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February 25, 2021

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

Attention: Ms. Leigha Worth, Executive Director

Dear Ms. Worth:

Re: FortisBC Inc. (FBC)

Project No. 1598940

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

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

On September 30, 2020, FBC filed the Revised Application referenced above. In accordance with BCUC Order G-33-21 setting out a further Regulatory Timetable for the review of the Revised Application, FBC respectfully submits the attached response to BCOAPO IR No. 2.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

23.0 Reference: Exhibit B-7, BCUC 1.17.1

Preamble: The response states:

> "Keremeos and Princeton will require upgrades to support the installation of a second station at both locations. BC Hydro will be responsible for these costs in recognition of the costs incurred by FBC for provisioning the New Denver and Nakusp locations with capacity to support the addition of second stations at both locations, which supports the "like-for-like" nature of this transaction."

23.1 Will BC Hydro perform this work itself prior to the transfer taking place or will FortisBC undertake the work (after the transfer) and be reimbursed by BC Hydro?

Response:

FBC plans to undertake the work itself with the cost to be recovered from BC Hydro.

24.0 Reference: Exhibit B-7, BCUC 1.17.3

24.1 Are the depreciation rates currently used for the Nakusp and New Denver sites the same?

Response:

Yes, the depreciation rates currently used for the Nakusp and New Denver sites are the same. FBC utilizes group asset accounting for its capital assets, including the EV charging stations; therefore, all assets within the same group have the same depreciation rate. As part of the Application, FBC is seeking approval of a 10 percent depreciation rate for all FBC-owed DCFC stations, including the Nakusp and New Denver EV charging stations.

24.2 Will the depreciation rates currently used for the Nakusp and New Denver sites be used for the Keremeos and Princeton sites after the transfer (i.e., will the exchange result in a change to FortisBC's annual depreciation expense)?

Response:

Confirmed. The depreciation rates used for the Nakusp and New Denver sites will be used for the Keremeos and Princeton sites after the transfer. The exchange of the Nakusp and New Denver sites for the Keremeos and Princeton sites will not result in a change to FBC's annual depreciation expense for its EV charging stations.

25.0 Reference: Exhibit B-7, BCUC 1.17.7

Preamble: The response indicates that the Keremeos and Princeton sites currently use a $/kWh fee structure. The footnote in the response states: "FBC is not aware of any municipal exemption from Measurement Canada standards."

25.1 Does FortisBC have any more insight into how the Keremos and Princeton sites are able to use a $/kWh fee structure?

Response:

Please refer to the response to BCUC IR2 21.1.

25.2 Is there any reason why FortisBC could not continue to use a $/kWh fee structure at these sites if such a fee was approved by the BCUC?

Response:

It would not be reasonable to use metering devices that are not accredited by Measurement Canada for customer billing purposes as it would violate section 9 of the *Electricity and Gas Inspection Act*, R.S.C., 1985, c. E-4. Please also refer to the response to BCUC IR2 21.1 and 21.2.

26.0 Reference: Exhibit B-7, BCUC 1.3.6

Preamble: The response states:

> "FBC considers a charging site to be defined by a contiguous area (e.g. a parking lot) for the provision of EV charging services. These sites may overlap multiple parcels of land, and may include multiple metered services for the different charging services available at the site."

26.1 Is this strictly a FortisBC definition or is there a more formal basis/source for this definition?

Response:

The definition provided in FBC's response to BCUC IR1 3.5 is FBC's definition, which FBC considers a reasonable interpretation of, and consistent with, the definition in section 5 of the GGRR, which is as follows:

> "eligible charging site" means a site where one or more eligible charging stations are located

26.2 If FortisBC were to purchase a parcel of land adjacent to an existing charging site and install one or more charging stations would this be considered a new site or part of the existing site?

Response:

This is a hypothetical situation as FBC has not purchased a parcel of land adjacent to an existing charging site and installed one or more charging stations. Nor has FBC indicated any intention of doing so. As noted in FBC's response to BCSEA IR1 8.1, FBC has entered into 10-year no-cost Licenses of Occupation (LOO) for the individual sites.

However, if FBC were to do so, the two adjacent parcels of land would be considered one physical "site". If a parcel of land adjacent to an existing site is purchased, it would become part of the existing site. There is no basis in the definition of "eligible charging site" in section 5 of the GGRR to limit such a site to the boundaries of a parcel of land.

27.0 Reference: Exhibit B-7, BCUC 1.3.8.1

Exhibit B-9, BCSEA 1.1.1

27.1 It is acknowledged that "FBC does not currently believe there is a need to deploy additional public charging sites or stations beyond those noted in the Revised Application." However, should FortisBC decide otherwise at some future point in time, "what type of documentation (e.g. board minutes), if any, would be necessary to demonstrate that FBC has made the "decision" to construct or purchase an eligible charging station" as requested in BCUC 1.3.8.1?

