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July 22, 2021

Sent via email/eFile

**BC HYDRO PUBLIC EV FAST CHARGING RATE APPLICATION  
EXHIBIT A-17**

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**Re: British Columbia Hydro and Power Authority – Public Electric Vehicle Fast Charging Rate Application – Project No. 1599190 – Follow-Up Questions on Suncor’s Evidence in Advance of the Streamlined Review Process**

Dear Ms. Oleniuk,

Further to the above-noted matter, enclosed please find British Columbia Utilities Commission Follow-Up Questions on Suncor’s Evidence in Advance of the Streamlined Review Process (SRP) for response at the SRP.

Sincerely,

*Original signed by Marija Tresoglavic for:*

Patrick Wruck  
Commission Secretary

/jo  
Enclosure



British Columbia Hydro and Power Authority  
Public Electric Vehicle Fast Charging Service Rates Application

**FOLLOW-UP QUESTIONS ON SUNCOR’S EVIDENCE IN ADVANCE OF THE STREAMLINED REVIEW PROCESS**

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**A. GENERAL**

**17.0 Reference: Exhibit C20-10, BCUC IR 1.3, IR 13.1 and IR 16.1  
Existing and planned Petro-Canada stations**

In response to British Columbia Utilities Commission (BCUC) IR 1.3 to Suncor Energy Inc. (Suncor), Suncor provided the list of its current electric vehicle (EV) fast charging sites.

In response to BCUC IR 13.1, Suncor stated: “Though Suncor has only operated a single 50kW unit since April 2021, ...”

In response to BCUC IR 16.1, Suncor stated:

As outlined in Suncor’s evidence relating to charging curves (Exhibit C20-4), it is our view that 50kW is already outdated and insufficient for on-the-go charging meant to encourage EV adoption to meet BC’s climate goals. We believe that the on-road fleet will have a greater percentage of >50kW capable vehicles compared to all previously sold and on-road <50kW capable vehicles by late 2021 early 2022 based on model availability and increased sales quarter-over-quarter. [Emphasis added]

- 17.1 Please clarify why Suncor has added a 50-kW unit as recently as April 2021 to its EV fast charging infrastructure despite its view that 50-kW stations are already outdated.
- 17.2 Is Suncor planning to expand its EV fast charging infrastructure in BC? If yes, please describe Suncor’s plans at a high level (timeframe, number of additional sites, chargers, maximum power level). If not, please explain why not.

**18.0 Reference: Exhibit C20-4, p. 7; Exhibit C20-10, BCUC IR 1.3, IR 7.1 and IR 7.3; Exhibit C20-6, StrataPlanVR2673 IR 4 and 12  
Utilization rate at the Petro-Canada Langley stations**

On page 7 of Exhibit C20-4, Suncor states that “the information and data collected from the Langley Station is a fair representation of a typical Suncor EV charging site located in BC.”

In response to BCUC IR 1.3, Suncor stated that “[t]he Langley site was selected because it represents an above average utilization location (based on Plugshare check-in’s, revenue collected, etc.), and thus presents a reasonably optimistic perspective for utilization.”

18.1 On the one hand, Suncor states that the Langley station is representative of a typical Suncor EV charging site in BC and, on the other hand, Suncor states that its utilization rate is above average and presents a reasonably optimistic perspective for utilization. Please reconcile the two statements.

In response to BCUC IR 7.1, Suncor stated:

Suncor does not believe that BC Hydro’s 100kW stations should anticipate higher utilization rates than their current information supporting the utilization rates of a 50kW charger at 3.7%. This is not supported by the evidence Suncor provided for its 350kW chargers, which are priced at the same rate (<3% utilization). [Emphasis added]

In response to BCUC IR 7.3, Suncor stated:

As noted in Suncor’s evidence (Exhibit C20-4) regarding our 350kW chargers, a range of 3-5% would be more applicable. [Emphasis added]

In response to StrataPlanVR2673 IR 4, Suncor stated:

Our station utilization rates vary between 2-6% and at those levels demand charges continue to represent 80% or greater of our utility related expenses. [Emphasis added]

In response to StrataPlanVR2673 IR 12, Suncor stated:

It is reasonable to say that demand charges are a huge problem until exponentially higher utilization is reached.

18.2 If the Langley station utilization rate is optimistic, please indicate what utilization rate would be representative of the Petro-Canada stations today. Would it be less than 3 percent on average, as stated in response to BCUC IR 7.1 or between 3 to 5 percent as stated in response to BCUC IR 7.3 or between 2 and 6 percent as stated in response to StrataPlanVR2673 IR 4? Please provide supporting evidence for the recommended utilization rate.

18.3 Please clarify where in Exhibit C20-4 does Suncor show that its 350 kW chargers have a utilization rate of 3 to 5 percent.

18.4 Is there a utilization level at which point Suncor would view its share of demand charges (relative to utility invoice) as being financially sustainable?

