



ORDER NUMBER
G-67-20

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority
Fleet Electrification Rate Application

BEFORE:

T. A. Loski, Panel Chair
A. K. Fung, QC, Commissioner

on March 26, 2020

ORDER

WHEREAS:

- A. On August 7, 2019, the British Columbia Hydro and Power Authority (BC Hydro) applied to the British Columbia Utilities Commission (BCUC) for approval of rates for two new services, pursuant to sections 59 to 61 of the *Utilities Commission Act* (UCA) (Application);
- B. The Application seeks approval of new Rate Schedules (RS) for an Overnight Rate (RS 1640, 1641, 1642, 1643) and a Demand Transition Rate (RS 1650, 1651, 1652, 1653) for optional services at demand equal to or greater than 150 kilowatts (kW) to allow BC Hydro to support the electrification of fleet vehicles and vessels in its service territory, as set out in Appendix B of the Application. BC Hydro proposes that the Demand Transition Rate and the Overnight Rate be approved effective April 1, 2020 and April 1, 2021, respectively;
- C. By Orders G-198-19, G-295-19, and G-314-19, the BCUC established a public hearing process and the regulatory timetable for the review of the Application, which included one round of BCUC and intervener information requests to BC Hydro, submissions on further process, and written final and reply arguments;
- D. The BCUC has reviewed the Application, evidence and arguments and considers that a determination on the proposed rates is warranted.

NOW THEREFORE pursuant to sections 59 to 61 of the UCA, and for the reasons attached to Appendix A of this order, the BCUC orders as follows:

- 1. RS 164x – Overnight Rate (150 kW and Over), as shown in Appendix B of the Application, is approved effective April 1, 2021.

2. RS 165x – Demand Transition Rate (150 kW and Over), as shown in Attachment 1-A to BC Hydro’s Reply Argument, is approved effective April 1, 2020 and will terminate effective March 31, 2032.
3. BC Hydro is directed to submit a three-year evaluation report for the Demand Transition Rate by December 30, 2023 and a three-year evaluation report for the Overnight Rate by December 30, 2024 as set out in the Attachment to Appendix A of this order.
4. BC Hydro is directed to file updated tariff sheets reflecting the approved Overnight Rate and Demand Transition Rate within 15 business days of the date of this order.

DATED at the City of Vancouver, in the Province of British Columbia, this 26th day of March 2020.

BY ORDER

Original signed by:

T. A. Loski
Commissioner

Attachment

British Columbia Hydro and Power Authority

Fleet Electrification Rate Application

Reasons for Decision

March 26, 2020

Before:
T. A. Loski, Panel Chair
A. K. Fung, QC, Commissioner

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Attachment: BC Hydro Three-Year Evaluation Report for the Demand Transition Rate and Overnight Rate - Complete List of the Items

Executive Summary

The Panel approves two new optional services proposed by the British Columbia Hydro and Power Authority (BC Hydro) in furtherance of the Province's public policy goal of reducing greenhouse gas emissions in the transportation sector:

- 1) **An Overnight Rate - intended for in depot and overnight charging of fleet vehicles and vessels, effective as an ongoing rate as of April 1, 2021; and**
- 2) **A Demand Transition Rate - designed for in route charging during fleet operating hours, effective as a time-limited rate from April 1, 2020 to March 31, 2032.**

In response to customer requests for fleet charging rates and to encourage customers to convert their fleet vehicles and vessels from fossil fuels to electricity BC Hydro filed an application on August 7, 2019, requesting British Columbia Utilities Commission (BCUC) approval of rates for two new optional services at maximum charging demand equal to or greater than 150 kilowatts (Application). The first rate is called the Overnight Rate and the second rate is called the Demand Transition Rate (collectively, Fleet Electrification Rates). The proposed Fleet Electrification Rates will be available for customers which qualify for General Service where the customer is a business, government agency or other organization, and will only be for separately metered charging of electric fleet vehicles or vessels owned or leased by, and operated by, the customer.

Absent a new rate design, the anticipated load associated with charging fleet vehicles or vessels would be billed under BC Hydro's Large General Service Rate. BC Hydro states that potential fleet charging customers, such as public transit providers, have indicated that the Large General Service Rate demand charge is a barrier to converting their fleets to electric operation.

BC Hydro proposed that the Overnight Rate will be effective as an ongoing rate as of April 1, 2021 and is intended for in-depot and overnight charging of fleet vehicles and vessels. The Overnight Rate will have a time of use demand charge between 6:00 a.m. and 10:00 p.m. (i.e. there will be no demand charge overnight) and a flat energy charge. The Demand Transition Rate will be effective as a time-limited rate from April 1, 2020 to March 31, 2032. This rate is designed for in route charging during fleet operating hours where vehicles will charge for approximately 10 minutes at stops on a route equipped with chargers. No demand charge applies for the first six years that the Demand Transition Rate is proposed to be offered, after which the demand charge transitions to the Large General Service Rate demand charge over a subsequent six-year period.

Pursuant to sections 59-61 of the *Utilities Commission Act*, the Panel approves the Fleet Electrification Rates. The Panel finds the Fleet Electrification Rates are just, fair, reasonable and are not unduly discriminatory or preferential.

1.0 Introduction

In response to customer requests for fleet charging rates and to support the electrification of commercial fleet vehicles and vessels, on August 7, 2019, the British Columbia Hydro and Power Authority (BC Hydro) filed an application requesting British Columbia Utilities Commission (BCUC) approval of rates for two new optional services at demand equal or greater than 150 kilowatts (kW) (Application). The first rate is called the Overnight Rate and the second rate is called the Demand Transition Rate (collectively, Fleet Electrification Rates). The Overnight Rate has a time of use demand charge (as it does not have a demand charge during the overnight period) and a flat energy charge. The Overnight Rate is intended for in-depot and overnight charging of fleet vehicles and vessels. The Demand Transition Rate has demand charge relief for a fixed period of six years (after which it transitions to the Large General Service (LGS) Rate over a subsequent six-year period) and a flat energy charge. The Demand Transition Rate is intended for in route and daytime charging of fleet vehicles and vessels.¹

1.1 Approvals Sought

BC Hydro seeks BCUC approval of the new Rate Schedules (RS) for an Overnight Rate (RS 164x – Overnight Rate (150 kW and Over)) and a Demand Transition Rate (RS 165x – Demand Transition Rate (150 kW and Over)), as provided in Appendix B of the Application. The Overnight Rate will be effective as an ongoing rate as of April 1, 2021 (F2022) and the Demand Transition Rate will be effective as a time-limited rate from April 1, 2020 (F2021) to March 31, 2032 (F2032). As of April 1, 2032 (F2033), BC Hydro proposes that any customers served under the Demand Transition Rate will be migrated to the LGS Rate (RS 16xx) or an otherwise applicable rate.²

BC Hydro later amended its proposed approach to transition the Demand Transition Rate to the LGS Rate over the Fiscal 2027 (F2027) to F2032 period. Revised rate schedules for the Demand Transition Rate were provided in Attachment 1-A of the BC Hydro Reply Argument for the BCUC's consideration.³

1.2 Regulatory Process and Participants

The BCUC established a written hearing process for the review of the Application, which included one round of information requests (IRs) and submissions on further process, followed by written final and reply arguments.

There were ten registered interveners and eight interested parties in this proceeding. The registered interveners who filed final arguments are:

- Clean Energy Association of B.C. (CEABC);
- BC Sustainable Energy Association (BCSEA);
- Association of Major Power Customers of BC (AMPC);
- British Columbia Old Age Pensioners' Organization et al. (BCOAPO); and
- Commercial Energy Consumers Association of British Columbia (CEC).

¹ Exhibit B-1, p. 1.

² Ibid., Cover letter; Ibid., p. 15.

³ BC Hydro Reply Argument, Attachment 1A.

The BCUC also received one letter of comment from the Township of Langley.

1.3 Decision Framework

Section 2.0 of these reasons for decision discusses the need for and describes the proposed rates. Section 3.0 addresses the issues arising in this proceeding regarding BC Hydro's proposed rates. Section 4.0 sets out the Panel's determinations on the proposed rates. Section 5.0 addresses monitoring of and reporting on the Fleet Electrification Rates, including the Panel's determinations.

2.0 Need for and Description of the Rates

2.1 Background

BC Hydro states in its Application that, absent a new rate design, the anticipated load associated with charging fleet vehicles or vessels would be billed under BC Hydro's LGS Rate. The LGS rate includes demand charges based on the customer's maximum demand during the billing period. BC Hydro states that in the early stages of electric fleet conversion from fossil fuel to electricity, the characteristics of the charging load can result in demand charges that make up a higher proportion of a customer's bill than is typical for LGS Rate customers. This is due to the fact that until the entire fleet is converted to electricity, charger utilization may be low. BC Hydro submits that potential fleet charging customers, such as public transit providers, have indicated that the LGS Rate demand charge is a barrier to converting their fleets to electric operation.⁴

In response to customer demand and feedback from stakeholders, BC Hydro is proposing the Overnight Rate for in depot charging and the Demand Transition Rate for in route charging. The Fleet Electrification Rates are available for customers which qualify for General Service where the customer is a business, government agency or other organization. The rates are only for separately metered charging of electric fleet vehicles or vessels owned or leased by, and operated by, the customer, at maximum charging demand equal to or greater than 150 kW. These two rates are explained in greater detail in subsection 2.3 below.

