbon Fuels Act* came into effect January 1, 2024,[3] replacing the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel) Requirements) Act.*[4]

The Low Carbon Fuels (General) Regulation[5] and the Low Carbon Fuels (Technical) Regulation[6] under the *Low Carbon Fuels Act* change some parameters used for calculating carbon credits for the BC Low Carbon Fuel Standard (BC-LCFS). Consequently, FBC has filed an Evidentiary Update concurrently with these IR responses which includes changes related to the calculation of the carbon credits. Table 1 below provides the parameters under the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirement) Act*, which was used in the Application filed on December 22, 2023, and the parameters under the *Low Carbon Fuels Act*, which were used in the Evidentiary Update.

[3] https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/renewable-low-carbon-fuels.

[4] https://www.bclaws.gov.bc.ca/civix/document/id/crbc/crbc/394_2008_pit_2023_01_01.

[5] https://www.bclaws.gov.bc.ca/civix/document/id/oic/oic_cur/0699_2023.

[6] https://www.bclaws.gov.bc.ca/civix/document/id/mo/mo/m0437_2023.

Table 1: Carbon Credit Calculation Value References

From Appendix E1 of the Application			From Evidentiary Update		
Carbon Credit Tab Row Reference	**Value**	**Renewable and Low Carbon Fuel Requirements Regulation**	**Carbon Credit Tab Row Reference**	**Updated Values**	**Low Carbon Fuels Act (effective Jan 1, 2024)**
Carbon Intensity of Fuel (gCO2e/MJ)	19.73	Section 11.04, Table Column 2, Electricity	Recorded Carbon Intensity of Fuel - Electricity (gCO2e/MJ)	12.14	Low Carbon Fuels (Technical) Regulation, Schedule 3, Table 2, Item 2, Column 2
			Base Fuel Carbon Intensity - Gasoline (gCO2e/MJ)	93.67	Low Carbon Fuels (Technical) Regulation, Schedule 3, Table 1, Item 2, Column 2
			Reduction - Prescribed for Gasoline (%)	16% to 30%	Low Carbon Fuels (General) Regulation, Section 15 Table, Column 2 (from 2024)
Carbon Intensity Limit of Gasoline	78.20 to 61.70	Section 11.02, Table 1, Column 3 (from 2022)	Target Carbon Intensity - Gasoline	78.68 to 65.57	Calculated using Base Fuel Carbon Intensity x Reduction
Energy Effectiveness Ratio of Gasoline - Electricity	3.4	Section 11.02, Table 2, Column 3, Electricity	Energy Effectiveness Ratio Gasoline - Electricity	3.5	Low Carbon Fuels (Technical) Regulation, Schedule 2, Table 2, Item 2, Column 3, Light duty motor vehicle
Energy Density - Electricity (MJ/kWh)	3.6	Section 11.02, Table 3, Column 2, Electricity	Energy Density for Energy Content - Electricity (MJ/kWh)	3.6	Low Carbon Fuels (Technical) Regulation, Schedule 2, Table 5, Item 3, Column 2

19.2 Please describe, in simple terms, the methodology used to derive the credits (Carbon Credit Tab, Row 16) for the years 2023 through 2033.

Response:

The formula and values used to calculate the carbon credits are defined in section 13(3) of the *Low Carbon Fuel Act*, effective January 1, 2024.[7] Please refer to the response to BCOAPO IR1 19.1 which outlines the differences in values used by FBC:

$$\text{Number} = (\text{TCI} \times \text{EER} - (\text{RCI} + \text{UCI})) \times \frac{\text{EC}}{1{,}000{,}000 \text{ grams}}$$

where:

- TCI = target carbon intensity for the fuel (i.e., set value for base carbon intensity of gasoline x percent prescribed reduction)

[7] https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/22021.

- EER = energy effectiveness ratio of the fuel (i.e., set value for gasoline to electricity)
- RCI = recorded carbon intensity of the fuel (i.e., set value for electricity)
- UCI = carbon intensity attributed to use of the fuel (not applicable to EVs)
- EC = energy content of the fuel (i.e., electricity supplied x set value for energy density of electricity)

19.3 It is noted that kWh used in each year (2023-2033) to determine the carbon credits earned by 50 kW stations appear to only include the electricity supplied by FBC (i.e. Volume_Rev_O&M Tab, Row 19) and not any of the electricity supplied by third parties. If correct, please explain why this is appropriate given the referenced statements in Appendix A.

