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Corix Multi-Utility Services Inc.

Burnaby Mountain District Energy Utility 2020-2023 Revenue Requirements and Rates Application

Decision and Order G-279-21

September 24, 2021

Before:

K. A. Keilty, Panel Chair

C. M. Brewer, Commissioner

B. A. Magnan, Commissioner

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APPENDICES

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Executive Summary

On July 30, 2020, Corix Multi-Utility Services Inc. (Corix) filed its Burnaby Mountain District Energy Utility (BMDEU) 2020 to 2023 Revenue Requirement and Rates Application pursuant to sections 59 to 61 of the *Utilities Commission Act* (Application). Corix provides thermal energy utility services to Simon Fraser University (SFU) and UniverCity customers. UniverCity is a residential and commercial development located on Burnaby Mountain adjacent to the SFU campus.

In 2017, the BCUC approved Corix's Certificate of Public Convenience and Necessity (CPCN) application for construction of the BMDEU including:

- approval for the construction and operation of a biomass central energy plant (CEP) and associated facilities including a natural gas peak and backup plant; and
- approval of the Amended and Restated Thermal Energy Services Agreement dated January 27, 2017 (TESA), between Corix and SFU, including the cost of service, cost allocation and rate design principles.

In the Application, Corix submits that the rate proposals reflect the costs associated with the central energy plant (CEP) which commenced service on October 23, 2020, the ongoing UniverCity build-out, and the need to establish new rates for the new service to UniverCity. As part of the proceeding, interim and refundable rates were established as requested by Corix for its SFU and UniverCity customer groups.

As for the revenue requirements component of the Application, the Panel's findings include the following:

- The Test Period is an acceptable period for setting the initial rates for BMDEU.
- The forecast operations and maintenance (O&M) expenses provide a reasonable basis for determining the Revenue Requirement for the Test Period.
- The O&M cost allocations to SFU and UniverCity are a fair apportionment of costs amongst ratepayers.
- The proposed capital additions provide a reasonable basis for determining the Test Period Revenue Requirements, including the impact on financing costs and depreciation.

Based on the findings and determinations on the components of the forecast Revenue Requirement, the Panel finds the forecast Revenue Requirements reasonable for setting rates for the Test Period.

Regarding rate design, final approved rates, and other matters, the Panel's findings and approvals include the following:

For the UniverCity customer group:

- The final and permanent approval of the Basic Charges for UniverCity effective January 1, 2021, January 1, 2022, and January 1, 2023 and the 4-month rate rider for the period of September 1, 2020 and December 31, 2020, as follows:

Effective Date	Sep 1, 2020	Jan 1, 2021	Jan 1, 2022	Jan 1, 2023
Basic Charge (\$/m² per Month)	No change	1.0482	1.1164	1.1889
2020 4-month Rate Rider (\$/m² per month)	0.2748	Not applicable (N/A)	N/A	N/A
Variable Energy Charge (\$/kWh)	N/A	\$0.0301	N/A	N/A

- The establishment of the Energy Cost Reconciliation Account on a permanent basis, to capture actual energy costs and revenues from the Variable Energy Charge and the annual Variable Energy Charge Rate Setting Mechanism for UniverCity's variable energy costs are also approved.
- The BCUC approved establishment of the Revenue Deficiency Deferral Account (RDDA) in the 2011 UniverCity CPCN. The RDDA is intended to capture the revenue requirement variances under a levelized rate approach. The Panel directs that, commencing in 2021 for the remainder of the Test Period, the function and operation of the existing RDDA be changed to exclude recognition of O&M forecast variances and to reflect the proposed treatment of energy costs and Variable Charge revenue.

For the SFU customer group:

- The following Capacity Charge, Consumption Charge, and Availability Charge are approved on a final and permanent basis, effective October 23, 2020, January 1, 2021, January 1, 2022, and January 1, 2023:

Effective Date	Oct 23, 2020	Jan 1, 2021	Jan 1, 2022	Jan 1, 2023
Capacity Charge (\$/MW of Nominated Capacity/Month)	10,647	16,807	16,748	16,656
Consumption Charge (\$/kWh)	0.0226	0.0234	0.0238	0.0242
Availability Charge (\$/Month)	33,000	33,000	33,000	33,000

- The proposed rates are consistent with the rate design principles outlined in the approved TESA. The calculated revenue based on the forecast load and proposed rates is sufficient to recover the Revenue Requirements allocated to SFU plus the incentive payment set out in the TESA that is collected from the Availability Charge.
- For 2022 and 2023, the Panel approves Corix's proposed rate structure for the SFU Fuel Cost Deferral Account and Property Tax Variance Account Rate Riders and Corix must use a 12 month amortization period for any balances in the deferral accounts.

1.0 Introduction

Corix Multi-Utility Services Inc. (Corix) seeks British Columbia Utilities Commission (BCUC) approval of its Burnaby Mountain District Energy Utility (BMDEU) 2020 to 2023 Revenue Requirement and Rates Application.