2.2 Consultation and Outreach

BC Hydro states it has had requests from TransLink and BC Transit for alternative rates to the LGS Rate that would help mitigate the impact of demand charges to support the electrification of bus fleets.⁵ BC Hydro states the Vancouver Fraser Port Authority has also indicated that demand charges have been identified as a significant barrier to the electrification of port fleets.⁶ Letters of support from BC Transit, TransLink, the Port of Vancouver, and the Ministry of Energy, Mines and Petroleum Resources are included in Appendices C and D of the Application.⁷

Additionally, BC Hydro states that it held a workshop on May 28, 2019, to solicit feedback on the potential new services and rate options. Sixteen participants, including customers, stakeholder groups, and BCUC staff

⁴ Exhibit B-1, p. 2.

⁵ Ibid., p. 6.

⁶ Ibid., pp. 7-8.

⁷ Ibid., Appendices C, D.

attended the workshop. An additional nineteen people registered to participate via webcast. BC Hydro included the Stakeholder Engagement Fleet Electrification Rate Design Workshop slides, Summary Notes and Feedback Form in Appendix G of the Application.

2.3 Description of the Rates

Overnight Rate

BC Hydro states that the Overnight Rate is designed for in depot charging, which involves vehicles charging at a central depot.⁸ Each charger is expected to have a rated capacity of between 50 kW and 150 kW, with multiple chargers installed at each depot. Charging is expected to take place primarily in the overnight hours, so the buses are ready for the next day's routes. In some instances, the buses will need to charge at the depot during the day to meet operational needs.⁹ The Overnight Rate is intended to reflect the costs to serve this new overnight charging load while meeting customer needs for demand charge relief.

The design of the proposed Overnight Rate applies the LGS Rate Demand Charge between 6:00 a.m. and 10:00 p.m. and no demand charge overnight.¹⁰ The basic charge is 27.52 cents per day, which aligns with the forecasted basic charge used in the BC Hydro's LGS Rate in F2022. The proposed flat energy charge of 7.41 cents per kWh applies to energy usage at any time of day, which is higher than the energy charge used in BC Hydro's LGS Rate as it was calculated to recover BC Hydro's residual embedded cost of service.¹¹ The Overnight Rate will be effective as an ongoing rate as of April 1, 2021, in order to allow for time to complete the most critical metering and system changes required to record daily daytime and overnight demand.¹²

Demand Transition Rate

BC Hydro states that the Demand Transition Rate is designed for in route charging, whereby vehicles will charge for approximately 10 minutes at stops on a route equipped with chargers with a rated capacity of up to 450 kW. This charging will occur during the fleet's operating hours.¹³ Load profiles of an in route charging station assume load factor is lower in the early stages of the deployment of electric fleet vehicles compared to full deployment. BC Hydro expects the load factor will increase as more vehicles are electrified and fleet customers take advantage of the installed infrastructure.¹⁴

BC Hydro requests that the Demand Transition Rate be effective as a time-limited rate from April 1, 2020 to March 31, 2032.¹⁵ BC Hydro explains that the Demand Transition Rate does not recover its full embedded cost of service, and for this reason, the Demand Transition Rate will transition to the LGS Rate over six years.¹⁶ Under the proposed Demand Transition Rate, the basic charge is 26.92 cents per day in F2021 escalated in each following year by the general rate increase, which aligns with the basic charge used in the BC Hydro's LGS Rate.

⁸ Exhibit B-1, p. 3.

⁹ Ibid.

¹⁰ Ibid., p. 35.

¹¹ Ibid., p. 34.

¹² Ibid., p. 39.

¹³ Ibid., p. 4.

¹⁴ Ibid., p. 5.

¹⁵ Ibid., Cover letter; Ibid., p. 15.

¹⁶ Ibid., p. 11.

No demand charge applies for the first six years that the rate is proposed to be offered (i.e. from F2021 to F2026). Starting in F2027 and ending in F2032, the demand charge transitions from \$0 per kW to the LGS Rate Demand Charge. A flat energy charge of 9.24 cents per kWh in F2021, escalated each year by the general rate increase, applies for the first six years that the rate is proposed to be offered. The level of this energy charge is higher than the level of the energy charge that applies to the existing LGS Rate (6.10 cents per kWh in F2021). The proposed Demand Transition Rate energy charge also transitions to the LGS energy charge over six years, starting in F2027 and ending in F2032.¹⁷

2.4 Justification for the Proposed Rates

BC Hydro states that in the case of rates that are intended to advance a public policy purpose, such as reduction of Greenhouse Gases (GHGs), the BCUC has determined that they must be able to stand independently on an economic or cost of service basis, regardless of the merits of the public policy purpose.¹⁸

Therefore, BC Hydro provides the economic and cost of service justifications for the proposed Fleet Electrification Rates to demonstrate that both rates, as proposed, would be lawful and are within the BCUC's jurisdiction to approve.¹⁹ BC Hydro explains that an “economic justification” refers to incremental revenues being sufficient to recover marginal costs. Specifically, incremental revenues are defined as “the revenues received from new load served under the new [proposed] rate[s]” and incremental or marginal costs are those costs that are directly required in order to serve the new load, and “that would not be incurred but for the new load.” Sunk costs, such as depreciation related expenses from investments made in prior years, are not included. Rates that are justified solely on an economic basis may not recover as much revenue as would rates that are justified on a cost of service basis. However, all ratepayers are still better off if the rates result in sufficient revenue to make some contribution to embedded costs that would otherwise be borne by existing ratepayers.²⁰

BC Hydro explains that a cost of service based justification refers to revenues being sufficient to recover embedded costs, i.e., those costs described in BC Hydro's revenue requirement. These costs include sunk costs such as depreciation related expenses from investments made in prior years, as well as cost of energy, operating and other costs. A rate that fully recovers its embedded costs indicates that customers which take service under the rate are contributing towards BC Hydro's embedded costs in a manner consistent with how other ratepayers contribute to the recovery of such costs.²¹

BC Hydro submits that the proposed Overnight Rate has a cost of service basis and also provides benefits to ratepayers (i.e., an economic basis). The proposed Demand Transition Rate will provide benefits to ratepayers and so it also has an economic basis. Therefore, it follows that the Fleet Electrification Rates, as proposed, would be lawful and are within the BCUC's jurisdiction to approve.²²

¹⁷ Exhibit B-1, p. 10.

¹⁸ Ibid., p. 13.

¹⁹ Ibid., p. 13.

²⁰ BC Hydro Final Argument, p. 12; Exhibit B-4, BCUC IR 16.1.

²¹ Exhibit B-4, BCUC IR 16.1.

²² Exhibit B-1, p. 13.

3.0 Issues Arising

The Panel identified a number of issues during the review of the Application. These issues are:

- The calculation to support the ratepayer economic justification for the proposed rates, including the treatment of Basic Charge, the use of currently out of date rate escalation and marginal cost of energy inputs, estimated marginal cost of distribution capacity, and assumptions on the proportion of incremental load;
- The calculation to support the cost of service justification of the proposed rates, including the use of currently outdated rate escalation input, the appropriate cost escalation factor, and measurement of coincident versus non-coincident peak;
- Stability of the Revenue to Cost ratio for the Overnight Rate between F2024 to F2029; and
- Other alternatives to BC Hydro’s proposed terms and conditions, including the definition of “Billing Demand” under the Overnight Rate, other suggestions on the terms and conditions on the Demand Transition Rate, and the times during which a demand change is exempted under the Overnight Rate.

3.1 Ratepayer Economic Justification for the Proposed Rates

As noted in subsection 2.4, BC Hydro provided a ratepayer economic assessment to estimate the impact on electricity rates for all ratepayers due to marginal changes in utility revenues and costs from each of the proposed Fleet Electrification Rates.²³ The results of BC Hydro’s economic assessment are expressed as a Ratepayer Benefit Cost Ratio, which is the ratio of the net present value of the incremental revenues divided by the net present value of the incremental or marginal cost over a specified time period.²⁴ A Ratepayer Benefit Cost Ratio above one indicates a positive ratepayer impact.

BC Hydro calculated the Ratepayer Benefit Cost Ratio of each of the proposed rates over five, ten and fifteen-year time periods under several scenarios. BC Hydro provided a detailed list of the key assumptions used in the analyses in Appendix E of the Application and these were explored in-depth through information requests (IRs) in the course of the proceeding.

Overnight Rate

The results of the economic analysis for the Overnight Rate (base case scenario) are shown below in Table 1 (reproduced from Table 4 of the Application):²⁵

Table 1: Overnight Rate Ratepayer Impact

Time Period (Years)	Ratepayer Benefit Cost Ratio
5	1.13
10	1.43
15	1.42

²³ Exhibit B-1, Appendix E, p. 1.

²⁴ Ibid., footnote 16, p. 37.

²⁵ Ibid., Table 4, p. 37.

BC Hydro submits that the above results demonstrate that the incremental revenues received from the new load served under the Overnight Rate will meet or exceed the incremental cost of serving the new load. Therefore, ratepayers will not be harmed, and are expected to benefit from the new load.²⁶

Demand Transition Rate

The results of the economic analysis for the Demand Transition Rate (base case scenario) are shown below in Table 2 (reproduced from Table 7 of the Application).²⁷

Table 2: Demand Transition Rate Ratepayer Impact

Time Period for Load Factor	F2021 - F2025	F2026 - F2029	F2030 - F2034
Load Factor	15%	30%	52%
Time Period used for Ratepayer Benefit Cost Analysis	5 Years F2020-F2024	10 Years F2020-F2029	15 Years F2020-F2034
Ratepayer Benefit Cost Ratio	0.74	1.04	1.16

BC Hydro submits that these results demonstrate that the incremental revenues from the new load served under the Demand Transition Rate will exceed the incremental cost of serving the new load in the ten- and fifteen-year time periods. Therefore, ratepayers benefit from the new load in the “medium and longer” term.²⁸

Intervenors raised in their final arguments the following issues related to BC Hydro’s economic assessment of the proposed rates:

- The omission of the Basic Charge in the economic analyses of the Fleet Electrification Rates and its impact on incremental meter and billing costs on the Overnight Rate;
- The use of outdated rate escalations and marginal cost of energy assumptions on both the Overnight Rate and Demand Transition Rate;
- The appropriateness of the estimated marginal cost of distribution capacity assumption on the Overnight Rate; and
- The reliance on the assumption that all load from the Fleet Electrification Rates is incremental.