Response:

FEI's response to BCUC IR1 3.8.1, which carries over to page 14 of Exhibit B-7, includes FBC's response to this portion of the original question, as follows (emphasis added),

> However, if needed, the contract or letter of intent making the financial commitment to purchase, construct or install the required charging station infrastructure referenced in the response to BCUC IR1 3.8 would provide documentation of the date that the decision to construct or purchase an eligible charging station was made.

28.0 Reference: Exhibit B-7, BCUC 1.6.3

Exhibit B-9, BCSEA 1.6.4

28.1 Please confirm that if the rates were designed so as to increase with either inflation or to change annually based on FortisBC's annual general rate increase/decrease the charging rates would be lower in the initial years than those proposed.

28.1.1 If not confirmed, please explain why.

28.1.2 If confirmed, please explain why such an outcome would not be more appropriate - particularly from the perspective of encouraging EV purchases and the use of EV charging stations.

Response:

Confirmed. If FBC were to recalculate the starting rates (i.e. year 1 rate) and add an annual increase based on inflation or FBC's general rate increase/decrease, the charging rates could be lower in the initial years than those proposed. For example, as shown in the Table below, FBC has calculated a rate that escalates with inflation for the 100 kW stations to demonstrate the potential savings in the initial years from an escalating rate. Please refer to the table below for:

- Line 19 – the annual escalated rate, excluding the 15 percent transaction fee, based on forecast annual inflation of 2 percent;
- Line 27 – the annual savings per charging event compared to the proposed levelized rate; and
- Line 28 – the total savings per charging event over 10 years ($2.49).

Similar to the proposed levelized rate, the escalating rates with inflation or FBC's general rate increase would still be designed to recover the full cost of service of the EV charging stations, on a forecast basis, over a 10-year period. This is shown on Line 23 of the Table for the example of an escalating rate with inflation.

As illustrated in the table, there will be savings due to the lower rates in the initial years, e.g. approximately one dollar per charging event. Over a 10-year period, the total savings per charging event would be approximately $2.49 for escalation with inflation. The level of savings would be similar if we escalated the rate by the general rate increase.

FBC considers the savings are small and does not believe the savings will be material enough to encourage EV purchase or the use of the EV charging station. FBC believes that the rate stability and certainty of a levelized rate would benefit users of EV charging stations more than an escalating rate.

Line	Particular	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Year		1	2	3	4	5	6	7	8	9	10
2												
3	PV of Revenue Requirement ($)	100 kW COS Model, Sch 2, Line 6 x 1,000	(18,970)	161,181	119,466	115,750	106,932	96,717	87,856	78,989	70,849	119,179
4	Total PV of Annual Revenue Requirement ($)	Sum of Line 3	937,948									
5												
6	Number of Charging Minutes per Year	100 kW COS Model, Sch 2, Line 10	71,953	104,393	140,305	179,793	222,934	284,211	364,113	463,103	567,923	606,296
7												
8	After- Tax Weighted Average Cost of Capital (WACC)	100 kW COS Model, Sch 2, Line 19	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%	5.76%
9												
10	**Levelized Rates as proposed**											
11	Levelized Rate, **exclude** 15% Transaction Fee ($/min)	100 kW COS Model, Sch 2, Line 14	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
12	Recovery thru levelized rate ($)	Line 11 x Line 6	33,309	48,325	64,950	83,230	103,201	131,567	168,555	214,380	262,903	280,667
13	PV of Recovery thru levelized rate ($)	Line 12 / (1+ Line 8)^Yr	31,494	43,202	54,900	66,518	77,985	94,003	113,868	136,933	158,776	160,268
14	Total PV of Recovery thru levelized rate ($)	Sum of Line 13	937,948									
15	***Deficiency/(Surplus) over 10 years ($)***	**Line 14 - Line 4**	-									
16												
17	**Escalated Rate with Inflation**											
18	Forecast Annual Inflation		2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
19	Escalated Rate by inflation, **excl.** 15% Trans Fee ($/min)	Previous Year Rate x (1 + Line 18)	0.41	0.42	0.43	0.44	0.45	0.45	0.46	0.47	0.48	0.49
20	Recovery thru Escalated Rate with inflation ($)	Line 19 x Line 6	29,625	43,841	60,102	78,557	99,355	129,198	168,830	219,024	273,970	298,331
21	PV of Recovery ($)	Line 20 / (1+ Line 8)^Yr	28,011	39,193	50,802	62,784	75,079	92,310	114,054	139,900	165,460	170,355
22	Total PV of Recovery ($)	Sum of Line 21	937,948									
23	***Deficiency/(Surplus) over 10 years ($)***	**Line 22 - Line 4**	-									
24												
25	Difference btw Levelized and Escalated Rate (**incl.** 15% trans fee)	(Line 11 - Line 19) / (1 - 15%)	0.06	0.05	0.04	0.03	0.02	0.01	(0.00)	(0.01)	(0.02)	(0.03)
26	Average Charging Time for 100 kW Station (min)	BCUC IR1 8.1.1	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
27	Savings per Charge ($)	Line 25 x Line 26	1.05	0.88	0.71	0.54	0.36	0.17	(0.02)	(0.21)	(0.40)	(0.60)
28	**Total Savings per Charge over 10 years ($)**	**Sum of Line 27**	**2.49**									
29												

1

28.2 How much (i.e. percentage-wise) of the overall forecast cost of service for the EV charging stations over the next ten years is based on the cost of electricity (per RS 21)?