18.4.1 Please define an “exponentially higher” utilization rate.

**19.0 Reference: Exhibit C20-4, p. 5; Exhibit C20-8, BCOAPO IR 4.2**  
**On-the-go charging vs. home/work charging**

On page 5 of its evidence, Suncor states:

According to Fleet Carma’s nation-wide EV charging study, 72% of all EV charging takes place either at home or the workplace, of which BC Hydro is already the sole supplier due to its natural monopoly.<sup>[footnote omitted]</sup> The remaining 28% of on-the-go fast charging is essential to eliminate range anxiety for EV drivers and is critical to accelerating EV adoption at levels needed to meet the goals of BC’s *Zero Emission Vehicle Act*<sup>[footnote omitted]</sup> to achieve 10% of light-duty vehicle sales by 2025, 30% by 2030 and 100% by 2040. Given the relatively low percentage of on-the-go charging that will occur, relative to its high importance when considering EV adoption, it is important to support all organizations that are willing to invest in solving the infrastructure issue in BC, and not disproportionately benefit BC Hydro by allowing cross-subsidization, particularly given that it already has the exclusive domain of at-home/at-work charging. [emphasis added]

In response to British Columbia Old Age Pensioners’ Organization et al. (BCOAPO) IR 4.2, Suncor stated:

Suncor acknowledges that this is an error in its representation of the GeoTab report referenced in Exhibit C20-4, paragraph. In the report it states that EV drivers would charge their vehicle at workplaces with free charging 22% of the time, and for workplaces that charged a fee, 10-12% of the time – per the below.

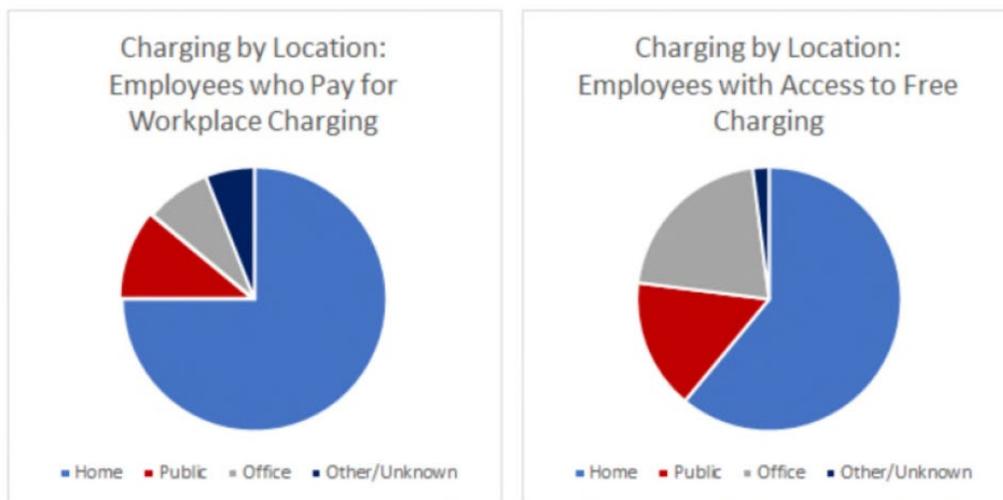


Figure ii: Charging energy by location and paid or free workplace charging

19.1 Based on the above figures, please indicate what percentage of all EV charging takes place either at home or the workplace and what percentage remains for on-the-go EV charging.

**20.0 Reference: Exhibit C20-8, BCOAPO IR 1.2 and IR 7.3**  
**Site design**

In response to BCOAPO IR 1.2, Suncor provided the breakdown of the 22 EV fast charging station by kW rating as follows:

Address	City	Province	Number of DCFC Chargers	CCS	CHAdEMO
2054 Whatcom Road	Abbotsford	BC	2	350 kW	100 kW
1417 N. Trans Canada Hwy.	Golden	BC	2	200 kW	100 kW
626 Old Hope Princeton Way	Hope	BC	2	200 kW	100 kW
1885 W Trans Canada Highway	Kamloops	BC	2	350 kW	100 kW
2693 Highway 97 N	Kelowna	BC	2	350 kW	100 kW
19971 72 Avenue	Langley	BC	2	350 kW	100 kW
3591 Voght Street	Merritt	BC	2	200 kW	100 kW
1100 North Terminal Avenue	Nanaimo	BC	2	350 kW	100 kW
1270 Lynn Valley Road	North Vancouver	BC	2	350 kW	100 kW
915 Lakeshore Drive SW	Salmon Arm	BC	1	50 kW	50 kW
1743 Burrard Street	Vancouver	BC	1	200 kW	100 kW
5498 Patricia Bay Highway	Victoria	BC	2	350 kW	100 kW

In response to BCOAPO IR 7.3, Suncor stated that it “does not operate any 100kW stations.”

20.1 Please clarify why Suncor stated that it does not operate any 100 kW stations when it has 11 locations where it operates 100 kW CHAdEMO connectors.

**21.0 Reference: Exhibit C20-8, BCOAPO IR 9.1  
Charging capability of newer makes and models**

In response to BCOAPO IR 9.1, Suncor stated:

The evidence was meant to demonstrate the new and recent models are all capable of greater than 50kW charging. Using Tesla as a single data point, their share of the EV market is higher than other OEMs, and all Tesla vehicles are capable of >50kW charging. Therefore, the claim that “the existing on-the-road fleet of EV’s are capable of a rate of charge well beyond what is proposed by BC Hydro’s EV Charging network” is accurate. [Emphasis added]

21.1 Please provide supporting evidence to the effect that Tesla’s share of the EV market is higher than other Original Equipment Manufacturers (OEM) generally and in BC, and also that all Tesla vehicles are capable of >50 kW charging.

21.2 Please confirm, or otherwise explain, that all Teslas are only capable of >50 kW charging at Tesla Superchargers and that they are limited at 50 kW charging by the CHAdEMO adaptor when they connect to any non-Tesla fast charger, even if that charger is capable of >50 kW.