The subsections that follow discuss these issues.

3.1.1 Omission of the Basic Charge

BC Hydro proposes a basic charge of 27.52 cents per day in F2022 and 26.92 cents per day in F2021 (escalated in each year by the general rate increase) for the Overnight Rate and Demand Transition Rate, respectively. BC Hydro clarified that the basic charge was excluded from the economic analyses of the Fleet Electrification Rates for simplicity and submits that it is not material.²⁹ BC Hydro stated incremental revenues included in the

²⁶ BC Hydro Final Argument, p. 15.

²⁷ Exhibit B-1, Table 7, p. 47.

²⁸ BC Hydro Final Argument, p. 15.

²⁹ Exhibit B-4, BCUC IR 17.1.

economic analyses are from the benefit attributed to the energy charge only for the Overnight Rate, and the energy and demand charges for the Demand Transition Rate.³⁰ However, BC Hydro states that it included a proxy cost for incremental billing and metering estimate of \$350,000 based on the solution for the Overnight Rate, as described in subsection 4.5 of the Application.³¹ BC Hydro does not anticipate that the Demand Transition Rate will result in incremental metering and billing costs.³²

Intervener Arguments

BCOAPO expresses concern that the economic analyses have not taken into consideration the incremental costs associated with the provision of the meter and the billing of the accounts taking service under the Fleet Electrification Rates. BCOAPO submits:

The economic analyses performed by BC Hydro did not include the basic charge in the determination of the Ratepayer Benefit Cost Ratios. However, BC Hydro has acknowledged that the Basic Charge does not cover of the *[sic]* full customer costs (e.g., metering, billing and collecting) associated with an LGS (or Fleet Electrification). While these costs may be small, their inclusion would reduce the Benefit Cost Ratios.³³

BC Hydro submits that BCOAPO incorrectly suggests that metering and billing costs were not included in the economic analyses performed by BC Hydro because the basic charge was not included in the revenue calculations in the economic analyses. BC Hydro reiterates that it included an estimate of \$350,000 for utilizing a transmission and billing solution in the economic analysis of the Overnight Rate. It does not anticipate that the Demand Transition Rate will result in incremental metering and billing costs.³⁴

In BC Hydro's view, similar to other BC Hydro rates, the basic charge only recovers a portion of the customer related costs, such as meter reading and billing, but the remaining customer related costs are recovered in the energy charge. While BC Hydro confirms that BCOAPO is correct that the basic charge was not included in the revenue calculations in the economic analyses, BC Hydro submits "That means there is a slight underestimate of BC Hydro's expected revenues and, if the basic charge was included, there would be a slight increase in the Benefit Cost Ratios."³⁵

Panel Discussion

BC Hydro's economic analyses included an estimated cost of \$350,000 for utilizing a transmission and billing solution for the Overnight Rate and did not include any revenue from the basic charge for either of the proposed rates. The Panel acknowledges BC Hydro's submission that the exclusion of the basic charge in the economic analyses will not have a material impact on the Ratepayer Benefit Cost Ratios. Further, if the basic charge revenue were included in the economic analyses, the resulting Ratepayer Benefit Cost Ratios would be slightly higher. Therefore, the Panel is satisfied that BC Hydro's economic analyses adequately capture customer

³⁰ Exhibit B-4, BCUC IR 17.1, 17.1.1.

³¹ Exhibit B-1, Appendix E, p. 5.

³² BC Hydro Reply Argument, p. 7.

³³ BCOAPO Final Argument, p. 3.

³⁴ BC Hydro Reply Argument, p. 7.

³⁵ Ibid.

related-costs such as meter reading and billing and provide a reasonable economic justification for the Fleet Electrification Rates.

3.1.2 Use of Outdated Rate Escalations and Marginal Cost of Energy

BCOAPO submits that rate escalations used in determining the incremental revenues from the proposed rates do not reflect BC Hydro's revised F2020-F2024 rate escalations per Exhibit B-11 from BC Hydro's F2020-F2021 Revenue Requirements Application (RRA) proceeding.³⁶

On February 25, 2019, BC Hydro submitted its Fiscal 2020 to F2021 Revenue Requirements Application (F2020-F2021 RRA) to the BCUC requesting, among other things, approval of an increase in rates by 6.85 percent, effective April 1, 2019 (F2020), and an increase in rates by 0.72 percent, effective April 1, 2020 (F2021). On August 22, 2019, BC Hydro filed an evidentiary update to the F2020-F2021 RRA (Exhibit B-11) which amended, among other things, its proposal regarding F2021 rates such that BC Hydro now proposes a rate decrease of 0.99 percent for F2021, with no change to the approval sought for F2020 rates. The F2020-F2021 RRA is currently being reviewed in a separate proceeding.

In the economic analyses, BC Hydro used a rate escalation assumption of 6.85 percent for F2022 and 0.72 percent for F2021.³⁷ BC Hydro also used a marginal energy cost set to the Mid-C market price forecast using the ABB Fall 2017 Reference Case in the economic analyses.³⁸

Position of Parties

BCOAPO submits that using the revised rate escalations in the BC Hydro F2020-2021 RRA would "slightly lower" the Ratepayer Benefit Cost Ratio of the Overnight Rate in the base case scenario in the five-year period and also "slightly lower" the Ratepayer Benefit Cost Ratios of the Demand Transition Rate in the base case scenario for all time frames.³⁹

BCOAPO further submits that updating the economic analyses for the 2018 Mid-C market price forecast (rather than using the ABB F2017 Reference Case forecast of the Mid-C market price) would reduce the Ratepayer Benefit Cost Ratios of both the Overnight Rate and Demand Transition Rate for all three time frames.⁴⁰

In its reply argument, BC Hydro acknowledges the lower Ratepayer Benefit Cost Ratios submitted by BCOAPO with respect to using the revised F2021 rate escalation and the 2018 Mid-C market price forecast, but submits that the ratios are only lowered slightly and that they do not change the conclusions of BC Hydro's economic analyses. BC Hydro states in both cases (i.e. a revised rate escalation and use of an updated Mid-C market price), the Ratepayer Benefit Cost Ratios are still all greater than one, with the exception of the five-year Ratepayer

³⁶ BCOAPO Final Argument, p. 4.

³⁷ Exhibit B-3, Attachment "02_01_BCH_Fleet_ELEC_RD_APP_APPX_E_ATT_01", Tab "TOC" and "Input".

³⁸ Exhibit B-1, p. 36; Exhibit B-5, BCOAPO IR 14.2.

³⁹ BCOAPO Final Argument, p. 4.

⁴⁰ Ibid.

Benefit Cost Ratio for the Demand Transition Rate Base Case, which was below one using the original rate escalation and 2017 Mid-C market price forecast.⁴¹

Panel Discussion

The Panel notes that the Application was filed on August 7, 2019, while Exhibit B-11 in the BC Hydro F2020-2021 RRA proceeding referenced by BCOAPO was filed on August 22, 2019. Therefore, the Panel accepts that the rate escalation assumptions used by BC Hydro in this Application were reasonable based on the information available at the time of the filing.

However, the Panel acknowledges the concern raised by BCOAPO. As presented in Tables 3 and 4 below, the Ratepayer Benefit Cost Ratios for both Fleet Electrification Rates would be slightly lower using the revised rate escalations in the F2020-F2021 RRA:

**Table 3: Ratepayer Benefit Cost Ratios for the Overnight Rate
using Revised Rate Escalations in the F2020-2021 RRA**

	Using Assumed Rate Escalation in Application ⁴²	Using F2020-2021 RRA rate escalation ⁴³
5-Year	1.13	1.11
10-Year	1.43	1.43
15-Year	1.42	1.42

**Table 4: Ratepayer Benefit Cost Ratios
for the Demand Transition Rate using Revised Rate
Escalations in the F2020-F2021 RRA**

	Using Assumed Rate Escalation in Application ⁴⁴	Using F2020-2021 RRA rate escalation ⁴⁵
5-Year	0.74	0.73
10-Year	1.04	1.02
15-Year	1.16	1.14

The Panel also acknowledges that it may have been reasonable for BC Hydro to use the 2018 Mid-C market price forecast rather than the 2017 forecast. As presented in Tables 5 and 6 below, the Ratepayer Benefit Cost Ratios for both Fleet Electrification Rates would also be slightly lower:

⁴¹ BC Hydro Reply Argument, p. 8.

⁴² Exhibit B-1, Table 4, p. 37.

⁴³ Exhibit B-5, BCOAPO IR 1.5.6.

⁴⁴ Exhibit B-1, Table 7, p. 47.

⁴⁵ Exhibit B-5, BCOAPO IR 1.7.4.