Among other things, Corix seeks approval of rates, rate riders and rate rider mechanisms for the Simon Fraser University (SFU) and UniverCity customer groups based on BMDEU's forecast cost of service or revenue requirement (Revenue Requirement) and load and energy forecasts for the test period September 1, 2020 through to December 31, 2023 (Test Period). Corix also proposes rate design changes to flow-through energy costs to the UniverCity customer group.

In this Decision, the Panel sets out the key issues to be decided, provides an overview of the relevant evidence, considers Corix's proposals, and outlines the reasons for the Panel's determinations. The Panel addresses the following key issues:

- The reasonableness of the BMDEU Test Period forecast Revenue Requirements for the SFU and UniverCity customer groups for the purpose of setting rates;
- The appropriateness of Corix's proposed rate design changes for UniverCity, including the flow-through of energy costs to UniverCity customers through the creation of a Variable Energy Charge and an Energy Cost Reconciliation Account;
- The appropriateness of establishing two SFU rate riders to facilitate the amortization of the balances in the previously approved Fuel Cost Deferral Account and Property Tax Deferral Account;
- The reasonableness of the load and energy forecasts for the SFU and UniverCity customer groups for the purpose of setting the rates; and
- The determination of just, reasonable and not unduly discriminatory rates.

1.1 Background

Corix is a subsidiary of Corix Utilities Inc. (CUI). CUI is a wholly owned subsidiary of Corix Infrastructure Inc. (CII), which is owned by the British Columbia Investment Management Corporation. CII is a provider of utility infrastructure solutions, including energy, water, and wastewater projects, and it operates approximately 1,370 utility systems across North America.¹

Corix owns and operates small standalone utilities in communities throughout British Columbia,² including BMDEU, a district energy utility that provides thermal energy utility services to SFU and UniverCity since the service commencement of operation of the central energy plant (CEP)³ on October 23, 2020.⁴ UniverCity is a residential and commercial development located on Burnaby Mountain adjacent to the SFU campus.⁵ Prior to

¹ Exhibit B-1, p. 10.

² Exhibit B-5, p. 4.

³ Exhibit B-1, p. 10.

⁴ Corix's Final Argument, p. 3.

⁵ Exhibit B-1, p. 1.

operation of the CEP, UniverCity was served by energy generated by another utility owned by Corix, the UniverCity Neighborhood Utility Service (UniverCity NUS).⁶

Since its inception in 2011, UniverCity NUS operated using temporary energy centres fired by natural gas boilers. The temporary energy centres were designed and developed to be replaced with a permanent low-carbon energy facility when build-out and energy demand became sufficient to make such a low-carbon facility economic. Corix subsequently selected biomass technology to be the most suitable solution for such facility and it reached two agreements with SFU to develop a biomass central energy plant which would provide thermal energy service to UniverCity and the SFU campus.⁷

In 2017, the BCUC approved Corix's Certificate of Public Convenience and Necessity (CPCN) application for construction of the BMDEU (2017 BMDEU CPCN Decision) including:

- approval for the construction and operation of a biomass CEP and associated facilities including a natural gas peak and backup plant, collectively referred to as the BMDEU; and
- approval of the Amended and Restated Thermal Energy Services Agreement dated January 27, 2017 (TESA), between Corix and SFU, including the cost of service, cost allocation and rate design principles.⁸

The BMDEU has two customer groups: UniverCity and SFU. The BMDEU is designed to provide low-carbon thermal energy service to existing and future UniverCity customers and baseload low-carbon service to SFU through an interconnection to the existing SFU district energy system. The natural gas module is designed to provide peaking and backup energy service to UniverCity customers only.

The UniverCity and SFU rate designs previously approved by the BCUC are discussed in additional detail below.

UniverCity Approved Rate Design

UniverCity customers have been receiving energy service from the temporary energy centres using a BCUC approved rate design.⁹ The BCUC approved Corix to recover UniverCity's costs of service through a two-part rate structure including a Basic Charge per square metre per month (fixed charge) and a Variable Rate per kilowatt-hour (variable charge).¹⁰ Corix was initially approved to levelize rates for UniverCity customers over 20 years using a revenue deficiency deferral account (RDDA). The RDDA records annual deficiencies or surplus resulting from the difference between the forecast annual earnings before tax at the approved rates and the approved annual revenue requirement (cost of service) including energy costs. The RDDA also captures differences between forecast and actual revenues and revenue requirement components. The rate structure reduces the cost to customers in the early stages of build-out of the development and fairly distributes costs to all customers.¹¹

⁶ Exhibit B-1, p. 11.

⁷ Exhibit B-1, p. 11.

⁸ Order C-5-17.

⁹ Corix CPCN to Construct and Operate a District Energy System for the UniverCity Neighbourhood Utility Service Project in Burnaby, BC Decision (2011 UniverCity CPCN Decision), BCUC Order C-7-11.