**22.0 Reference: Exhibit C20-11, BCSEA-VEVA IR 1.4; Exhibit C20-10, BCUC IR 1.2  
Pre-tax versus post-tax**

In response to BCUC IR 1.2, Suncor confirmed that its Petro-Canada rate of \$0.27/min is inclusive of both PST and GST, which is ~\$0.24/min pre-tax.

In response to BC Sustainable Energy Association and Vancouver Electric Vehicle Association (BCSEA-VEVA) IR 1.4, Suncor stated:

BC Hydro’s proposed price for 100kW public fast charging (27 cents/minute) is the same as Petro-Canada’s price for our 50kW, 100kW CHAdEMO, and 200kW and 350kW CCS chargers in BC.

- 22.1 Please confirm, or otherwise explain, that if one wants to make an apples-to-apples rate comparison between BC Hydro's and Petro-Canada's per-minute rate, one needs to compare both pre tax or both post tax because some EV fast charging service providers may charge both GST and PST, or GST only.
- 22.2 Please confirm that Petro-Canada's rate of \$0.27/min is not comparable to BC Hydro's rate of \$0.27/min because the former is inclusive of both PST and GST and the latter is exclusive of PST and GST.

**23.0 Reference: Exhibit C20-11, BCSEA-VEVA IR 1.11  
Suncor proposal**

In response to BCSEA-VEVA IR 1.11, Suncor stated:

We have also proposed an increase to base electricity fees for EV charging operators to remove variability, while contributing to any added costs related to supporting short-duration, high-power peaks.

- 23.1 Please clarify the above Suncor proposal. What is Suncor referring to by "base electricity fees"? How does Suncor propose these be increased? Why would that remove variability?

**B. LEVEL PLAYING FIELD**

**24.0 Reference: Exhibit C20-10, BCUC IR 1.1; BCUC IR 2.5  
Site design**

In response to BCUC IR 2.5, Suncor stated:

- (1) BC Hydro's site design, which contemplates the installation of a single charger per location, maintains their rate service as a medium general service. Private sector operators, like Suncor, will try to maximize their sunk capital costs by installing multiple chargers per location, which can drive peak demand into >150kW. This puts them into the large general service category, which results in much higher electricity demand charges;

In response to BCUC IR 1.1, Suncor stated:

A more detailed breakdown is set out below:  
1 location – 50kW CCS and CHAdeMO - \$0.27/minute  
4 locations – 200kW CCS, 100kW CHAdeMO - \$0.27/minute  
7 locations – 350kW CCS, 100kW CHAdeMO - \$0.27/minute

- 24.1 Please confirm, or otherwise explain, that for all locations referenced above with the exception of the one 50-kW station, even if Suncor had installed only one charger per location, the maximum Combined Charging System (CCS) charging rate of either 200 kW or 350 kW would have been sufficient to put that station into BC Hydro's Large General Service.
- 24.2 If BC Hydro installs two 100-kW stations on one site, in Suncor's view, should BC Hydro still be able to maintain their rate service as a medium general service or should BC Hydro compare its rates to a large general service? Please explain.

**25.0 Reference: Exhibit C20-10, BCUC IR 2.5; Exhibit B-1, p. 31  
BC Hydro connection fees**

In response to BCUC IR 2.5, Suncor stated:

(2) BC Hydro charges private sector operators a cost to upgrade service to their locations as outlined in ChargePoint's evidence (Exhibit C-4, Table 1 – "BC Hydro Connection Fee"). This cost benefits BC Hydro and should be considered in the level playing field calculation for BC Hydro; and

25.1 In Suncor's view, has BC Hydro considered the costs for these upgrades in their cost recovery scenarios outlined in Table 3 on page 31 of its Public EV Fast Charging Rate Application?

25.1.1 If not, should BC Hydro include these upgrade costs in its cost recovery calculations and why?

**26.0 Reference: Exhibit C20-10, BCUC IR 2.4, IR 2.4.1 and IR 2.6  
Level playing field**

In response to BCUC IR 2.6, Suncor stated:

Suncor submits that the most effective way to level the playing field is to focus on three main changes:

(1) removing demand charges;  
(2) reducing the capital associated with BC Connection Fees; and  
(3) reforming rate structures to include kWh, time, dynamic pricing and tiers per kW drawn.

26.1 Please clarify whether Suncor means it would support the removal of demand charges permanently or during a transition period.

26.1.1 Please revise the tables provided in response to BCUC IR 2.4 and IR 2.4.1 by removing demand charges.

26.2 Please clarify what Suncor means by "reducing the capital associated with BC Connection Fees"? In Suncor's view, what would be an appropriate level of connection fees to pay BC Hydro or FortisBC?

26.2.1 Please provide another iteration of the above tables by reducing the capital associated with BC Hydro's connection fees to a level considered appropriate by Suncor (in addition to removing demand charges).

26.3 Please clarify whether Suncor would support reforming rate structures to energy-based rates (in whole or in part) before Measurement Canada approves a DC-measuring device.

26.4 Is Suncor referring to a rate structure like the one employed by Tesla when it mentions "dynamic pricing and tiers per kW drawn"? If not, please clarify what Suncor means by that.