**Table 5: Ratepayer Benefit Cost Ratios for the Overnight Rate
using 2018 Mid-C Market Price Forecast**

	Using 2017 Mid-C forecast ⁴⁶	Using 2018 Mid-C forecast ⁴⁷
5-Year	1.13	1.11
10-Year	1.43	1.38
15-Year	1.42	1.39

**Table 6: Ratepayer Benefit Cost Ratios for the Demand Transition Rate
using 2018 Mid-C Market Price Forecast**

	Using 2017 Mid-C forecast ⁴⁸	Using 2018 Mid-C forecast ⁴⁹
5-Year	0.74	0.73
10-Year	1.04	1.02
15-Year	1.16	1.15

In reviewing the tables above, the Panel notes that the Ratepayer Benefit Cost Ratio for the Overnight Rate in the 5 year time period and the Ratepayer Benefit Cost Ratios for both Fleet Electrification Rates in the ten- and fifteen-year time periods remain at or above 1.0 using the F2020-2021 RRA rate escalation and the 2018 Mid-C market price forecast, respectively. Accordingly, the Panel is satisfied with the economic analyses as set out in the Application and considers that revising the rate escalation assumption and Mid-C market price forecast as proposed by BCOAPO would not impact the Panel's overall conclusions regarding whether the Fleet Electrification Rates have an economic justification.

In general, the Panel recognizes that there is a considerable degree of uncertainty in the input assumptions to calculate the Ratepayer Benefit Cost ratios, particularly in consideration that the proposed Fleet Electrification Rates are new, and are sensitive to the schedule and configuration fleet conversion, uptake under the Fleet Electrification Rates, and the load factor of the new fleet charging load.⁵⁰ Nonetheless, the Panel considers that the ratepayer economic justification as expressed by the Ratepayer Benefit Cost Ratios is an indication of the degree of reasonableness of the proposed Fleet Electrification Rates.

3.1.3 Appropriateness of Estimated Marginal Cost of Distribution Capacity

In the Application, BC Hydro states that distribution capacity marginal costs are asset specific, therefore they will vary based on the specific location and size of the new load in addition to how the new load interconnects to the existing distribution system. Given this specificity, BC Hydro states that it analyzed several distribution capacity marginal cost scenarios (three scenarios for the Overnight Rate and two scenarios for the Demand Transition Rate).⁵¹

⁴⁶ Exhibit B-1, Table 4, p. 37.

⁴⁷ Exhibit B-5, BCOAPO IR 14.2.1.

⁴⁸ Exhibit B-1, Table 7, p. 47.

⁴⁹ Exhibit B-5, BCOAPO IR 18.2.1.

⁵⁰ Exhibit B-1, p. 45.

⁵¹ Ibid., Appendix E, pp. 2, 6-8.

BC Hydro used a \$15/kW-year assumption for the estimated marginal cost of distribution capacity in the Demand Transition Rate and Overnight Rate base case scenarios.⁵² The amount is a proxy for BC Hydro's maximum distribution extension contribution as provided by its distribution extension policy (Section 8.3 of the Terms and Conditions of BC Hydro's Electric Tariff).⁵³ The results of the economic analyses using this assumption are provided in subsection 3.1 of these reasons for decision.

The results of the economic analysis of the two other distribution capacity marginal cost scenarios (\$35/kW-year marginal cost of distribution capacity and \$25/kW-year marginal cost of distribution capacity) for the Overnight Rate are shown below in Tables 7 and 8 (reproduced from Tables 4 and 5, respectively in Appendix E of the Application):⁵⁴

**Table 7: \$35/kW-year Marginal Cost of Distribution Capacity
for Overnight Rate Ratepayer Impact**

Time Period (Years)	Participant Bill Saving (Percent %)	Ratepayer Benefit Cost Ratio
5	67	0.8
10	62	1.0
15	61	1.0

**Table 8: \$25/kW-year Marginal Cost of Distribution Capacity
for Overnight Rate Ratepayer Impact**

Time Period (Years)	Participant Bill Saving (Percent %)	Ratepayer Benefit Cost Ratio
5	67	0.9
10	62	1.2
15	61	1.2

The results of one other distribution capacity marginal cost scenario for the Demand Transition Rate (\$25/kW-year marginal cost of distribution capacity) are shown below in Table 9 (reproduced from Tables 7 in Appendix E of the Application):⁵⁵

⁵² Ibid., Appendix E, Table 2, p. 4.

⁵³ Exhibit B-1, Appendix E, pp. 2–3.

⁵⁴ Ibid., Appendix E, pp. 6–7.

⁵⁵ Ibid., Appendix E, p. 8.

**Table 9: \$25/kW-year Marginal Cost of Distribution Capacity
for Demand Transition Rate Ratepayer Impact**

Time Period (Years)	Participant Bill Saving (Percent %)	Ratepayer Benefit Cost Ratio
5	47	0.7
10	26	1.0
15	13	1.1

Position of Parties

BCOAPO submits that the appropriate distribution capacity marginal cost for Overnight Rate base case should be \$25-kW/year (i.e., \$15/kW-year plus \$10/kW-year (30% of the \$35/kW distribution substation marginal cost)) rather than \$15/kW-year to allow for incremental non-bulk transmission capacity costs.⁵⁶ In its reply argument, BC Hydro acknowledges that there is some uncertainty regarding what distribution capacity marginal cost to use in the economic analysis because it will vary by customer site. This is why it analyzed a range of distribution capacity marginal costs. BC Hydro states the distribution capacity marginal cost of \$25/kW-year suggested by BCOAPO is reflected in Scenario 2 of the Overnight Rate in the Application, which results in slightly lower Ratepayer Benefit Cost Ratios in all three time periods.⁵⁷

Panel Discussion

The Panel accepts BC Hydro's explanation that distribution capacity marginal cost will be customer specific and will vary by customer site. Accordingly, there is a reasonable degree of uncertainty inherent in any estimate of these costs. The Panel notes that BC Hydro included alternative scenarios in the Application, which included the estimated distribution capacity marginal cost of \$25/kW-year, as proposed by BCOAPO. The Panel observes that using the \$25/kW-year value results in slightly lower Ratepayer Benefit Cost ratios for the five-, ten- and fifteen-year time periods. However, as shown in Tables 8 and 9 above, the Ratepayer Benefit Cost ratios using a distribution capacity marginal cost of \$25/kW-year remain at or above 1.0 for the ten- and fifteen-year time periods for both Fleet Electrification Rates. Accordingly, the Panel is satisfied that the economic analyses as set out in the Application are sufficient and revising the distribution capacity margin as proposed by BCOAPO would not impact the Panel's overall conclusions regarding whether the Fleet Electrification Rates have an economic justification.

3.1.4 Assumption that All Load is Incremental

As noted in subsection 2.4 above, BC Hydro's economic justification of the Fleet Electrification Rates is based on the proposed rate schedules resulting in incremental revenues that exceed marginal costs. BC Hydro submits that the incremental revenues arise because this new load does not currently exist in BC Hydro's service territory.⁵⁸

⁵⁶ BCOAPO Final Argument, p. 4.

⁵⁷ BC Hydro Reply Argument, p. 9.

⁵⁸ Exhibit B-1, pp. 33, 43.

For the five-year period in the economic analysis where distribution capacity marginal cost is \$35 /kW-year 1 for the Overnight Rate, BC Hydro stated that 60 per cent of the load must be viewed as incremental in order for the Ratepayer Benefit Cost Ratio to be 1.0 or greater.⁵⁹

Intervener Arguments

BCOAPO submits that the issue is not whether the load currently exists but “whether it will materialize over the next 15 years even if BC Hydro did not offer the proposed Fleet Electrification Rates.”⁶⁰ While BCOAPO accepts that the LGS Rate demand charge is a barrier to the introduction of fleet electrification, it does not accept that it is an “absolute barrier” and that no fleet electrification will occur over the next 15 years if only the LGS rate were available.⁶¹ BCOAPO submits that the first five years are the most important in determining if the rates are justified on an economic basis because fleet electrification will occur in the long-term. BCOAPO notes both TransLink and BC Transit are publicly owned transit providers with plans for fleet electrification as part of their commitment and contribution to GHG reductions (per legislated targets).⁶²

Therefore, BCOAPO submits that the Demand Transition Rate cannot be justified on an economic basis as the Ratepayer Benefit Cost Ratio is “significantly less than 1.0” over the five-year time period.⁶³ In addition, BCOAPO submits that the Overnight Rate is not justified on an economic basis. BCOAPO calculates that the percentage of load that must be incremental (in the economic analysis of Scenario 1) for the Ratepayer Benefit Cost Ratio of the five-year period to be 1.0 or greater “must be” materially higher than the 60 percent that was submitted by BC Hydro.⁶⁴ When considered in conjunction with the other issues in the economic analysis noted in the subsections above, BCOAPO submits that the economic basis for the Overnight Rate has not been justified.⁶⁵

In reply, BC Hydro submits that the letters by BC Transit and TransLink do not state that they will electrify their fleets in the absence of the Fleet Electrification Rates. Rather, the evidentiary record of this proceeding makes clear that the LGS Rate demand charge is a barrier to meeting the fleet electrification goals of BC Transit, TransLink and the Port of Vancouver.⁶⁶

Panel Discussion

The Panel is satisfied based on the evidence that the LGS Rate demand charge is a barrier to meeting electrification goals. The Panel notes that BC Hydro has not submitted that 60 percent of Fleet Electrification load is expected to be incremental. Rather, BC Hydro used this value as part of its analysis in support of the rates, which the Panel finds to be an important distinction. The Panel notes that BCOAPO did not provide evidence to support its assertion that fleet electrification will occur in the long term without these two rate schedules in place. Additionally, BCOAPO has not provided any evidence in support of its assertion that the first five years are the most important in determining if the rates are justified on an economic basis. Accordingly, the

⁵⁹ Exhibit B-5, BCOAPO IR 14.1.2.