Response:

For the period of 2021-2030, the cost of electricity makes up 29 percent of the total cost of service for the 100 kW charging station and 18 percent of the total cost of service for the 50 kW charging station.

28.2.1 Given the uncertainty associated with FBC's future rates, if the EV charging rates were designed so as to change annually based on FortisBC's annual general rate increase/decrease, would they be more likely to recover their required costs, particularly electricity costs, over the next 10 years.

Response:

As shown in response to BCOAPO IR2 28.1, if FBC were to design the EV rates to escalate annually based on inflation or FBC's general rate increase, the rates would still be designed to recover the cost of service of the EV charging stations over a 10-year period on a forecast basis. This is the same as the proposed levelized rates. As such, on a forecast basis, an annual escalating rate with inflation or FBC's general rate increase would not be more or less likely to recover the required cost of service of the stations, including the electricity costs.

It is possible that FBC could design the EV rates based on current costs instead of based on a forecast over a 10-year period, and escalate the rates annually with FBC's general rate change. However, FBC cannot confirm if the EV rates designed in this approach would lead to a more accurate recovery of the actual cost of service of the EV stations. On an actual basis, the annual cost of service of the EV charging stations could change as a result of a number of factors, including inflation on O&M, general rate increase to the electricity costs under RS 21, changes in property tax, changes in FBC's capital structure, etc. The annual changes to the cost of service would not be due to FBC's general rate increase alone. Further, FBC's general rate increase is based on FBC's overall revenue requirement, not just for the EV charging stations. Therefore, there is no direct or one-to-one connection between the cost of service of EV stations and FBC's general rate increase. In addition, designing EV rates that increase annually with FBC's general rate increase will result in greater rate variability, thus losing the

benefit of rate stability for EV charging without adding more certainty in recovering the actual cost of service of the EV Stations.

As discussed in BCUC IR1 6.7, 6.8, and 6.9, FBC will review RS 96 as part of its annual review and periodically as part of its Cost of Service Analysis (COSA), which could include revision to the rates as well as the rate structure if there is material deviations from the forecast revenues, and costs.

29.0 Reference: Exhibit B-7, BCUC 1.6.6

29.1 Would charging rates that were designed so as to increase with either inflation or to change annually based on FortisBC's annual general rate increase/decrease more closely recover each year's cost of service from EV charging station users than the proposed levelized rates?

Response:

Please refer to the response to BCOAPO IR2 28.2.1.

30.0 Reference: Exhibit B-7, BCUC 1.6.7, 1.6.8 and 1.6.9

Preamble: The response to BCUC 1.6.9 states that:

> "FBC would consider initiating a review of RS 96 in three scenarios:
>
> 1. If there were any material deviations from forecast revenues from existing stations;
>
> 2. If there were any material deviations in the cost of new stations as compared to existing stations; or
>
> 3. A new rate structure is identified that is preferable to the current RS 96 structure and that is technically possible to implement and legally permissible (e.g. rates based partly on charging speed or kWh)."

30.1 With respect to items 1 and 2, please explain what FortisBC would consider a "material deviation".

Response:

FBC would consider a "material deviation" to be a deviation in underlying costs or revenues which would cause the levelized RS 96 rate to change by more than 10 percent.

30.2 With respect to item 2, why is it limited to "new" stations? Given that the annual cost for a station includes the cost of electricity, could there not be instances where the cost of electricity for existing stations could vary materially from that used to set the levelized rates?

30.2.1 If yes, would FBC consider initiating a review under such circumstances?

Response:

Yes, FBC would consider initiating a review if there were material deviations, as described in the response to BCUC IR2 30.1, in the cost of new or existing stations.

30.3 Would a new rate structure (per item 3) only be considered as part of a COSA proceeding (per BCUC 1.6.7)?

Response:

If FBC were to propose a different structure for the EV rate, FBC would file a separate application to the BCUC requesting approval of the change. FBC expects that the review of RS 96 as part of a COSA would be limited to evaluating whether the current rate structure led to an adequate recovery of costs for the test period.

31.0 Reference: Exhibit B-7, BCUC 1.8.4

Exhibit B-8-1, BCOAPO 1.12.5

31.1 With respect to BCUC 1.8.4, please provide a schedule that sets out the values used per steps (a) and (b) of the methodology and the resulting calculation as to EV growth over the period concerned.

Response:

The table below outlines the values and methodology that FBC used to calculate the EV growth rates within its electric service territory.