26.4.1 Could Suncor currently adopt such alternative rate structures? If not, why not? If yes, why hasn't it adopted it?

**27.0 Reference: Exhibit C20-4, Figure 1, p. 8 and p. 14; Exhibit C20-10, BCUC IR 6.1, IR 7.1, IR 7.3.2.1, IR 13.1, and IR 13.2  
BC Hydro's data assumptions for the 100-kW stations**

On page 14 of its evidence, Suncor states:

Global battery electric vehicle average range reached 340 km or 212 miles in 2020, which needs about a 60kWh battery. At BC Hydro's proposed 50kW charging rate, it takes over 72 minutes to get full charge, with a 100kW charger helping to reduce charging time to 36 minutes. [Emphasis added]

27.1 Please confirm, or otherwise explain, that Suncor's assumption behind the underlined statement above is that a 100-kW fast charging station may double the charging speed of a 50-kW station to obtain the same amount of electricity if the vehicle is capable of being charged at this higher power level.

27.1.1 If so, please confirm, or otherwise explain, that this scenario represents one end of the spectrum in terms of time required to gain the same amount of electricity at a 100-kW station versus a 50-kW station.

In response to BCUC IR 13.1, Suncor states:

In the absence of 'Energy per session' and 'Time per charge' from BC Hydro to support their calculation, Suncor has kept those variables constant in Figure 1. Though Suncor has only operated a single 50kW unit since April 2021, it is our experience that a customer spending the same amount of time on a 50kW and 100kW station would not receive the same amount of electricity. [Emphasis added]

In response to BCUC IR 13.2, Suncor states:

In Suncor's view, BC Hydro should adjust the utilization, power delivered, and time on unit expectations on their 100kW data set supporting the proposed rates.

In Figure 1 of its evidence and in response to BCUC IR 7.1 and IR 7.3.2.1, Suncor modelled scenarios for the 50-kW and 100-kW stations to illustrate the impact of variables such as power losses, dual-chargers per site, or Large General Service Rate Schedule on the rates of the 100-kW stations.

27.2 Please confirm, or otherwise explain, that in Figure 1 and in BCUC-Suncor IR 7.1 and IR 7.3.2.1, Suncor did not adjust BC Hydro's 50-kW data for energy delivered and/or time to support its calculations on the 100-kW stations, even though Suncor states that this data should be adjusted.

27.2.1 If so, please confirm that the results of Suncor's scenarios on the 100-kW stations cannot be taken at face value without first being adjusted to recognize that it takes less time to gain the same amount of energy at a 100-kW station than at a 50-kW station.

27.3 In the absence of BC Hydro's data relative to 100-kW stations, please confirm, or otherwise explain, that assuming a doubling of the charging speed to gain the same amount of electricity is reasonable for the purpose of adjusting the 50-kW data set to a 100-kW data set to support a rate for the 100-kW, i.e., this would represent one end of the spectrum.

In response to BCUC IR 6.1, Suncor stated:

If non-exempt utilities are required to follow a regulatory proceeding to enable price changes, Suncor recommends that the BCUC use the proceeding to set a minimum (and possibly, a maximum) rate within which non-exempt utilities must operate their EV fast charging service, and require non-exempt utilities to report annually with evidence demonstrating their diligence in ensuring maximum revenue directly from the EV charging network to minimize the subsidization of applying losses to all ratepayers. [Emphasis added]

27.4 Please discuss the reasonableness of using the above assumption in relation to Suncor's

proposal that the BCUC approve a minimum and possibly a maximum rate within which BC Hydro could dynamically adjust its rates.

**28.0 Reference: Exhibit C20-10, BCUC IR 3.1, IR 7.1 and IR 14.2; Exhibit C20-6, StrataPlanVR2673 IR 5; Exhibit B-4, BCUC IR 18.10  
General Service Rate Schedule as the Basis for BC Hydro’s Proposed Rates**

In response to BCUC IR 3.1, Suncor stated:

Adopting General Service rates as the basis for the proposed rates is insufficient to compare BC Hydro’s proposed rates with the other fast charging station operators. BC Hydro has designed their network to support a single charger at each location, significantly lowering their peak power use on a site per site basis, however increasing the cost of capital for construction, maintenance, and BC Hydro Connection Fees. Operators that choose to install enough charging posts to accommodate the greater demand from customers, which removes an element of customer frustration potentially impacting EV adoption in BC, are disadvantaged when considering only demand and energy costs. Suncor also believes that BC Hydro is not considering energy loss associated with the operation of EV chargers. Suncor would encourage BC Hydro’s utility cost recovery model to consider a higher peak demand charge based on a minimum two units operating at the same time (for example, modelled after the City of Vancouver evidence submitted by ChargePoint, Exhibit C-4, Table 1 – “demand charge (monthly)”). [Emphasis added]

In response to BCUC IR 14.2, Suncor stated:

We believe as the demand and utilization increases, BC Hydro will be required to add additional charging ports to existing stations, resulting in higher peak demand that could be considered unsustainable.

In response to StrataPlanVR2673 IR 5, Suncor stated:

Large general service would not be applied to BCH until their system experiences a peak demand higher than 150kW in one month (for example a site with two 100kW chargers used simultaneously).

In response to BCUC IR 18.10, BC Hydro stated:

For single charging station sites, BC Hydro plans to upgrade the majority of these sites over the next two year to dual fast charging station sites (subject to physical space and electrical capacity). All new sites going forward will have two or more fast charging stations.