⁶⁰ BCOAPO Final Argument, p. 4.

⁶¹ Ibid., p. 5.

⁶² Ibid., p. 5.

⁶³ Ibid., p. 6.

⁶⁴ Ibid., p. 6, footnote 34.

⁶⁵ Ibid., p. 6.

⁶⁶ BC Hydro Reply Argument, p. 9.

Panel finds the economic analysis as provided by BC Hydro is a reasonable basis to evaluate the economics of the Fleet Electrification Rates.

3.2 Cost of Service Justification for the Proposed Rates

As noted in subsection 2.4, BC Hydro provided a cost of service assessment to determine the extent to which revenues from electricity sales of the Fleet Electrification Rates offset BC Hydro's embedded costs.⁶⁷ The results of BC Hydro's cost of service assessment are expressed as a Revenue to Cost ratio, where a ratio which is equal to or greater than 100 percent, is an indication that customers which take service under the rate are contributing towards BC Hydro's embedded costs in a manner consistent with how other ratepayers contribute to the recovery of such costs.⁶⁸

BC Hydro states that the fully embedded cost of service analysis presented in Appendix F of the Application on the Overnight Rate and the Demand Transition Rate uses the costs described in BC Hydro's RRA and the allocation factors described in BC Hydro's fully allocated cost of service studies.⁶⁹ BC Hydro further states this methodology uses the industry standard and BCUC approved embedded cost methodology to allocate accounting costs to rate classes and examine the Revenue to Cost ratios of rate classes.⁷⁰

Overnight Rate

For the Overnight Rate, BC Hydro estimates that serving this new load as proposed will result in a Revenue to Cost ratio of 104 per cent in F2029. BC Hydro explains that because the Overnight Rate has stable pricing that strongly encourages a stable load shape, the Revenue to Cost ratio is also expected to be stable.⁷¹

Demand Transition Rate

For the Demand Transition Rate, BC Hydro states that the extent to which revenues from the Demand Transition Rate recover BC Hydro's embedded cost of service is sensitive to the load factor of the new load served under this rate, which in turn depends on the schedule and configuration of fleet conversion.⁷² The Revenue to Cost ratio for the Demand Transition Rate is expected to vary over time, as both the load shape and the pricing will change year over year. Therefore, three cost of service analyses were undertaken for the Demand Transition Rate, using three different sets of assumptions for load factor and pricing.⁷³ Table 10 below (reproduced from Table 6 in the Application) illustrates the extent to which revenues from electricity sales under the Demand Transition Rate offset BC Hydro's embedded costs at years F2024, F2029, and F2032:⁷⁴

⁶⁷ Exhibit B-1, Appendix F, p. 1.

⁶⁸ Exhibit B-4, BCUC IR 16.1.

⁶⁹ Ibid., BCUC IR 18.2.

⁷⁰ BCUC initially directed the use of the method of allocating system peak related costs in Order G-111-07 issued September 18, 2007, and again approved its use in Order G-47-16 pursuant to BC Hydro's F2016 Cost of Service Study. (Exhibit B-1, p. 35)

⁷¹ Exhibit B-1, p. 35.

⁷² Ibid., p. 45.

⁷³ Exhibit B-1, Appendix F, pp. 3-4.

⁷⁴ Ibid., p. 45.

Table 10: Demand Transition Rate Recovery of Embedded Cost of Service

Year	F2024 (%)	F2029 (%)	F2032 (%)
Load Factor	15	30	50
Estimated Revenue to Cost Ratio	43	84	105

75

BCOAPO identified a number of shortcomings in the cost of service analysis and submits that after accounting for the shortcoming in the cost of service analysis there is no cost of service justification for the Overnight Rate.⁷⁶ The following subsections discuss each of the issues identified regarding the cost of service analysis.

3.2.1 Use of Outdated Assumptions

BC Hydro uses a rate escalation assumption to estimate revenue generated from the proposed rates in future years.⁷⁷ In BC Hydro's Application, the rate escalation used to determine revenues for F2029 is based on BC Hydro's F2020-F2021 RRA for F2021 and F2022, the rate forecast from the Government Review Phase 1 for F2022 to F2024 and the Consumer Price Index (CPI) from F2025 onwards.⁷⁸

As discussed in subsection 3.1.2 above, BC Hydro submitted its F2020-F2021 RRA to the BCUC on February 25, 2019 requesting, among other things, approval of an increase in rates by 6.85 percent for F2020 and an increase in rates by 0.72 percent for F2021. On August 22, 2019, BC Hydro filed an evidentiary update as Exhibit B-11 to the F2020-F2021 RRA which amended, among other things, its proposal regarding Fiscal 2021 rates such that BC Hydro now proposes a rate decrease of 0.99 percent for F2021, with no change to the approval sought for F2020 rates. The F2020-F2021 RRA is currently being reviewed in a separate proceeding.

Position of Parties

BCOAPO submits that for the Overnight Rate, the rate escalation used to determine revenues for F2029 is based on BC Hydro's initial F2020-F2021 RRA, the rate forecast from the Government Review Phase 1 for F2022-F2024 and the CPI thereafter. Updating the rate escalation to reflect BC Hydro's revised F2020-F2024 rate escalation per Exhibit B-11 from BC Hydro's F2020-F2021 RRA would lower the F2029 Revenue to Cost Ratio to 99%.⁷⁹

In reply, BC Hydro confirms that BCOAPO's observation is true, but notes that given the result is still very close to unity, BC Hydro submits the cost of service justification holds.⁸⁰

⁷⁵ Load factor is the ratio of energy consumed during a given period of time, to that which would have been consumed if the load had operated at peak 100 per cent of that time. A high load factor indicates steady usage. A low load factor indicates the recorded demand was not present for very long. (Reference: BC Hydro 2015 Rate Design Application, Exhibit B-1, Appendix B, p. 5)

⁷⁶ BCOAPO Final Argument, p. 13.

⁷⁷ Exhibit B-3, Attachment "03_01_BCH_Fleet_ELEC_RD_APP_APPX_F_ATT_01", Tab "Calculation".

⁷⁸ Ibid., Attachment "03_01_BCH_Fleet_ELEC_RD_APP_APPX_F_ATT_01", Tab "TOC".

⁷⁹ BCOAPO Final Argument, p. 7.

⁸⁰ BC Hydro Reply Argument, p. 10.

Panel Discussion and Determination

As discussed in subsection 3.1.2 above, the Panel notes that the Application was filed on August 7, 2019, while the evidentiary update to the BC Hydro F2020-2021 RRA referenced by BCOAPO was filed on August 22, 2019. The Panel considers that BC Hydro used a reasonable assumption based on information available at the time of the filing.

Also as discussed in subsection 3.1.2, the Panel recognizes that there is a considerable degree of uncertainty in the input assumptions used to calculate the Revenue to Cost ratios, and considers that the cost of service analysis as expressed by the revenue cost ratios is an indication of the degree of reasonableness of the proposed rates. In this instance, the Panel is satisfied that the Revenue to Cost ratio of 0.99 for the Overnight Rate is very close to unity and is within a range of reasonableness. **Therefore, the Panel finds that a Revenue to Cost ratio of 0.99 does not imply that the resulting rates for the service are unjust, unfair, unduly preferential or unduly discriminatory. The Panel finds the Overnight Rate is acceptable on a cost of service basis.**

3.2.2 Cost Escalation Factor

With respect to the Revenue to Cost ratios, rate escalations are used to estimate future revenues in the numerator of the cost of service analysis, whereas cost components are assumed to be stable and only escalated by CPI to address inflation in the denominator of the cost of service analysis.⁸¹ BC Hydro explains that the Cost of Service Studies it has conducted show the unit cost of each cost component has been relatively stable over the past several years. Furthermore, for the purpose of this Application, BC Hydro assumed the total load and the number of total customer accounts aside from new fleet rate customer accounts remain unchanged. These factors are not expected to impact the cost of service on a unitized basis. BC Hydro states that the total compound increase between F2017 and F2029 is estimated to be 29.7 percent and 33.5 percent for CPI and rate escalation, respectively.⁸²

Position of Parties

BCOAPO submits that while the rates used to calculate the revenues used in the numerator were escalated in accordance with the assumptions in BC Hydro's F2020-F2021 RRA, the costs used in the denominator were escalated using the CPI. BCOAPO submits that a more reasonable assumption would have been to assume that the revenue requirement increases at the same percentage as the rates.⁸³ BCOAPO further notes that aligning the cost increase with the rate increases would increase the denominator in the Revenue to Cost ratio calculation and further reduce the Revenue to Cost ratio.⁸⁴

In reply, BC Hydro states that the rate escalator reflects how BC Hydro is going to recover its overall costs of service in the future. However, individual cost items will not necessarily all increase in the same manner as the rate escalator. BC Hydro believes that the CPI, which, by definition, measures the increase in prices of goods and services, is more general and applicable to the costs escalation than the rate escalator would be.⁸⁵

⁸¹ Exhibit B-4, BCUC IR 18.2.

⁸² Exhibit B-5, BCOAPO IR 12.2.

⁸³ BCOAPO Final Argument, p. 7.

⁸⁴ Ibid.

⁸⁵ BC Hydro Reply Argument, p. 10.

Panel Discussion

The Panel agrees that if costs were estimated to increase at the same rate as revenue requirement increases the Revenue to Cost ratio ratios would be lower. However, the Panel notes that revenue requirement increases are dependant on many factors including forecasts of cost of service items such as depreciation and interest expense, and volume of energy sales. These items are not likely to be subject to the same changes as other individual cost items. Accordingly, the Panel is satisfied that revenue requirement related rate escalator is likely to differ from cost escalation and therefore escalating costs at CPI for the Revenue to Cost calculations is reasonable.