Year	*ZEV Act* Sales Targets A	Estimated Sales Targets Required to meet *ZEV Act* Targets B	Estimated Total Light Duty Vehicle Sales C	Projected EV Sales D = (A or B) x C	Historical EV Registrations E	Projected EV Registrations F = (E or F) from previous year + D	Projected EV Growth Rate G = F / (E or F) from previous year
2018	-	-	-	-	350	-	-
2019	-	-	-	-	669	-	-
2020	-	6.43%	15,553	1000	-	1669	2.49
2021	-	7.14%	15,797	1128	-	2797	1.68
2022	-	7.86%	16,043	1261	-	4058	1.45
2023	-	8.57%	16,288	1396	-	5454	1.34
2024	-	9.29%	16,530	1535	-	6989	1.28
2025	10%	-	16,770	1677	-	8666	1.24
2026	-	14%	17,012	2382	-	11,048	1.27
2027	-	18%	17,254	3106	-	14,154	1.28
2028	-	22%	17,490	3848	-	18,002	1.27
2029	-	26%	17,720	4607	-	22,609	1.26
2030	30%	-	17,944	5383	-	27,992	1.24

31.2 Please provide a schedule that sets out how the number of charging events per charging station per day for the 50 kW and 100 kW stations (per BCOAPO 1.12.5) were calculated using the forecast EV growth rate.

31.2.1 With respect to BCOAPO 1.12.5 please explain why the charging events per station per day are the same for both 50 kW and 100 kW stations in all years except 2021 and 2028-2030.

Response:

The tables below outline the values and methodology that FBC used to calculate the number of charging events per station per day for the 50 kW and 100 kW stations (per BCOAPO IR1 12.5).

For this analysis, FBC applied the relationship between EV growth rates and charging growth rates on a *per site* basis. As a result, projected EV growth rates were first applied at the site level and then converted to a per station value.

50 kW Stations:

Year	Projected EV Growth Rate A (from BCOAPO IR2 31.1)	Historical Charging Events per Site per Day B	Projected Charging Events per Site per Day C = A x (B or C) from previous year	Average Stations per Site, Across All Sites[1] D	Historical Charging Events per Station per Day E = B / D	Projected Charging Events per Station per Day F = C / D
2018	-	0.28	-	1.00	0.28	-
2019	-	0.78	-	1.09	0.71	-
2020	2.49	-	1.95	1.25	-	1.56
2021	1.68	-	3.26	1.60	-	2.04
2022	1.45	-	4.73	1.74	-	2.72
2023	1.34	-	6.36	1.74	-	3.66
2024	1.28	-	8.15	1.74	-	4.69
2025	1.24	-	10.10	1.74	-	5.81
2026	1.27	-	12.88	1.74	-	7.41
2027	1.28	-	16.50	1.74	-	9.49
2028	1.27	-	20.99	1.74	-	11.30[2]
2029	1.26	-	26.36	1.74	-	11.90[2]
2030	1.24	-	32.64	1.74	-	12.00[2]

Notes:

1. Average Stations per Site, Across All Sites takes into account the number of stations per site (one or two) as well as the portion of the year that a second station was present.
2. Projected Charging Events per Station per Day gradually "slow down" as they approach/reach a maximum of 12 events. FBC assumed this was the maximum reasonable number of charging events per day given a 30-minute average charge session at the 50 kW stations.

100 kW Stations:

Year	Projected EV Growth Rate A (from BCOAPO IR2 31.1)	Projected Charging Events per Site per Day B = A x B from previous year	Average Stations per Site, Across All Sites C	Projected Charging Events per Station per Day D = B / C
2021	1.68	3.01[1]	1.60	1.88
2022	1.45	4.73	1.74	2.72
2023	1.34	6.36	1.74	3.66
2024	1.28	8.15	1.74	4.69
2025	1.24	10.10	1.74	5.81
2026	1.27	12.88	1.74	7.41
2027	1.28	16.50	1.74	9.49
2028	1.27	20.99	1.74	12.07
2029	1.26	26.36	1.74	14.80[2]
2030	1.24	32.64	1.74	15.80[2]

Notes:

1. For the 100 kW stations, FBC assumed the same Projected Charging Events per Site per Day for 2021 as in the 50 kW Station analysis, less a reduction based on the assumption that 100 kW capable vehicles will take till 2022 to achieve market penetration.
2. Projected Charging Events per Station per Day gradually "slow down" as they approach/reach a maximum of 16 events. FBC assumed this was the maximum reasonable number of charge events per day given a 17.5-minute average charge session.

In most years, the charging events per station per day are assumed to be the same for both the 50 kW and 100 kW stations. This is based on the assumption that once enough 100 kW capable vehicles are on the road, users will visit the 50 kW and 100 kW stations at the same frequency.

The slight difference in projected events for 2021 reflects an assumed "ramp up" period for 100 kW capable vehicles to achieve market penetration.