28.1 In Suncor’s view, if BC Hydro does not calculate its electricity cost recovery to account for a dual 50-kW site with peak demands beyond the 50 kW maximum used in its calculation despite planning to upgrade the majority of its single-charger sites to dual-charger stations over the next two years and to install two or more stations at all new sites going forward, does the proposed rate of \$0.21 per minute for the 50-kW stations, in effect for three years, risk not being sufficient to recover BC Hydro’s electricity costs once dual-charger stations are in operation (assuming a 3.7 percent utilization rate)? Please explain.

28.2 In Suncor’s view, if BC Hydro does not calculate its electricity cost recovery to account for a dual 100-kW site with peak demands beyond the 100 kW maximum used in BC Hydro’s calculation, but yet BC Hydro plans to install two or more stations at all new sites going forward, does the

proposed rate of \$0.27 per minute for the 100-kW stations, in effect for three years, risk not being sufficient to recover BC Hydro’s electricity costs at a 5.5 percent utilization rate once these new sites are operational, and risk being even less sufficient at a 3.7 percent utilization rate.

28.2.1 In Suncor’s view, would the risk of the \$0.27/minute rate being insufficient to recover electricity costs increase if BC Hydro’s new dual 100-kW site experienced a peak demand higher than 150 kW in one month (for example a site with two 100 kW chargers used simultaneously)?

In response to BCUC IR 7.1, Suncor stated:

Suncor proposes that BC Hydro’s utilization be set within the 3-5% range that was proposed for 50kW, for both 50 and 100 kW units. We also propose that BC Hydro calculate electricity cost recovery to account for a multi-charger system with peak demands that extend beyond the 50kW and 100kW max used by BC Hydro. This would more closely reflect the exempt parties network design. For illustrative purposes, Suncor has prepared the below scenario using a 86kW peak for 50kW and a 120kW peak for 100kW pricing. Figures are pre-tax. [Emphasis added]

	3.7% utilization scenario @ 100kW	3.7% utilization scenario @ 100kW
Demand charge per 4.2 Cost Recovery Calculations	\$5.39	\$5.39
Energy charge per 4.2 Cost Recovery Calculations	\$0.0963	\$0.0963
Peak Energy (monthly)	86	120
Energy per session (monthly) per 4.2 Cost Recovery Calculations	13.1	13.1
Number of session (monthly) per 4.2 Cost Recovery Calculations	57.0	57.0
Anticipated no load power from operations	50.4	108.0
Energy (sold)	746.7	746.7
Total energy (month)	797.1	854.7
Energy cost by demand (sold to customer)	\$71.91	\$71.91
Peak cost	\$463.54	\$646.80
Energy cost (operations)	\$4.85	\$10.40
Total month	\$540.30	\$729.11
Cost per charge	\$9.48	\$12.79
Time per charge per 4.2 Cost Recovery Calculations	28.6	28.6
Per minute rate (proposed)	\$0.33	\$0.45
Total revenue (from charging)	\$540.41	\$729.35
Earn per charge	\$9.48	\$12.80
Profit/Loss (per transaction)	\$0.00	\$0.00

28.3 Please confirm, or otherwise explain, that in Suncor’s table above, the heading of the second column should read “3.7% utilization scenario @ 50 kW” instead of “3.7% utilization scenario @ 100 kW.”

28.4 Please explain why using an 86-kW monthly energy peak is a reasonable assumption for a dual

50-kW station.

28.4.1 Could that be representative of a BC Hydro's dual 50-kW station? Why or why not?

28.5 Per the above table, please confirm that, for a dual 50-kW site, if the monthly peak energy was 86 kW, the rate required to recover BC Hydro's electricity cost (assuming a conservative amount of no load power from operations at 50.4 kWh and assuming no Basic Charge) would be \$0.33 per minute. If not, please explain.

28.5.1 If confirmed, please also confirm that BC Hydro's loss per transaction would be \$3.47 (\$9.48 – (28.6 min x \$0.21/min) or \$198 monthly (\$3.47/transaction x 57 transactions/month) if it charges \$0.21 per minute.

28.5.2 Please revise the second column to include the Medium General Service Basic Charge daily rate of \$0.2661 per day and recalculate the per minute rate required for BC Hydro to recover its electricity costs. What would be the loss per transaction in \$ and the loss per month (\$) if BC Hydro was only charging \$0.21 per minute?

28.6 Please explain why using a 120-kW monthly energy peak is a reasonable assumption for a dual 100-kW station.

28.6.1 Could that be representative of a BC Hydro's dual 100-kW station? Why or why not?

28.7 Per the above table, please confirm that, for a dual 100-kW site, if the monthly peak energy was 120 kW, the rate required to recover BC Hydro's electricity cost (assuming a conservative amount of no load power from operations at 108 kWh, no Basic Charge and that 50-kW data can be applied without adjustment to 100-kW station) would be \$0.45 per minute. If not, please explain.

28.8 To adjust the 50-kW data (time per charge of 28.6 minute and energy per session of 13.1 kWh) for a 100-kW station, please revise the third column calculations by reducing in half the time per charge (i.e., 14.3 minutes).

28.8.1 While revising the third column, please include the Medium General Service Basic Charge daily rate of \$0.2661 per day and recalculate the per minute rate required for BC Hydro to recover its electricity costs. What would be the loss per transaction in \$ and the loss per month (\$) if BC Hydro was only charging \$0.27 per minute?

**29.0 Reference: Exhibit C20-4, p. 4; Exhibit C20-10, BCUC IR 2.4.2, IR 4.1 and IR 7.3.2.1 Medium General Service vs. Large General Service**

On page 4 of its evidence, Suncor states:

However, fair market rates based on commercially reasonable cost assumptions expected from any prudent private investor are necessary to achieve the ambitions of the CleanBC climate plans for greater EV adoption.