3.2.3 Overnight Rate – Measurement of Coincident and Non-coincident Peak

BC Hydro explains that the cost of service analysis is performed such that individual revenue requirement application cost items are allocated to rate classes in the widely-adopted three-step process: 1) costs are first functionalized into four functions: Generation, Transmission, Distribution and Customer Care; then 2) costs in each Function are classified as customer, energy, or demand related; finally, 3) the classified costs are allocated to rate classes based on the various allocation factors (e.g., proportion of energy, coincident peak, non-coincident peak, or customer number).⁸⁶

Position of Parties

BCOAPO states that for purposes of determining the coincident peak and non-coincident peak values for the Overnight load, BC Hydro has used the hourly energy values as opposed to the (higher) hourly demand values. For purposes of allocating capacity costs, BCOAPO submits that the higher hourly demand values should be used as these reflect the capacity that is required to serve the load. Using these values would further reduce the Revenue to Cost ratio for the Overnight Rate.⁸⁷

In response, BC Hydro confirms that its standard methodology for fully allocated cost of service studies was used, which relies on hourly energy data. Hourly energy data is used for BC Hydro's fully allocated cost of service studies because demand data is not available across all our rate classes (for example the Residential Rate Class). Using demand data for rate classes that have demand metering, and hourly energy data for rate classes that do not have demand data would produce results that are not internally consistent.⁸⁸

Panel Discussion

The Panel is satisfied that it is reasonable to determine peak values using the standard methodology that BC Hydro uses in its fully allocated cost of service studies, which relies on hourly energy data. This methodology was subject to BCUC review in the most recent BC Hydro 2015 Rate Design Application proceeding.⁸⁹ The Panel is of the view that introducing an alternative methodology to determine peak values in this proceeding is not reasonable or appropriate. Further, the Panel accepts that BC Hydro does not have demand data available across all rate classes. The Panel concurs with BC Hydro that using demand data for rate classes that have

⁸⁶ Exhibit B-1, Appendix F, p. 1.

⁸⁷ BCOAPO Final Argument, p. 7.

⁸⁸ BC Hydro Reply Argument, pp. 10-11.

⁸⁹ [BC Hydro 2015 Rate Design](#).

demand metering, and hourly energy data for rate classes that do not have demand data would produce results that are not internally consistent.

3.2.4 Overnight Rate - Stability of the Revenue to Cost Ratio between F2024 and F2029

For the Overnight Rate, BC Hydro states that as the load shape and pricing of service under the Overnight Rate are expected to be stable year over year, the Revenue to Cost ratio should also be stable year over year. BC Hydro calculates the Revenue to Cost ratio for the Overnight Rate in F2024 using F2024 charges to be 0.94, and the Revenue to Cost ratio in F2029 using F2029 charges to be 1.04.⁹⁰

Position of Parties

BCOAPO submits that while BC Hydro claims that the Revenue to Cost ratios should be stable year over year, the Revenue to Cost ratio for F2024 is materially less than the one calculated for F2029.⁹¹

In reply, BC Hydro clarifies that it expects the Revenue to Cost ratios to be stable after F2029 once fleet conversion is substantially complete.⁹²

Panel Discussion

The Panel is satisfied that it is reasonable to expect that Revenue to Cost ratios may not be stable during the early years of a new rate schedule. The Panel notes that BC Hydro estimates that Revenue to Cost ratios will stabilize by F2029 at which time they will be higher than unity. The Panel also notes that although the Revenue to Cost ratio in F2024 is below unity it is only one one-hundredth of a percentage point below unity. As discussed in subsections 3.1.2 and 3.2.1 above, the Panel recognizes that there is a considerable degree of uncertainty in the input assumptions to calculate the Revenue to Cost ratios and that the Revenue to Cost ratios are an indication of the degree of reasonableness of the proposed rates. In this instance, the Panel is satisfied that the Revenue to Cost ratio results for the Overnight Rate are within a range of reasonableness and do not imply that the resulting rates for the service are unjust, unfair, unduly preferential or unduly discriminatory.

3.3 Alternatives to BC Hydro's proposed terms and conditions for the rates

3.3.1 Definition of "Billing Demand" Under the Overnight Rate

BC Hydro submitted an erratum to the definition of "Billing Demand" contained in the proposed tariff for the Overnight Rate, filed as Appendix B to the Application. The revised definition of Billing Demand would allow customers under the Overnight Rate to be eligible for a discount for customer supplied transformation and BC Hydro's contribution towards an extension based on the customer's highest kW demand in all hours, rather than the highest demand between the hours 06:00 and 21:59 (the period a customer would have to pay for a Demand Charge). BC Hydro explains that the correction reflects what BC Hydro intended when it filed the Application, which is demonstrated by the fact BC Hydro included its contribution based on the highest kW

⁹⁰ Exhibit B-1, Appendix F, p. 3; Exhibit B-4, BCUC IR 21.5.

⁹¹ BCOAPO Final Argument, p. 7.

⁹² BC Hydro Reply Argument, p. 11.

demand during all hours, not just between 06:00 and 21:59, in its economic analysis for Appendix E of the Application.⁹³

According to the proposed rate schedules for the Overnight Rate, the discount offered for customer supplied transformation is as follows: “A discount of 25 ¢ per Billing Period per kW of Billing Demand will be applied to the above charges if a Customer supplies Transformation.”⁹⁴ Regarding BC Hydro’s contribution towards an extension, Section 8.3 of the Terms and Conditions in BC Hydro’s Electric Tariff states:⁹⁵

Except as otherwise provided in this section, the maximum contribution that BC Hydro is prepared to make toward an Extension in Rate Zone I is prepared to make toward an Extension in Rate Zone I is as follows:

Rate Class	Maximum BC Hydro Contribution
Residential	\$1,475 per Dwelling
General Service	\$200 per kW of estimated Billing Demand
Street Lighting	\$150 per fixture
Irrigation	\$150 per kW of estimated Billing Demand

BC Hydro states that it believes if it does not provide such a contribution, the Overnight Rate will be less attractive for potential customers and may be less successful in achieving its fleet electrification objectives. BC Hydro submits that, if it does not provide a transformation discount based on the highest kW demand during all hours, the customer will not receive the full discount since the transformer discount is based on the cost of the transformer, which must be sized for the customer’s maximum demand in the billing period. Therefore, potential customers will not be incented to provide their own transformation as they would under other rate schedules, such as for Large General Service.⁹⁶

Position of Parties

BCOAPO notes that BC Hydro’s contribution towards an extension is meant to recognize that the new load also represents future incremental revenue and that BC Hydro offsets the cost of the extension by a contribution proportional to the estimated billing demand of the new or increased loads. BCOAPO submits the issue is that, for the Overnight Rate, there are only incremental revenues associated with the demand that occurs between the hours 06:00 and 21:59 daily in the Billing Period. BCOAPO submits that the change proposed in Exhibit B-1-1 with respect to the definition of Billing Demand for purposes of determining BC Hydro’s contribution towards an Extension under section 8.3 is inconsistent with the principles underlying the determination of the extension allowance and should not be approved by the BCUC.⁹⁷

The CEC acknowledges that BC Hydro offsets the cost of the extension by a contribution proportional to the estimated billing demand of the new or increased loads and that the maximum contribution would be the same

⁹³ Exhibit B-1-1, p. 2.

⁹⁴ Exhibit B-1-1, Appendix B, p. 1.

⁹⁵ BC Hydro Electric Tariff, Terms and Conditions, Section 8, p. 8-1; Retrieved from: <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/tariff-filings/electric-tariff/bchydro-electric-tariff.pdf>

⁹⁶ Exhibit B-1-1, p. 2.

⁹⁷ BCOAPO Final Argument, p. 9.

as BC Hydro's maximum contribution to serve other LGS customers. The CEC does not identify any reason as to why the extension policy should be altered for the new service and submits that applying the standard extension policy to the new service is appropriate.⁹⁸

No other interveners commented on the revised Billing Demand definition under the Overnight Rate.

BC Hydro submits that its contribution towards an extension is meant to recognize that the new load also represents future incremental revenue. The contribution is usually determined based on the estimated billing demand of the new or increased loads. However, in the case of the Overnight Rate, limiting Billing Demand to the highest kW Demand between the hours 06:00 and 21:59 would limit BC Hydro's contribution towards an extension, because BC Hydro expects customers will charge their fleets under the Overnight Rate mostly between the hours 22:00 and 05:59.⁹⁹

BC Hydro also submits that it would be unfair to customers of the Overnight Rate not to receive a contribution towards an extension because the energy charge of the Overnight Rates captures a portion of demand costs. BC Hydro states this is evident because the Overnight Rate energy charge is higher than the energy charge used in BC Hydro's LGS Rate since it was calculated to recover BC Hydro's residual embedded cost of service, and the Overnight Rate only has a demand charge between the hours 06:00 and 21:59.¹⁰⁰

BC Hydro further notes that customers from a number of rate classes, including some who do not pay billing demand such as Residential and Small General Service, are eligible for BC Hydro contribution towards distribution extension costs as described in section 8 of the Electric Tariff. BC Hydro does not support excluding Overnight Rate customers from being eligible for extension contribution.¹⁰¹

Panel Discussion

The Panel notes that BC Hydro's proposal to contribute towards extension cost and the methodology to offer a discount on customer provided transformer are consistent with the treatment for its other customers. The Panel is satisfied that denying such a contribution may result in the Overnight Rate being less attractive for prospective customers and may decrease the likelihood of achieving BC Hydro's fleet electrification objectives. More importantly, the Panel considers it is essential to offer similar conditions of service for fleet customers as are available to other BC Hydro customers to ensure the Fleet Electrification Rates are fair and non-discriminatory. Accordingly, the Panel considers the revised Billing Demand definition to be reasonable.