The differences in projected events for 2028 – 2030 are described in the notes for the tables above. FBC assumed a maximum of 12 charge events per station per day for the 50 kW stations based on an average charge event of 30 minutes, and a maximum of 16 charge events per station per day for the 100 kW stations based on an average charge event of 17.5 minutes (i.e., the shorter the average event, the higher the number of total events achievable per day).

32.0 Reference: Exhibit B-7. BCUC 1.9.1 and 1.9.2

32.1 What is the reason for the variation in the price of carbon credits in each quarter (per BCUC .9.1)?

Response:

The market summary report simply reflects the average cost of carbon credits market participants were prepared to pay during the quarterly periods noted. FBC is unable to speculate further as to how market participants determine an acceptable quarterly market price for purchasing credits to achieve compliance with the RLCFRR.

33.0 Reference: Exhibit B-7, BCUC 1.9.6

33.1 Will FBC have to pay any administrative/transaction charge to FEI if FEI is the party actually selling the credits?

Response:

As discussed in the responses to BCUC IR2 22.6 and 22.7, FBC plans to report and sell credits on its own behalf going forward. The administrative costs for reporting and selling carbon credits are captured as part of the costs for the 0.5 FTE already included in the cost of service analysis.

34.0 Reference: Exhibit B-7, BCUC 1.15.2.1

Exhibit B-10, CEC 1.12.1

Exhibit B-5, page 12 and Appendix E, Schedule 1

Preamble: CEC 1.12.1 Response states:

"FBC used a 13-year analysis for the 50 kW service rate calculation because of the capital additions in 2018, 2019 and 2020 that had to be reflected into the 50 kW rate, which set the starting year for the financial analysis at 2018."

34.1 Given that the derivation of the 50 kW charging rate takes into account the costs and revenues for 2018-2020, why is it necessary to establish how and when to recover from ratepayers the actual costs (less revenues) associated with EV charging stations from 2018 to December 31, 2020 (as discussed in BCUC 1.15.2.1)? Wouldn't this lead to a double recovery?

Response:

No, this would not lead to a double recovery.

As discussed in the response to BCUC IR1 15.2, the 50 kW EV stations 2018 – 2020 actual costs less revenues (2018 – 2020 Activity) is projected to be in a net revenue surplus position. If the 2018 – 2020 Activity were not flowed through to all other customers, these customers would miss out on this 2018 – 2020 net benefit (revenue surplus), but would still bear future periods where costs exceed revenues.

Notwithstanding the net revenue surplus position, RS 96 charging rates are designed to be levelized over a 13-year period so there may be periods of time where FBC's other customers benefit from EV charging revenue surpluses or bear costs from EV revenue deficiencies. As such, FBC believes it is fair for customers to benefit from the surplus from the 2018-2020 Activity of the 50 kW stations which have been held outside of rate base. FBC's proposed mechanism uses the currently approved Flow-Through deferral account to do this.

35.0 Reference: Exhibit B-7, BCUC 1.7.8 and 1.8.1

Exhibit B-8, BCOAPO 1.11.2, 1.11.3, 1.11.4, 1.11.5 and 1.11.6

Preamble: The responses to BCOAPO 1.11.2 and 1.11.3 explain that there is only one meter per site and that it meters usage by both the charging stations and by ancillary station equipment/display lighting.

The responses to BCOAPO 1.11.4 through 1.11.6 indicate that the kWh usage values provided in the respective responses include only the energy delivered to vehicles during charging events, not the entire energy usage at site.

BCUC 1.8.1 indicates that the electric consumption of 20 kWh per charge event based on average historical kWh volumes per charge session from FBC's experience of 50 kW stations.

BCUC 1.7.8 confirms that the rate at which an EV battery charges is non-linear.

BCOAPO 1.11.2 indicates that the 20 kWh per charging event is for the charging station and does not include usage by ancillary station equipment/display lighting.

35.1 For purposes of the Tables provided in response to BCOAPO 1.11.4 through 1.11.6, please explain how the kWh usage for just the charging stations (i.e., excluding ancillary station equipment/display lighting usage) was determined if there is only a single meter per site that records total usage (i.e., both charging station usage and ancillary station equipment/display lighting usage) and the kWh used by the stations for charging cannot be directly calculated based on the number of charging minutes (per BCUC 1.7.8).

Response:

The kWh usage data provided in response to BCOAPO IR1 11.4 through 11.6 was determined from the internal metering of the DCFC stations and associated reporting software. Although this metering is not approved for billing customers on an energy basis, it is reasonable to use this information for providing the kWh deliveries as requested in BCOAPO IR1 11.4 through 11.6. As noted in the response to BCOAPO IR1 11.2, the costs associated with ancillary kWh consumption are included in the COS model as determined by the FBC revenue meter for the charging site.

36.0 Reference: Exhibit B-8, BCOAPO 1.11.1, 1.11.2, 1.11.4, 1.11.5 and 1.11.6

Exhibit B-10, CEC 1.11.6

Exhibit B-5, page 13

Preamble: The response to CEC 1.11.6 indicates that between January 2018 and October 2020 the actual charges for a charging event ranged from $0.06 to $46.88.