Response:

Not confirmed. The electricity shown on Row 19 of the Volume_Rev_OM tab of Appendix E-1 includes all electricity, which includes electricity supplied by third-party utilities. As such, the carbon credit calculations include electricity supplied by third-party utilities.

19.4 At page 27 the Application states: "FBC also notes that the November 2023 update of the BC LCFS Credit Market Data shows that the current market price (November 2023) is $496.83 per credit". If there is a more recent market price available, please provide.

Response:

The BC LCFS Credit Market Data[8] shows the average market price for February 2024 is $494.44 per credit.

[8] https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/renewable-low-carbon-fuels/credits-market.

19.5 In order to understand the sensitivity of the calculation of the levelized energy based rate to the assumptions used regarding the price of carbon credits, please provide the cost of service analysis and the resulting levelized energy based rate required for each of the 50 kW and 100 kW stations in order to recover the cost of service over the proposed 10 year period if the market price of carbon credits is 10% less than currently assumed for 2024-2033.

Response:

If the carbon credit prices are 10 percent less than currently assumed for 2024 to 2033 (i.e., currently the credit prices remain at $500 per credit until 2026 and then decline annually by 10 percent), the energy-based rate would be $0.43 per kWh compared to the proposed energy-based rate of $0.39 per kWh (the updated proposed rate based on the Evidentiary Update).

Please also refer to the responses to BCUC IR1 6.1 and RCIA IR1 6.2 which explore other scenarios for forecasting the carbon credit price.

20.0 Reference: Exhibit B-1, pages 8 and 31-32

Preamble: The Application states:

> "FBC's utilization information demonstrates that the price differential did not help to promote more utilization of the lower power level stations. EV charging customers are choosing the higher powered EV DCFC stations for reasons other than price, such as the duration of charging time over the price differential, and it is likely that the 50 kW stations are typically used at times when the 100 kW stations are occupied, or the EV is limited by the charging speed depending on the brand/model of the vehicle." (page 31)

> "Since there is no difference in terms of the energy that the EV charging customers receive from the different power levels, it is reasonable that, regardless of whether a 50 kW or 100 kW station is used, the premium EV model with a bigger battery capacity and capability of faster charging ultimately pays more in total because it consumes more energy (more electricity is dispensed into this EV) during a charging session than a regular EV model with a smaller battery capacity and lower charging speed." (page 32)

20.1 Given the faster charging provided by 100 kW stations is it reasonable to assume that, when there is no price difference ($/kWh), EV drivers with batteries that have the capability for faster charging than that provided by a 50 kW station will choose the 100 kW stations?

20.1.1 If yes, has FBC factored this into its determination of the forecasted utilization rates for 50 kW and 100 kW stations?

20.1.2 If not, why not?

Response:

It is not reasonable to assume that EV drivers with vehicles capable of faster charging rates will always choose 100 kW stations over 50 kW stations as there are other considerations for EV drivers beyond the charging rate of their vehicles that influence station use. Other considerations include the availability of the 100 kW stations or avoiding idling charges by selecting a lower charging rate based on the length of time an EV owner may take in a grocery store. It is less likely these drivers will choose the 100 kW stations if they have to wait to use the 100 kW stations or if they plan to stay at the location for some other reason. Accordingly, these drivers are likely to continue to use the 50 kW stations.

Under FBC's proposed common energy-based rate, drivers of EVs with higher charging rates will continue to pay an amount aligned with their higher energy use, (i.e., more electricity will be

delivered to their vehicle over the same charging time), as shown in the response to BCUC IR1 2.1.

Furthermore, given most charging sessions usually last around 30 minutes, as shown in the response to BCUC IR1 2.1, the proposed common energy-based rate will benefit EVs with smaller batteries as the rate will open up more charging options. EVs with smaller batteries can use the faster charger if it is the only charger available without having to pay a premium. Previously under the time-based rates, if the 50 kW stations were not available, an EV driver with a smaller battery would have to pay a significant premium if they could not wait until a 50 kW station became available, or the driver would have to find another charging station which might not be owned by FBC (thus FBC would lose revenue).