3.3.2 Other Proposals for the Demand Transition Rate

CEABC, in its Final Argument, submits the following three proposals for the Demand Transition Rate:

- 1) Rather than a fixed term ending in 2032 for all customers, the term could be set for each customer from the date of that customer's initial service;
- 2) The Demand Charge "holiday" period should be extended to 8 or even 9 years, rather than 6 years; and

⁹⁸ CEC Final Argument, p. 16.

⁹⁹ BC Hydro Reply Argument, p. 12.

¹⁰⁰ BC Hydro Reply Argument, p. 13.

¹⁰¹ Ibid.

- 3) Change the time definition of the peak load that is subject to the Demand Charge to exclude the period between the hours 23:30 and 04:00¹⁰²

BC Hydro Reply

Regarding the first suggestion of setting the term of the Demand Transition Rate for each customer from the date of the customer's initial service, BC Hydro submits that it does not support the term being set for each customer from the date of that customer's initial service.¹⁰³ BC Hydro explains that providing custom start dates would result in 40 different individual rates schedules over the ten years that the Demand Transition Rate is meant to be in place. BC Hydro analyzed the impact of implementing this suggestion and concluded that the resulting complexity limits its practicality.¹⁰⁴

In response to CEABC's second suggestion of extending the period of no demand charges, BC Hydro does not support amending the Demand Transition Rate to extend the number of years of no demand charges.¹⁰⁵ BC Hydro explains that further extending the number of years that no demand charges apply may negatively impact the economics of the proposal for all ratepayers. BC Hydro further notes that BC Hydro originally examined a five-year period of no demand charges which was intended to provide customers mitigation against the financial impacts of the demand charge while they convert their fleets to electricity.¹⁰⁶ However, in response to stakeholder requests for custom start dates for service under the Demand Transition Rate, BC Hydro proposed a six-year period of no demand charges as a compromise, given that custom start dates are not practical.¹⁰⁷

Lastly, BC Hydro does not support changing the time definition of the peak load that is subject to the Demand Charge to exclude the period between the hours 23:30 and 04:00, because in-route bus charging load has limited ability to respond to time of day charges and there would be incremental costs and time required to implement the metering and billing solutions. BC Hydro further notes that such a change may negatively impact the economics for all ratepayers.¹⁰⁸

Panel Discussion

With regards to setting the term of the Demand Transition Rate specific to each customer, the Panel considers the resulting number of different rate schedules would result in increased administrative burden. The Panel agrees with BC Hydro that such a proposal would be practically unreasonable.

As for the suggestion to extend the period of no demand charges, the Panel concurs with BC Hydro that this may have negative impacts on the economics and rates for all ratepayers. The Panel views a six-year period to be a reasonable balance between mitigating the financial impacts of the demand charge for customers when converting their fleets and the financial impacts to the rest of the ratepayers.

¹⁰² CEABC Final Argument, p. 8.

¹⁰³ BC Hydro Reply Argument, p. 3.

¹⁰⁴ *Ibid.*, p. 3.

¹⁰⁵ *Ibid.*, p. 4.

¹⁰⁶ *Ibid.*

¹⁰⁷ *Ibid.*

¹⁰⁸ *Ibid.*

Lastly, the Panel considers that it is not appropriate to change the time definition of peak load subject to the Demand Charge as proposed by CEABC. The Panel is persuaded by BC Hydro's argument that doing so would result in increased costs and time to implement and may have a negative impact on the economics for all ratepayers. Overall, the Panel considers the proposed terms of the Demand Transition Rate contained in the Application to be reasonable.

3.3.3 Extend the Hours during which the Demand Charge is not Charged under the Overnight Rate

Under the Overnight Rate as proposed by BC Hydro, the demand charge is not applicable between the hours 22:00 to 05:59 daily. In CEABC's Final Argument, it proposes to extend the hours during which the demand charge is not charged under the Overnight Rate.¹⁰⁹ CEABC submits that the Overnight Rate could be made even more effective for encouraging the electrification of any fleets that can be recharged in the overnight period if BC Hydro was to "relax" the Zero-Demand-Charge time period by an hour at each end.¹¹⁰ CEABC explains that "BC Hydro's load begins to drop off after 8:00 pm and declines by roughly 300 MW every hour, and it doesn't really increase again until after 7:00 am."¹¹¹ CEABC states that based on the illustrative load profile of depot charging load, there would still be no danger of augmenting the daily peak load if the Zero-Demand-Charge period were extended from 21:00 to 07:00.¹¹²

BC Hydro Reply

BC Hydro does not support extending the overnight period for the Overnight Rate.¹¹³ BC Hydro submits that it determined the overnight period for the Overnight Rate to be between the hours 22:00 and 06:00 based on when BC Hydro's system has spare capacity while still recovering BC Hydro's cost of service.¹¹⁴ BC Hydro also chose the overnight period to meet the customers' depot charging requirements. BC Hydro conducted a sensitivity analysis of customer bills using alternative hours for the overnight period, but it did not conduct such an analysis for expanding the overnight period. BC Hydro also analysed the probability of charging depots triggering distribution station upgrades based on spare capacity during the overnight period of between the hours 22:00 and 06:00, particularly at 22:00, because that is the time with the lowest spare capacity. BC Hydro has not conducted such an analysis based on spare capacity at 21:00, but it reasonably anticipates that the amount of spare capacity available, particularly at the distribution level, will diminish as the number of hours is extended beyond 22:00 and 06:00.¹¹⁵

Panel Discussion

The Panel is satisfied that it is not appropriate to extend the overnight period for the Overnight Rate. The Panel notes that BC Hydro's proposed overnight period was determined based on its analysis of the availability of

¹⁰⁹ CEABC Final Argument, pp. 6-7.

¹¹⁰ Ibid.

¹¹¹ Ibid., p. 6.

¹¹² Ibid., pp. 6-7.

¹¹³ BC Hydro Reply Argument, p. 3.

¹¹⁴ Ibid., p. 2.

¹¹⁵ Ibid., p. 3.

spare capacity. Additionally, the timeframe was based on prospective customer charging requirements. The Panel is persuaded by BC Hydro's submission that it reasonably anticipates that the amount of spare capacity available will diminish as the number of hours extends beyond the proposed period. Accordingly, the Panel agrees with BC Hydro and considers the Overnight Rate as proposed is reasonable and appropriate.

3.4 Investigate the Potential for Using Utility-Scale Batteries and "Smart" Charging

CEABC submits in its Final Argument that in the case of large charging loads, such as those contemplated for the bus fleets, their charging needs could be accommodated with the existing generation and transmission capacities, and even with the existing distribution network facilities. CEABC recommends that "the BCUC suggest that BC Hydro study and report back on the future potential for using the latest modern battery technology and 'smart' scheduling software to more efficiently manage the customer loads to fit more efficiently within BC Hydro's system constraints."¹¹⁶

Position of Parties

BC Hydro respectfully submits that this topic is out of the scope of its Fleet Rate Application; however, it may be relevant to the Integrated Resource Plan that BC Hydro expects to file in the spring of 2021, which would be subject to a separate proceeding.¹¹⁷

Panel Discussion

The purpose of the Application is to review the Fleet Electrification Rates for approval. Therefore, the Panel considers battery technology and 'smart' scheduling software to be outside of the scope of this proceeding. The Panel concurs with BC Hydro that any consideration of battery technology and 'smart' scheduling software, if warranted, would be more appropriately addressed in the proceeding to review BC Hydro's Integrated Resource Plan.

4.0 Determinations on Approvals Sought

BC Hydro submits that both of the Fleet Electrification Rates, as proposed, have an economic basis and the Overnight Rate also has a cost of service basis. Therefore, both of the rates, as proposed, satisfy the minimum standard for rates that are designed to serve public policy objectives. The Fleet Electrification Rates also satisfy the test of being "fair, just, reasonable and not unduly discriminatory" when evaluated against the Bonbright Criteria.¹¹⁸ AMPC, BCSEA, CEC, and CEABC support approval of the Overnight Rate and the Demand Transition Rate.¹¹⁹ BCOAPO submits neither rates should be approved, and section 3.0 above addresses the issues raised by BCOAPO. CEABC also made a number of suggestions on the rate proposals, which subsection 3.3 above addresses.

The Panel's review of the Application considers sections 59 to 60 of the UCA.

¹¹⁶ CEABC Final Argument, p. 9.

¹¹⁷ BC Hydro Reply Argument, p. 5.

¹¹⁸ Ibid., p. 1.

¹¹⁹ AMPC Final Argument, p. 3; BCSEA Final Argument, p. 5; CEABC Final Argument, p. 1; CEC Final Argument, p. 1.

Section 59(1) of the UCA states:

59 (1) A public utility must not make, demand or receive

(a) an unjust, unreasonable, unduly discriminatory or unduly preferential rate for a service provided by it in British Columbia, or

(b) a rate that otherwise contravenes this Act, the regulations, orders of the commission or any other law.