Exhibit B-5 states that in establishing the station usage assumptions: "Data from 2020 was not included due to the impact of COVID-19 on EV charging patterns (i.e. fewer customers driving resulting in lower-than-anticipated DCFC usage compared to historical trends)."

36.1 Please provide the values for the lowest, highest, median and average charging minutes per session underpinning the response to CEC 1.11.6.

Response:

The table below provides the minimum, median, average and maximum charging minutes per session corresponding with the fees given in the response to CEC IR1 11.6.

	Minimum	Median	Average (mean)	Maximum
Fees (from the Response to CEC IR1 11.6)	$0.06	$8.15	$9.56	$46.88
Charging minutes (h:mm)	0:00	0:27	0:31	2:36

Notes:

- The DCFC stations round down to the nearest whole minute in their reporting, but charge fees based on the actual portion of the last minute used, which is why a session of 0:00 duration can result in a fee of $0.06 and why there may be other seemingly inconsistent relationships between charging minutes and charging fees.
- FBC's response to CEC IR1 11.6 indicated that the values were from January 2018 – October 2020; however, upon review it was discovered that the values were actually from January 2018 – November 10, 2020. The results given here are also from January 2018 – November 10, 2020 to match.

36.2 Please provide a revised response to CEC 1.11.6 based just on data for 2018 and 2019. As part of the response please also provide values for the lowest, highest, median and average charging minutes per session underpinning the response

Response:

The table below provides the minimum, median, average and maximum charging fees and charging minutes for 2018 and 2019:

	Minimum	Median	Average (mean)	Maximum
Charging fees	$0.12	$7.67	$9.02	$36.49
Charging minutes (h:mm)	0:00	0:25	0:29	2:01

Note that the DCFC stations round down to the nearest whole minute in their reporting, but charge fees based on the actual portion of the last minute used, which is why a session of 0:00 duration can result in a fee of $0.12 and why there may be other seemingly inconsistent relationships between charging minutes and charging fees.

36.3 In responding to BCOAPO 1.11.4 through 1.11.6 FortisBC has claimed confidentiality for all of the data requested except: i) the names of the sites, ii) the capacity of the stations at each site and iii) the numbers days each site was in operation. BCOAPO appreciates that the details for the individual sites could be considered confidential. However, given the response provided to CEC 1.11.6, BCOAPO would request that FortisBC provide the following information for each of 2018, 2019 and 2020 or provide a detailed explanation regarding the need for its confidentiality:

36.3.1 The titles for each of the columns for which the data requested is considered confidential. Further, can FortisBC reconcile the fact that there are only 7 columns with redacted information but the original question asked for 9 pieces of information which were not published.

Response:

The titles of the requested columns were inadvertently omitted in the original responses and are provided below.

Item eight (viii) and ten (x) were provided in the total row of column seven (vii) and nine (ix), respectively.

# of days in service (i)	kW rating (i)	# of charging events (ii)	# of charging minutes (iii)	Average # of charging minutes per event (iv)	Total kWh (v)	Average max. monthly demand (vi)	Average kWh per charging event (vii)	# of events per day at site (ix)

36.3.2 The annual total (across all sites) for the number of charging events, the overall average number of charging events per day (i.e., based on the overall average of the averages for each site), and the minimum and maximum average number of events per site.

Response:

The following information is summarized from the information provided in the responses to BCOAPO IR1 11.4 to 11.6 filed confidentially.

	Annual total charging events (all sites)	Average number of charging events per day (all sites)	Min average number of events per day (per site)	Max average number of events per day (per site)
2018	491	0.3	0.2	0.4
2019	1,636	0.7	0.1	1.1
2020	2,883	0.5	0.2	2.9

36.3.3 The median and average number of charging minutes per event (i.e., based on the overall median/average of the averages for each site), along with the minimum and maximum average site values.

Response:

The following information is summarized from the information provided in the responses to BCOAPO IR1 11.4 to 11.6 filed confidentially.

	Median average charging minutes per event (all sites)	Average charging minutes per event (all sites)	Min average site charging minutes (lowest average of all sites)	Max average site charging minutes (highest average of all sites)
2018	27.0	28.1	22.9	34.7
2019	28.3	30.2	25.4	60.3
2020	33.1	32.6	20.8	42.1

36.3.4 The median and average monthly demands across all sites (i.e., based on the overall median/average of the averages for each site), along with the minimum and maximum averages per site.

Response:

The following information is summarized from the information provided in the responses to BCOAPO IR1 11.4 to 11.6 filed confidentially.

	Median monthly billed kVA demand (all sites)	Average monthly billed kVA demand (all sites)	Min billed kVA average monthly site demand (per site)	Max billed kVA average monthly site demand (per site)
2018	44	44	42	47
2019	52	52	48	63
2020	54	55	48	63

36.3.5 The median and average kWh per charging event (i.e., based on the overall median/average of the averages for each site), along with the minimum and maximum averages per site.