In response to BCUC IR 2.4.2, Suncor stated:

The current situation is neither sustainable in the short term nor the long term and must be carefully addressed to demonstrate to investors that their existing and planned future investments can be resilient within a price system that promotes fair competition in all aspects of EV charging infrastructure.

In response to BCUC IR 4.1, Suncor stated:

BC's Hydro's approach assumes that the rates charged by other operators collect sufficient revenue to recover the cost of electricity. This is an incorrect assumption, as

we explain in response to the information requests in Section 2, above.

BC Hydro is a price setter in the EV charging marketplace (they supply home charging, public charging, workplace charging and on-the-go charging). The rate they charge should be sufficient to enable other operators to recover, at a minimum, the cost of energy (per BC Hydro invoices, including peak demand pricing) and the capital associated with BC Hydro’s Connection Fee. This would help level the playing field.

In response to BCUC IR 7.3.2.1, Suncor stated:

A rate closer to \$1 would be required to support returns on Large General Service. The table below illustrates this point:

	3.7% utilization scenario @ 100kW	3.7% utilization scenario @ 100kW
Demand charge per 4.2 Cost Recovery Calculations	\$5.39	\$12.41
Energy charge per 4.2 Cost Recovery Calculations	\$0.0963	\$0.0963
Peak Energy (monthly)	120	120
Energy per session (monthly) per 4.2 Cost Recovery Calculations	13.1	13.1
Number of session (monthly) per 4.2 Cost Recovery Calculations	57.0	57.0
Anticipated no load power from operations	108.0	108.0
Energy (sold)	746.7	746.7
Total energy (month)	854.7	854.7
Energy cost by demand (sold to customer)	\$71.91	\$71.91
Peak cost	\$646.80	\$1,489.20
Energy cost (operations)	\$10.40	\$10.40
Total month	\$729.11	\$1,571.51
Cost per charge	\$12.79	\$27.57
Time per charge per 4.2 Cost Recovery Calculations	28.6	28.6
Per minute rate (proposed)	\$0.45	\$0.96
Total revenue (from charging)	\$729.35	\$1,571.51
Earn per charge	\$12.80	\$27.57
Profit/Loss (per transaction)	\$0.00	\$0.00

- 29.1 Please confirm, or otherwise explain, that the second column of the table above is based on BC Hydro’s Medium General Service Rate Schedule and the third column is based on BC Hydro’s Large General Service.
- 29.2 Please confirm, or otherwise explain, that “a rate closer to \$1,” such as the \$0.96 per minute in the third column, is still not sufficient to support returns on Large General Service because that rate would only recover electricity costs.
- 29.3 Please revise the calculations in the above table to adjust the time per charge by dividing it in two (i.e., 14.3 minutes).
  - 29.3.1 While revising the table, please include the Medium and Large General Service Basic Charge daily rate of \$0.2661 per day.

29.4 Please discuss whether Suncor considers that rates set to recover only utility charges would be “fair market rates based on commercially reasonable cost assumptions” that can be sustained in the short and long term?

**30.0 Reference: Exhibit C20-10, BCUC IR 5.1  
Bill comparisons**

In response to BCUC IR 5.1, Suncor provided the following table:

for BC	All	<50 kW	>50 kW
Average Charge Time	25.12	25.87	22.55
Average Rev	\$ 6.78	\$ 6.99	\$ 6.09
Less taxes	\$ 0.88	\$ 0.91	\$ 0.79
net earnings	\$ 5.90	\$ 6.08	\$ 5.30
assumed earnings	\$ 7.72	\$ 7.72	\$ 7.72
Variance	\$ 1.82	\$ 1.64	\$ 2.42
% Variance	23.55%	21.27%	31.38%

30.1 Please provide a high-level description of what this table is about and what the source of the information is. Please also explain how each line is calculated or sourced from.

30.2 Please confirm, or otherwise explain, that the BC provincial sales tax is 7 percent and the good and services tax is 5 percent, for a total of 12 percent.

30.2.1 If confirmed, please clarify why a tax rate of about 15 percent has been applied in the above table (2<sup>nd</sup> column:  $\$5.90 \times 1.149 = \$6.78$ , 3<sup>rd</sup> column:  $\$6.08 \times 1.15 = \$6.99$  and 4<sup>th</sup> column:  $\$5.30 \times 1.149 = \$6.09$ ).

**31.0 Reference: Exhibit B-4, BCUC IR 7.2.1; FortisBC Inc. (FBC) Rate Design and Rates for EV Direct Current Fast Charging Service (EV Fast Charging Application), Exhibit B-1, Section 3.2.8, p. 15  
Carbon credits**

In response to BCUC IR 7.2.1, BC Hydro stated:

BC Hydro has considered credit revenues from the sale of credits it receives as a result of electricity sold through its fleet of EV fast charging stations under the Renewable & Low Carbon Fuel Requirements Regulation.

On page 15 of FBC’s EV Fast Charging Application, FBC states:

The carbon intensity of electricity falls below the maximum carbon intensity limit set by the RLCFRR for the reporting period. Therefore, FBC will earn carbon credits which, subject to verification and approval by the Ministry of Energy, Mines and Petroleum Resources, it may transfer to fuel suppliers who are not compliant with the maximum carbon intensity limits set by the RLCFRR.