For the reasons above, FBC does not believe there is a need to adjust the utilization rates for EVs capable of faster charging.

20.2 For those eight sites that have both 50 and 100 kW stations (per page 8, Table 2-1), please provide the historical annual utilization rates for: i) the 50 kW stations and ii) the 100 kW stations.

Response:

Please refer to Table 1 below for the requested data.

Table 1: Annual Utilization Rates for Sites with 50 kW and 100 kW Stations

Year	50 kW Stations				100 kW Stations			
	Number of Stations[1]	Maximum Available Minutes[2]	Charging Minutes	Utilization[3] (%)	Number of Stations[1]	Maximum Available Minutes[2]	Charging Minutes	Utilization[3] (%)
2021	6	3,153,600	70,133	2.2%	6	3,153,600	16,539	0.5%
2022	8	4,204,800	79,109	1.9%	8	4,204,800	54,933	1.3%
2023	7	3,679,200	99,815	2.7%	7	3,679,200	119,980	3.3%

Notes to Table:

[1] 2023 excludes Castlegar station, which was out-of-service from May to December 2023

[2] Calculated based on 60 minutes per hour x 24 hours per day x 365 days per year x number of stations

[3] Charging minutes / maximum available minutes

21.0 Reference: Exhibit B-1, pages 19 and 32

Preamble: The Application states:

"In order to develop the growth rates for FBC's owned EV DCFC stations, FBC engaged Dunsky Energy + Climate Advisors (Dunsky) to provide a forecast of light duty EV sales in the FBC service area from 2023 to 2040 based on three growth scenarios, i.e., low growth, medium growth, and high growth, depending on various factors such as public charging infrastructure, existing building charging infrastructure retrofits, availability of vehicle incentives, government policy, and local availability of EV stock." (page 19)

"As discussed in Section 3.2.1.2 above, FBC engaged Dunsky to develop three growth scenarios (i.e., low, medium, and high) for light duty EV sales in the FBC service area from 2023 to 2040.

FBC used the growth rates from the medium growth scenario to forecast its station utilization and to forecast the EV DCFC cost-of-service. FBC considers the low growth and high growth scenarios from the Dunsky analysis to be the lower and upper bounds of forecast EV sales in FBC's service area." (page 32)

21.1 Do all three EV growth scenarios use the same forecast with respect to the total annual sales of light duty vehicles over the 2024-2033 period (i.e., all that varies between the scenarios is the percentage of total annual sales attributable to EVs)?

21.1.1 If yes, please provide the forecast of total annual light duty vehicles sales used and explain how it was derived.

21.1.2 If yes, please explain why in establishing the lower and upper bounds for EV sales in FBC's service area the forecast of total annual light duty vehicle sales was not also varied.

21.1.3 If no, please provide the forecasts of total annual light duty vehicles sales used for each of the three scenarios and explain how they were developed.

Response:

The low, medium and high scenarios for light-duty EVs are based on the same forecast for total annual light-duty vehicle (LDV) sales (including both EV and conventional gas vehicles). The forecast of annual LDVs was developed by Dunsky using historic trends. Table 1 below provides the forecast of LDVs in 2025, 2030, 2035, and 2040 which forms the basis of the low, medium,

and high growth scenarios in Dunsky's report for the number of EV sales in FBC's service area. FBC notes the numbers in Table 1 below are not cumulative.

Table 1: Basis of Annual LDV Sales Forecast for Dunsky's Low, Medium, and High Scenarios

	2025	2030	2035	2040
Annual LDV sales	18,484	19,269	21,934	24,967

Dunsky's forecast assumes that the proportion of EV sales will change between the low, medium and high scenarios, not the total number of LDV sales. This is consistent with the Province's ZEV target which is based on the percentage of ZEV sales. Dunsky used its proprietary Electric Vehicle Adoption (EVA) model based on the total LDV forecast shown in Table 1 above, and accounting for the various factors outlined on page 14 of the Dunsky report, to generate the different EV growth scenarios (i.e., low, medium, and high).

22.0 Reference: Exhibit B-1, page 33 (Table 3-7)

22.1 Please provide a revised version of Table 3-7 that includes rows showing: i) the PV of the revenue requirement under each scenario and ii) the PV of the surplus/deficit as a percentage of the PV of the revenue requirement.