Section 60(1) of the UCA states:

60 (1) In setting a rate under this Act

(a) the commission must consider all matters that it considers proper and relevant affecting the rate,

In addition, the Panel has considered the BC Government's CleanBC plan released on December 5, 2018. The CleanBC plan identifies further efforts in cleaner public transportation as an action to help the reduction of greenhouse gases.¹²⁰ The Panel also considered the BC Government's Mandate letter to BC Hydro dated February 21, 2019, which requests that BC Hydro ensure that its operations align with the BC Government's new climate plan.¹²¹

The Panel notes that CEABC submits in its Final Argument that the effectiveness of the Fleet Electrification Rates in achieving the public policy criteria should be the first order of priority. The other criteria, such as cost efficiency, are secondary considerations that can be used to distinguish between equally effective alternatives; however, they should never supersede the first order of priority.¹²² BC Hydro states in its Final Argument that "In the case of rates that are intended to advance a public policy purpose, such as the Fleet Electrification Rates, the BCUC has held that in order to meet the test of being "fair, just, reasonable and not unduly discriminatory," the rates must stand independently on a cost of service or economic basis, regardless of the merits of the public policy purpose."¹²³

The Panel disagrees with CEABC's position that the effectiveness of the Fleet Electrification Rates in achieving the public policy criteria should be the first order of priority. The Panel notes that section 59(1) of the UCA requires that a public utility must not make, demand or receive an unjust, unreasonable, unduly discriminatory or unduly preferential rate for a service it provides in British Columbia. Therefore, the Panel considers that Fleet Electrification Rates must stand independently on a cost of service or economic basis as required under section 59 of the UCA, regardless of the merits of the public policy purpose.

The Panel is satisfied that the Demand Transition Rate is justified on an economic basis and the Overnight Rate is justified on an economic basis and on a cost of service basis. The Panel finds that the two rates are consistent with the Bonbright Principles. The Panel is also satisfied that the rates are consistent with the public policy

¹²⁰ CleanBC, p. 6; https://blog.gov.bc.ca/app/uploads/sites/436/2019/02/CleanBC_Full_Report_Updated_Mar2019.pdf

¹²¹ <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountability-reports/openness-accountability/bch-mandate-letter-2019-2020.pdf>

¹²² CEABC Final Argument, p. 5.

¹²³ BC Hydro Final Argument, pp. 11-12.

purpose, namely, to reduce greenhouse gas emissions in the transportation sector. Accordingly, the Panel finds the Fleet Electrification Rates are just, fair, reasonable and are not unduly discriminatory or preferential.

For the foregoing reasons, pursuant to sections 59-61 of the UCA the Panel approves the Fleet Electrification Rates as follows:

- **RS 164x – Overnight Rate (150 kW and Over), as shown in Appendix B of the Application, effective April 1, 2021.**
- **RS 165x – Demand Transition Rate (150 kW and Over), as shown in Attachment 1-A to the BC Hydro Reply Argument, effective April 1, 2020 and terminating effective March 31, 2032.**

BC Hydro is directed to file updated tariff sheets reflecting the Overnight Rate and Demand Transition Rate as approved within 15 business days of the date of this order.

5.0 Monitoring and Reporting

BC Hydro proposes to monitor and evaluate these two new optional rates to verify whether they are obtaining the expected benefits, and proposes to provide a three-year evaluation of each rate by way of compliance filing.¹²⁴ Based on the implementation schedule proposed in this Application, the three-year evaluation of the Demand Transition Rate would be completed by December 30, 2023, and the three-year evaluation of the Overnight Rate would be completed by December 30, 2024. BC Hydro explains that a three-year evaluation period is an appropriate trade-off between improvement in the reliability and depth of the evaluation findings that arise from a longer data collection period, and timely risk and performance management.¹²⁵

Throughout the proceeding, BC Hydro has proposed or stated it is amenable to including a number of items in its three-year evaluation report for each respective rate. With respect to load, BC Hydro will monitor the energy, demand, load shape and load factor of new load annually and include this information in its three-year evaluation report.¹²⁶ BC Hydro also states it is amenable to including an assessment of the impact of the Fleet Electrification Rates on BC Hydro's overall system load.¹²⁷

As for the financial impacts of the new rates, BC Hydro intends to monitor new revenue and incremental costs annually and include these in its evaluation reports. Incremental costs to be monitored include metering, billing, costs associated with BCUC proceedings on these rates, and costs to retain a survey contract firm to run customer surveys if needed.¹²⁸ BC Hydro will also report on marginal transmission and distribution related costs, as well as participant electricity costs and bills savings relative to the LGS rate. Lastly, BC Hydro will report on the cost recovery and economic impact on ratepayers.¹²⁹

¹²⁴ Exhibit B-1, p. 52; Exhibit B-4, BCUC IR 19.5.

¹²⁵ Exhibit B-5, BCSEA IR 18.2.

¹²⁶ Exhibit B-1, p. 52.

¹²⁷ Exhibit B-4, BCUC IR 19.1.1.

¹²⁸ Exhibit B-5, BCOAPO IR 21.2.

¹²⁹ Exhibit B-1, p. 53; Exhibit B-4, BCUC IR 19.1.

Regarding other aspects of the two rates, BC Hydro proposes to report on the number and nature of fleet charging operations, reductions to greenhouse gas emission and air pollutants to the extent possible, BC Hydro's assessment of the terms and conditions of fleet electrification rates (including availability), and customer feedback on pricing and terms and conditions.¹³⁰

BC Hydro identifies the key success factors to be customer participation; customer satisfaction with the rates; cost recovery; economic impact on ratepayers; and reduction of greenhouse gas emissions and air pollutants to the extent practical. BC Hydro states that if BC Hydro determines that the outcomes of the evaluations indicate a need to amend the fleet charging rates, BC Hydro will file an application to amend the rates.¹³¹

Position of Parties

The CEC submits that the monitoring and reporting of the economics of the rates are very important in ensuring that there is a valid economic justification for the rates and that non-participating customers are not negatively impacted. The CEC recommends that the BCUC condition its approval of the rates on the appropriate execution of the proposed monitoring and reporting; and confirmation that BC Hydro will develop a proposal for changes in the event the economics demonstrate unreasonable negative impacts.¹³²

AMPC generally supports BC Hydro's Application for Fleet Electrification Rates as filed, particularly BC Hydro's proposal to file a three-year evaluation report for the Demand Transition Rate and Overnight Rate by December 30, 2023 and December 30, 2024, respectively.¹³³

No other parties commented on the three-year evaluation reports.

Panel Determination

BC Hydro is directed to submit a three-year evaluation report for the Demand Transition Rate by December 30, 2023 and a three-year evaluation report for the Overnight Rate by December 30, 2024 as set out in the Attachment to these reasons for decision.

The Panel agrees with the CEC that monitoring and reporting are very important and will serve to determine whether the rates in actual performance will indeed meet the expected economic and cost of service justifications. The Panel finds BC Hydro's proposal for a three-year evaluation report for each of the Demand

¹³⁰ Exhibit B-1, p. 53; Exhibit B-4, BCUC IR 14.6, 19.1, 19.1.1, 19.2.

¹³¹ Exhibit B-4, BCUC IR 19.5.

¹³² CEC Final Argument, p. 18.

¹³³ AMPC Final Argument, p. 3.

Transition Rate and the Overnight Rate to be reasonable. The Panel agrees with BC Hydro that a three-year report period provides a reasonable balance between the benefits associated with a longer data collection period of each rate and opportunities for timely risk and performance management. The Panel is also satisfied that the proposed items to be included in the three-year evaluation reports are appropriate, with one addition. The Panel directs that BC Hydro also includes in the reports an assessment on whether the Fleet Electrification Rates are operating as anticipated and whether there any unanticipated negative impacts on ratepayers and system load, demand and capacity. For clarity, a complete list of the items to be included in the evaluation reports is provided in Attachment 1 of these reasons for decision.

British Columbia Hydro and Power Authority
Fleet Electrification Rate Application

**BC Hydro Three-year Evaluation Report for the Demand Transition Rate and Overnight Rate
Complete List of the Items**

The following items are to be included in the three-year evaluation reports for the Demand Transition Rate and Overnight Rate, respectively:

- Results from monitoring the following items on an annual basis:¹³⁴
 - new revenue;
 - incremental costs (metering, billing, costs associated with BCUC proceedings on these rates, and costs to retain a survey contract firm to run customer surveys if needed);
 - new load (energy, demand, load shape and load factor);
 - customer participation (the number and nature of fleet charging operations);
 - customer feedback.
- Marginal transmission and distribution related costs;¹³⁵
- An assessment of the impact of the Fleet Electrification Rates on BC Hydro's system load;¹³⁶
- Participant electricity costs and bills savings relative to the Large General Service rate;¹³⁷
- Cost recovery,¹³⁸ including the inputs in the cost of service analysis;
- Economic impact on ratepayers,¹³⁹ including the inputs in the economic analysis;
- Reductions to greenhouse gas emission and air pollutants, to the extent possible;¹⁴⁰
- BC Hydro's assessment of the terms and conditions of the Fleet Electrification Rates (including availability);¹⁴¹
- The need, if any, to amend the Fleet Electrification Rates;
- An assessment on whether the Fleet Electrification Rates are operating as anticipated; and
- Any unanticipated negative impacts on ratepayers or system load, demand or capacity.

¹³⁴ Exhibit B-1, pp. 52-53; Exhibit B-4, BCUC IR 19.1.

¹³⁵ Exhibit B-5, BCOAPO IR 21.2.

¹³⁶ Exhibit B-4, BCUC IR 19.1.1.

¹³⁷ Exhibit B-1, p. 53.

¹³⁸ Exhibit B-1, p. 53.

¹³⁹ Exhibit B-1, p. 53.

¹⁴⁰ Exhibit B-1, p. 53.

¹⁴¹ Exhibit B-4, BCUC IR 14.6, 19.1.1.