31.1 Please confirm that the potential revenues generated from the sale of carbon credits are factored into Petro-Canada’s EV fast charging rates. If not confirmed, please explain whether Suncor utilizes carbon credits generated from Petro-Canada’s EV fast charging business in Suncor’s other lines of business.

**C. FAIR MARKET RATES**

**32.0 Reference: Exhibit C20-10, BCUC IR 6.1 and IR 7.2; Exhibit C20-4, p. 3  
Suncor's proposal of a minimum (and possibly a maximum rate)**

In response to BCUC IR 6.1, Suncor stated:

If non-exempt utilities are required to follow a regulatory proceeding to enable price changes, Suncor recommends that the BCUC use the proceeding to set a minimum (and possibly, a maximum) rate within which non-exempt utilities must operate their EV fast charging service, and require non-exempt utilities to report annually with evidence demonstrating their diligence in ensuring maximum revenue directly from the EV charging network to minimize the subsidization of applying losses to all ratepayers. This would include a system of surveying competitor pricing to determine the appropriate rate that could have been set to maximize revenue. Given the differences in customer needs, vehicle capability and individual experience, BCUC should not set a specific rate that is locked for the proposed three years.

In response to BCUC IR 7.2, Suncor stated:

Suncor agrees that calculations are difficult without known utilization rates. As noted in our response to information request 7.2, above, determining the energy charges associated with operating an EV charging station requires more than just utilization rates. However, a minimum rate-type structure, as discussed in our response to the information request in section 6, above, could support dynamic adjustment based on a rolling monthly report for utilization. [Emphasis added]

On page 3 of Suncor's evidence, Suncor states:

Suncor's evidence supports a finding by the BCUC that the Rate Proposal is unjust, unreasonable and contrary to section 59 of the *Utilities Commission Act*. For the reasons discussed below, Suncor respectfully submits that the BCUC can only approve a proposed rate that accounts for recovery of all BC Hydro's forecasted EV-charging expenses from those EV users. [Emphasis added]

- 32.1 Please clarify how the BCUC should set the minimum rate.
- 32.2 For the 50-kW rate, please confirm, or otherwise explain, that Suncor is proposing that the minimum rates be those calculated by Suncor in response to BCUC IR 7.1, or as revised to include the Medium General Service Basic Charge.
  - 32.2.1 If so, please confirm, or otherwise explain, that Suncor is no longer submitting that the BCUC can only approve a proposed rate for the 50-kW station that accounts for recovery of all BC Hydro's forecasted EV-charging expenses.
- 32.3 For the 100-kW rate, please clarify whether Suncor is proposing that the minimum rates be those calculated by Suncor in response to BCUC IR 7.3.2.1 based on the MGS (second column) or LGS (third column), or as revised to include an adjustment for power level of the 100-kW station and to include the Medium/Large General Service Basic Charge.
  - 32.3.1 If so, please confirm, or otherwise explain, that Suncor is no longer submitting that the BCUC can only approve a proposed rate for the 100-kW station that accounts for recovery of all BC Hydro's forecasted EV-charging expenses.
- 32.4 Please clarify why a maximum rate could possibly be required.
- 32.5 If Suncor's proposal of a minimum (and possibly a maximum) rate was adopted, is it also

Suncor’s proposal that BC Hydro could only adjust its EV fast charging rates on a monthly basis within that band or could it adjust its rates at any time during the year, as they see fit, based on variables such as competitor’s pricing, utilization rate, etc.? Please discuss.

32.6 Regarding the annual report recommended by Suncor, is Suncor recommending that BC Hydro would only report on competitors’ pricing or should the report also include other variables such as utilization rate, or other variables? Please discuss.

**33.0 Reference: Exhibit C20-10, BCUC IR 8.2  
Energy-based rate (\$/kWh)**

In response to BCUC IR 8.2, Suncor stated:

Other, more realistic options for leveling the playing field include rate structure reform, removing peak demand pricing for large general service and switching to \$/kWh pricing models.

33.1 Please explain why switching to an energy-based rate in \$/kWh would help level the playing field. Could Suncor provide calculations to illustrate this point?

**34.0 Reference: Exhibit C20-10, BCUC IR 1.3 and 9.1.1  
BC Hydro connection costs for upgrades**

In response to BCUC IR 9.1.1, Suncor stated:

CCS has a liquid cooled cable allowing for higher power output, while CHAdeMO technology does not, which limits a reasonably sized cable to 100kW. Some CCS connectors can charge up to a maximum of 200kW and others up to 350 because each location was assessed for utility upgrades and available power supply. Some locations were designed with only 200kW CCS based on utility upgrade costs and also when considering the anticipated market size (e.g., adoption expectations for more remote locations).

34.1 Please provide Suncor’s connection fees to BC Hydro or FBC’s electric system, for each of the Petro-Canada EV fast charging sites listed in BCUC IR 1.3.

34.2 Please provide the cost difference for upgrades at the 200 kW level vs the 350 kW level.

**35.0 Reference: Exhibit C20-10, BCUC IR 4.1 and IR 10.1; FBC EV Fast Charging Application, Exhibit A-18, BCUC Order G-215-21  
Price-setter vs. price-taker**

In response to BCUC IR 4.1, Suncor stated:

BC Hydro is a price setter in the EV charging marketplace (they supply home charging, public charging, workplace charging and on-the-go charging). The rate they charge should be sufficient to enable other operators to recover, at a minimum, the cost of energy (per BC Hydro invoices, including peak demand pricing) and the capital associated with BC Hydro’s Connection Fee. This would help level the playing field.