Response:

FBC notes that it has filed an Evidentiary Update to the Application concurrently with these IRs. In the Evidentiary Update, FBC has reduced the proposed energy-based rate from $0.42 per kWh to $0.39 per kWh. FBC is responding to this IR based on the changes in the Evidentiary Update.

Please refer to Table 1 below which shows:

i) the PV of the revenue requirement under each scenario on Line 1; and

ii) the PV of the deficit / surplus as a percentage of the PV of the revenue requirement on Line 4.

Table 1: PV of Revenue Requirement and Surplus / Deficit for the Low and High Growth Scenarios

Line	Particular	Low Growth Scenario	Medium Growth Scenario (As proposed)	High Growth Scenario
1	PV of Revenue Requirement ($000)	6,287	6,474	6,472
2	PV of RS 96 Revenue - 50 kW & 100 kW ($000)	5,647	6,474	7,139
3	PV of Deficit / (Surplus) - 10 years ($000)	639	-	(667)
4	PV of Deficit / (Surplus) of Revenue Requirement - 10 years (%)	10%	0%	-10%

23.0 Reference: Exhibit B-1, page 33 and Appendices E1 & E2

Preamble: The Application states:

> "FBC is proposing an Idling Charge of $0.40 per minute for its DCFC stations. As shown in Section 2.3.3, an Idling Charge of $0.40 per minute after the end of a charging session, with a 5-minute grace period, is consistent with other service providers in BC that have also implemented an Idling Charge."
>
> and
>
> "Currently, FLO has indicated that their system is not capable of accommodating both an energy based rate and a time-based Idling Charge. FLO has communicated to FBC that upgrading their system to accommodate an Idling Charge is part of their development plan but not expected to be implemented until late 2024."

23.1 Has FBC included any revenue from the Idling Charge in its cost of service analysis?

23.1.1 If yes, how much is included annually (2024-2033) and how was the amount determined?

Response:

Please refer to the response to BCUC IR1 10.1.

23.2 Will FBC be responsible for any of the costs FLO will incur to upgrade its system in order to accommodate an Idling Charge?

23.2.1 If yes, what are the costs FBC will be responsible for?

23.2.2 If yes, please indicate where in Appendices E1 and E2 these costs have been accounted for.

Response:

FLO will develop the software required to implement the idling fees. Once the software is developed by FLO, FBC expects there will be costs associated with configuring the software in FBC's stations to support the proposed Idling Charge, which would be specific to FBC. The cost of configuring the software at the stations is not known at this time but FBC expects the costs would be minimal. FBC will report the costs for configuring the software to implement the Idling

Charge (after it is implemented) as part of the information related to FBC's EV DCFC charging service provided in FBC's annual review or revenue requirement process.

24.0 Reference: Exhibit B-1, page 35 and Appendices E1 & E2

Preamble: The Application states:

"There are a number of steps required before FBC can implement the proposed energy-based rate, if approved by the BCUC:

1. As mentioned previously in this Application, FBC applied to Measurement Canada's temporary dispensation program on December 18, 2023. FBC expects to receive approval from Measurement Canada in early 2024.

2. Approval of this Application by the BCUC is required in addition to Measurement Canada's approval, irrespective of which approval is obtained first.

3. Once FBC receives approval from Measurement Canada and the BCUC, FBC will then request FLO to implement changes to FBC's EV DCFC stations and network to support energy-based rates. It is FBC's understanding that FLO will require approximately 4 weeks to implement these changes.

4. While FLO undertakes these changes, FBC will undertake a number of communication activities to advise FBC's EV DCFC station customers that rates will be changing to an energy-based rate. Communication is expected to be completed through multiple channels, including physically at the charging station/site, digitally through social media, and through third-party channels such as Plugshare."

24.1 With respect to Step 3, will FBC be responsible for any of the costs FLO will incur in implementing the changes needed to support energy-based rates?

24.1.1 If yes, what are they?

24.1.2 If yes, please indicate where in Appendices E1 and E2 these costs have been accounted for.

Response:

FBC will be responsible for the implementation costs associated with configuring the software of FBC's stations to support the energy-based rate specific to FBC. Based on communication with FLO, the total costs are expected to be minor at approximately $5 thousand and are part of the forecast 2024 O&M expense in the cost-of-service model for FBC's EV DCFC service.