Response:

The following information is summarized from the information provided in the responses to BCOAPO IR1 11.4 to 11.6 filed confidentially.

	Median kWh per charging event (all sites)	Average kWh per charging event (all sites)	Minsite average kWh (lowest average of all sites)	Max site average kWh (highest average of all sites)
2018	13	15	12	19
2019	16	17	14	31
2020	19	19	12	23

36.3.6 The median average number of charging events per day (i.e., based on the overall median/average of the averages for each site), along with the minimum and maximum averages per site

Response:

The following information is summarized from the information provided in the responses to BCOAPO IR1 11.4 to 11.6 filed confidentially.

	Median average number of charging events per day (all sites)	Min daily site average charging events (lowest average of all sites)	Max daily site average charging events (highest average of all sites)
2018	0.3	0.2	0.4
2019	0.6	0.1	1.1
2020	0.3	0.2	2.9

37.0 Reference: Exhibit B-8-1, BCOAPO 1.12.5 and 1.19.2

Exhibit B-7, BCUC 1.8.4

Preamble: The following table has been constructed from the data provided in the responses to BCOAPO 1.12.5 and 1.19.2

		50 kW Station					
		# Events / Station / Day	Number of Stations	Number of Days	Total Number of 50 kW Events	Total Electricity Use (kWh)	Average Use / Event
		A	B	C	D	E	F
	2021	2.04	34	365.25	25,333.7	723,951	28.58
	2024	4.69	34	365.25	58,242.8	1,381,446	23.72
	2027	9.49	34	365.25	117,851.6	2,574,458	21.84
	2030	12	34	365.25	149,022.0	2,801,086	18.80
	Sources:	1) A, B & C- Exhibit B-8-1, BCOAPO 1.12.5 (i)					
		2) D = A x B x C					
		3) E - Exhibit B-8-1, BCOAPO 1.19.2 (line 43)					
		4) F = E/D					

37.1 Please confirm that the data set out in the above table is correct.

37.1.1 If not, please provide a corrected version and the reasons for any changes.

Response:

Confirmed, the data set out in the above table is correct.

37.2 Please confirm that the total kWh values provided in the response to BCOAPO 1.19.2 (line 43) are for total site usage including ancillary station equipment/display lighting usage.

37.2.1 If not confirmed, does the calculation of the cost of electricity need to be revised to include this usage?

Response:

Confirmed.

37.3 With respect to BCOAPO 1.19.2, please confirm that the electricity usage values (line 43) for 2018 and 2019 are actual values.

Response:

The electricity consumption values (line 43 in Response BCOAPO IR1 19.2) are not actual values, but an approximation of 2018 and 2019 electricity usage. The inputs used to make the approximation were taken from the actual 2018-2020 average electricity usage from the stations.

FBC used the following inputs to calculate the 2018 and 2019 electricity usage:

- Average electricity used per charging event, based on the average historical (2018-2020) kWh volumes per charge session;
- Average daily electricity used by the ancillary equipment, based on the historical use (2018-2020); AND
- Number of charging events per station per day for 2018 and 2019 based on the average usage in 2018 and 2019 respectively.

37.4 With respect to BCOAPO 1.19.2, please explain how the total electricity use for each of the years 2020 through to 2030 was determined. In doing so, please address the following:

Response:

The total annual electricity use for each of the years 2020 through to 2030 was determined by adding the electricity used in charging events and the electricity used by the ancillary equipment. The electricity used in charging events was calculated by multiplying the projected number of charging events per year by the average electricity used per event, as established by the 2018-2020 data. The annual electricity used by the ancillary equipment was calculated by taking the average daily electricity use of the ancillary equipment (as established by the 2018-2020 data), then multiplying by 365.25 days and by the number of stations in each year.

37.4.1 How was the usage for ancillary station equipment/display lighting was established and accounted for?

Response:

Ancillary usage was established by comparing the historical annual consumption for 2018-2020 as measured by the FBC revenue meter for the DCFC sites against the annual kWh related to charging sessions during those years as measured by the internal metering of the DCFC stations. The average of the stations daily electricity used for the ancillary equipment (as established by the 2018-2020 data), was multiplied by the number of stations, multiplied by 365.25 days for the analysis period of the COS models.

37.4.2 Given that the assumed charging station usage per event is 20 kWh (per Exhibit B-5, page 13 and BCOAPO 1.11.2), why are the average kWh values per event less than 20 kWh by 2030? One would have expected the values to all be more than 20 kWh in order to account for the incremental usage due to for ancillary station equipment/display lighting.

Response:

FBC reviewed the total electricity calculation and found that the 2027-2030 years were not using the correct average energy per charging event amount of 20 kWh. This calculation error only occurred in the 50 kW model.