BCUC IR 10.1 asked Suncor whether it would consider itself a price taker or a price maker in the EV fast charging service and whether there is any difference between BC Hydro and FBC’s service areas. In response, Suncor stated:

As an EV charging station operator, Petro-Canada is a price-taker. There is no difference between BC Hydro and FBC.

35.1 Please confirm, or otherwise explain, that in Suncor’s view, BC Hydro is a price setter because its rates are regulated by the BCUC.

35.1.1 If so, does Suncor also view FBC as a price setter?

Recital F in BCUC Order G-215-21 states:

As updated during the course of the proceeding, FBC seeks approval of permanent rates for EV charging service at FBC-owned DCFC stations at \$0.26/minute at 50 kW stations and \$0.54/minute at 100 kW stations, to be effective within 30 days of the date of the BCUC’s order approving the rates.

On page 2 of the Reasons for Decision accompanying Order G-215-21, the BCUC states:

Since this is the first time the BCUC will be approving rates on a permanent basis for public utilities to provide EV charging service in B.C., the Panel finds that it is important to look at the larger landscape and provide a thoughtful approach to ensure reasonableness in the rates and consistency, where warranted, in rate setting across public utilities.

35.2 If the BCUC were to approve BC Hydro’s and FBC’s rates as proposed by these utilities, i.e., \$0.21/min and \$0.27/min for BC Hydro’s 50- and 100-kW stations and \$0.26/min and \$0.54/min for FBC’s 50- and 100-kW stations, would Suncor set its rates based on BC Hydro or FBC, and why?

**36.0 Reference: Exhibit C20-10, BCUC IR 10.2 and IR 16.1; Exhibit C20-6, StrataPlanVR2673 IR 14 Suncor’s rate-setting methodology**

In response to BCUC IR 10.2, Suncor stated:

Given how little experience Suncor has in the EV fast charging market, we can only share the methodology that we used at the time of our launch. Suncor considered multiple factors when pricing our EV charging offering, including an assessment of competitors in the market at the time of our launch (i.e., a market parity approach). We used 50kW chargers as the baseline for our assessment given that the majority of on-road fleet vehicles at the time of launch were not capable of >50kW charging and therefore the customer would not technically benefit from Suncor’s higher power chargers (this breaking point (higher >50kW vs. <50kW, was anticipated to occur in 2021/2022). [Emphasis added]

In response to StrataPlanVR2673 IR 14, Suncor stated:

Below we have provided the approximate charging speed of the more popular EV models:

Tesla Model S, X, Y, 3 – highest SOM – charging speeds up to >150 kW  
Nissan Leaf 2021 - ~100kW  
Chevy Bolt 2021 - ~50kW  
Porsche Taycan - ~270kW  
Audi e-tron - ~155kW  
Ford Mach-e – ~150kW  
Hyundai Ioniq 5 - >200kW  
Hyundai Kona – ~77kW

In response to BCUC IR 16.1, Suncor stated:

We believe that the on-road fleet will have a greater percentage of >50kW capable vehicles compared to all previously sold and on-road <50kW capable vehicles by late 2021 early 2022 based on model availability and increased sales quarter-over-quarter.

- 36.1 Once the breaking point of having more EVs capable of charging at >50kW than charging at < 50 kW occurs later in 2021 or 2021, would Suncor then consider increasing its rates and stop using 50-kW power units as the baseline, even in the absence of a Measurement Canada-approved DC device, since customers would benefit from Suncor's higher power chargers via shorter charging sessions? Please discuss.

#### **D. BC HYDRO'S COST CALCULATIONS ASSUMPTIONS**

**37.0 Reference: Exhibit C20-10, BCUC IR 12.9  
Power loss through ongoing operations**

In BCUC IR 12.9, the BCUC asked Suncor to provide supporting calculations to derive the 50.4 kWh and 108.0 kWh figures in Figure 1 of its evidence. In response, Suncor stated:

Suncor does not operate 100kW stand-alone chargers, and has insufficient data regarding our single 50kW charger. As such, we obtained this information from a 3rd party operator of 50kW power units. The operator advised Suncor that a reasonable assumption is 50.4 kWh's per month in association with 50kW chargers.

- 37.1 Please indicate who is the 3<sup>rd</sup> party operator of 50-kW power units. How many 50-kW units does this 3<sup>rd</sup> party operate in BC?
- 37.2 Has this 3<sup>rd</sup> party operator also provided information regarding the 100-kW power units? If not, please clarify how Suncor has derived the power loss of 108.0 kWh for a 100-kW unit.

#### **E. PEAK DEMAND CHARGES**

**38.0 Reference: Exhibit C20-10, BCUC IR 15.3.1  
Demand Charges and BC Hydro's Demand Transition Rate**

In response to BCUC IR 15.3.1, Suncor stated:

Suncor submits that the BCUC should review BC Hydro's demand charges as part of this proceeding or a separate proceeding. Reform to demand charges could have a significant impact on the scale to which BC Hydro is proposing to subsidize its losses through ratepayers. [Emphasis added]

- 38.1 Please clarify what Suncor means by the underlined sentence in the preamble. Is Suncor suggesting that the extent of cross-subsidization of the BC Hydro EV fast charging service by BC Hydro ratepayers would be greatly diminished if demand charges were removed or deferred? Why or why not?