24.2 With respect to Step 3, will FBC incur any costs with respect to its EV DCFC stations and supporting systems to support the introduction of energy-based rates?

24.2.1 If yes, what are they?

24.2.2 If yes, please indicate where in Appendices E1 and E2 these costs have been accounted for.

Response:

Please refer to the response to BCOAPO IR1 24.1.

24.3 With respect to Step 4, what are the costs FBC will incur regarding these communication activities?

24.3.1 Please indicate where in Appendices E1 and E2 these costs have been accounted for.

Response:

Communication and printing costs associated with communicating the changes to the energy-based rate are not expected to exceed $5 thousand. These costs are part of the forecast 2024 O&M expense for FBC's DCFC service and are included in the cost-of-service model.

24.4 For purposes of its cost of service analysis (Appendices E1 and E2), what has FBC assumed as the effective date for the energy-based rates?

24.4.1 What is the impact on FBC's revenues (as assumed in the cost of service analysis) if the actual effective date is later than that assumed in the analysis (i.e. are the revenues higher or lower under the current time-based rates as compared to the proposed energy-based rates)?

Response:

For the purposes of the cost-of-service analysis in Appendices E-1 and E-2, FBC assumed the effective date of the proposed energy-based rate would be January 1, 2024. FBC expects to be

able to implement energy-based rates at its stations in mid-2024 following temporary dispensation approval from Measurement Canada and BCUC approval of the energy-based rate.

FBC recognizes that there is a difference in the effective date between the cost-of-service analysis used to calculate the energy-based rate and the potential actual effective date of the energy-based rate; however, the impact to the revenue will be minimal given that FBC will continue to charge time-based rates up until the energy-based rate becomes effective. In an extreme example, assuming FBC continues to charge the time-based rates for all of 2024, the impact would be approximately $60 thousand, which would result in a rate impact of 0.013 percent for FBC's other customers when compared to FBC's approved 2024 revenue requirement.[9]

[9] The rate impact of 0.013 percent is calculated by dividing $60 thousand by FBC's 2024 revenue requirement of $457,247 thousand approved under Decision and Order G-340-23 as part of FBC's Annual Review for 2024 Rates.

25.0 Reference: Exhibit B-1, page 36

Preamble: The Application states:

> "Currently, FBC has been providing annual updates to its RS 96 EV DCFC service as part of FBC's annual review process, including discussions on utilization in terms of charging minutes, revenue, carbon credits, and O&M and capital expenditure forecasts. FBC proposes to continue this reporting in its rate setting proceedings.
>
> Furthermore, as discussed in Section 3.2.1.4, FBC will continue with the approach regarding new stations that was directed by Order G-341-21, i.e., if FBC is to introduce additional EV charging stations that were not originally identified in the Revised Application, FBC will include the evaluation of these additional stations as part of FBC's annual review or revenue requirement proceedings. The evaluation will include a review of whether the additional stations meet the criteria to be a prescribed undertaking under the GGRR and assessment of whether the levelized rate under RS 96 EV DCFC service will need to be recalculated as a result of the additional EV charging stations."

25.1 Will the information FBC plans on providing in future annual rate review processes include just historical information and forecasts up to the test year or will it also include forecast information as to whether the currently approved levelized rate is expect to fully recover costs over the 16 year period (2018-2033)?

Response:

FBC intends for the updates related to its EV DCFC service to remain consistent with the information provided in FBC's current annual review applications, as the information provided is comprehensive and includes the historical information as well as the cumulative forecast deficiency or surplus up to the test year. The annual review process also provides an opportunity to assess whether the levelized rate is recovering costs in line with the forecast period. Please also refer to the responses to RCIA IR1 7.1 and 7.2.

25.2 Absent FBC installing any new DCFC stations, does FBC plan on providing the BCUC with any future assessments as to whether the levelized rate needs to be reset so as to fully recover costs over the 16 year period?

25.2.1 If not, why not?

25.2.2 If yes, at what frequency?

Response:

Please refer to the responses to RCIA IR1 7.1 and 7.2.

Attachment 10.2

REFER TO LIVE SPREADSHEET MODELS

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 10.3

REFER TO LIVE SPREADSHEET MODELS

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(accessible by opening the Attachments Tab in Adobe)

Attachment 13.3

REFER TO LIVE SPREADSHEET MODELS

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