Please refer to the attachments included in BCUC IR2 20.5 for the updated 50 kW and 100 kW electricity schedules. In these schedules, FBC has also updated the 2021 RS21 electricity rate to reflect the general rate increase effective January 1, 2021 which was approved on a permanent basis by Order G-42-21. The approved rate increase impacts both the 50 kW and 100 kW electricity cost schedules.

37.5 Please provide similar information to that requested in BCOAPO 1.19.2 but for the 100 kW stations and the resulting kWh per charging event for each year.

Response:

Please refer to the response to BCOAPO IR2 37.4.2 for the updated 100 kW electricity cost schedule.

The table below shows the resulting kWh per charging event for each year, for the 100 kW stations:

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Energy Consumption per Charging Event (kWh/event)	29.4	26.4	24.8	23.7	23.0	22.4	21.8	21.5	21.2	21.1

The kWh per charging event decreases in the periods 2021 through 2030 primarily due to the energy used to power the ancillary equipment being spread out over more charging events.

37.6 Do any of the responses to the preceding questions result in the need to revise the cost of electricity as used in Exhibit B-5, Appendix E, page Schedules 1 and 2 (for 50 kW and 100 kW stations respectively)?

Response:

Yes. Please refer to the responses to BCUC IR2 20.5 and 20.6 for updated electricity cost and financial schedules, respectively.

38.0 Reference: Exhibit B-8-1, BCOAPO 1.15.5.1 and 1.15.5.2
Exhibit B-5, Appendix E, Schedule 1 (line 23) and
Schedule 2 (line 23)

Preamble: The response to BCOAPO 1.15.5.1 & 1.15.5.2 states:

"FBC did not include an additional allocation for administrative and general costs in O&M in Appendix E because these expenses are already included elsewhere in other cost line items, including the costs related to the 0.5 FTE which will directly supporting the FBC charging program. FBC allocates administrative and general costs when it determines the electricity rates for RS 21, which is reflected in the proposed EV rates through the cost of electricity. The increase in power purchases from the EV stations is sufficient to cover the portion of administrative and general costs related to the EV network management services being provided by FBC".

The response to BCOAPO 1.15.4 identifies four categories of non-labour O&M: i) Maintenance, ii) Travel, iii) Repairs (outside of warranty) and iv) FBC Network Management Expenses.

38.1 Do the labour costs reported in Appendix E (per line23 of Schedules 1 and 2) represent the cost of the 0.5 FTE? If not, please explain what else is included in/excluded from the reported labour costs.

Response:

Confirmed, the labour costs reported in Appendix E, Schedule 1, Line 23 represent the cost of the 0.5 FTE.

38.1.1 Please provide the derivation of the cost for the 0.5 FTE included in the cost of service analysis in sufficient detail to demonstrate that it includes an allocation of FBC's Administrative and General costs.

Response:

The labour cost only includes the loaded salary for 0.5 FTE. Part of this person's time will be spent on administration and general activities, but there is no further allocation of FBC's administrative and general costs to this line item. The 0.5 FTE will perform administrative and general activities such as assisting accounting and regulatory with any reporting requirements

for EV stations as well as the administrative tasks associated with validating and selling FBC carbon credits.

38.2 BCOAPO's reading of the response to BCOAPO 1.15.5.1 & 1.15.5.2 as quoted in the Preamble is that the A&G costs included in the RS 21 rates are sufficient to cover not only the A&G costs associated with RS 21 service but the A&G costs attributable to the costs for FBC's Network Management Services (as set out in BCOAPO 1.15.4). Please confirm if BCOAPO has interpreted the response correctly.

38.2.1 If yes, please explain why this is the case when the cost of FBC's Network Management Services is incremental to the cost for electricity service to the charging sites.

38.2.2 If no, where and how are the A&G costs attributable to the FBC's Network Management Services included in the cost of service analysis?

Response:

The response to BCOAPO IR 1.15.5 should have read in part, "The ~~increase in power purchases~~ ***revenue*** from the EV stations is sufficient to cover the portion of administrative and general costs related to the EV network management services being provided by FBC."

The amount included in the model for FBC's Network Management Services is intended to cover all the costs of administering the program such as those described in the response to BCUC IR 1.10.1. While it is the case that if RS 96 were developed within the Company's standard COSA it would have received an allocation for A&G expenses (which would then not include the RS 21 amount currently in the rate), it would also not likely receive a direct allocation for some of the costs for the Network Management Services currently included. Within the context of a COSA, some of the Network Management Services may themselves be considered A&G costs. It is FBC's view that the revenue from RS 96 will be sufficient to recover the cost of service including any A&G costs, over and above those included in the RS 21 recovery, that may otherwise be allocated during a COSA. The appropriate time to review this assumption is during a COSA conducted periodically by FBC.

38.3 The response does not address where/how A&G costs attributable to Maintenance, Travel and Repairs (outside of warranty) have been incorporated into the cost of service analysis. Please explain.

Response:

Please refer to the response to BCOAPO IR 2.38.2. The same considerations apply for Maintenance, Travel and Repairs.