¹⁰ 2011 UniverCity CPCN Decision, Section 4.6, pp. 25-26; Section 6.2.1, p. 45.

¹¹ Application for a Certificate of Public Convenience and Necessity for the Burnaby Mountain District Energy Utility, Exhibit B-2-1,

In 2015, Corix updated its development assumptions and the BCUC approved recovery of the RDDA by the end of year 15 instead of year 20 resulting in full recovery of the RDDA by 2026.¹²

SFU Approved Rate Design

The TESA set out the terms and conditions under which Corix will provide BMDEU thermal energy service to SFU.¹³ In the 2017 BMDEU CPCN Decision, the BCUC approved a three-part rate design for SFU consisting of (i) a Capacity Charge; (ii) Consumption Charge; and (iii) Availability Charge.¹⁴ The components of the rate design are discussed further in Section 4.2.1 of this decision.

The 2017 BMDEU CPCN Decision also approved forecast variance treatment, as follows:¹⁵

- Property tax deferral account – to recover/refund any difference between the forecast and actual property taxes incurred between the service commencement date and receipt of the first property tax assessment for the infrastructure (if any such taxes are payable); and
- Fuel cost deferral account – to capture the difference between the forecast and actual costs incurred by Corix for Biomass and electricity to provide service to SFU under the TESA and to recover or refund any such differences in future periods through adjustments to the Consumption Charge.

1.2 Overview of the Application

On July 30, 2020, Corix filed its BMDEU 2020 to 2023 Revenue Requirement and Rates Application pursuant to sections 59 to 61 of the *Utilities Commission Act* (UCA) and subsequently supplemented the application with additional information and evidence set out in an Evidentiary Update filed on March 19, 2021, an Amended Evidentiary Update on May 20, 2021, and in responses to information requests (IRs) (Application).¹⁶

Corix states the Application addresses:

- Capital costs associated with the construction of a new CEP previously approved by the BCUC¹⁷ which commenced service on October 23, 2020;¹⁸
- Capital costs associated with the build-out of UniverCity forecasted to occur during the Test Period; and
- Operating and energy costs related to the operation of the new CEP during the Test Period.

Residential Tab, line 94; 2011 UniverCity CPCN Decision, Section 4.8, p. 27 and Section 6.2.5, p. 49; Order G-215-15 and accompanying reasons for decision, Section 4.2, p. 10; 2011 UniverCity CPCN, Exhibit B-4, Corix response to BCUC IR 21.1.

¹² Order G-215-15 and accompanying reasons for decision, Section 4.2, pp. 9-10.

¹³ Exhibit B-1, p. 12.

¹⁴ 2017 BMDEU CPCN Decision, Section 4.1.5, p. 35, 37.

¹⁵ 2017 BM BMDEU CPCN Decision, Section 4.1.5, p. 36, 37.

¹⁶ For the purpose of this decision, unless otherwise stated, the figures and cost estimates presented are based on Corix's evidentiary updates (Exhibits B-15-2 filed on May 20, 2021 and B-22 filed on May 30, 2021). The Panel has also cross referenced the financial model that was filed confidentially via Exhibit B-15-4 where appropriate.

¹⁷ 2017 Corix BMDEU CPCN Decision.

¹⁸ Exhibit B-15, p. 30.

Corix explains that the CEP contains a biomass module that provides thermal energy services to both SFU and UniverCity and a natural gas module that provides peaking and backup thermal energy services to UniverCity only.¹⁹

The rate proposals reflect the costs associated with the CEP, the ongoing UniverCity build-out,²⁰ and the need to establish new rates for the new service to UniverCity. The Application also proposes the initial rates for SFU, utilizing the approved rate design principles, cost of service parameters and the two deferral accounts as outlined above.²¹

Corix requests approval of the following:

- The Forecast Test Period Revenue Requirements for SFU and UniverCity for 2020 through 2023;
- The SFU rate riders and related mechanisms including:
 - Rider 1 in 2022 to amortize the balance in the SFU fuel cost deferral account;
 - Rider 2 to be used to amortize the balance in the SFU Property tax deferral account, when required; and
 - The proposed regulatory process to adjust SFU Rider 1 and SFU Rider 2 on an ongoing basis;
- Final proposed rates and rate riders for SFU effective October 23, 2020, January 1, 2021, January 1, 2022, and January 1, 2023;
- Permanent approval of the interim 2020 4-month rate rider for UniverCity commencing September 1, 2020;
- The proposed rate design changes to flow-through energy costs for the UniverCity customer group, effective January 1, 2021, by:
 - Establishing an Energy Cost Reconciliation Account (ECRA);
 - Replacing the existing Variable Rate with a Variable Energy Charge, which recovers only energy costs, beginning January 1, 2021;
 - Establishing a Variable Energy Charge rate setting mechanism; and
 - Setting the proposed regulatory process to adjust the Variable Energy Charge;
- Final proposed rates and rate riders for UniverCity effective October 23, 2020, January 1, 2021, January 1, 2022, and January 1, 2023; and
- The amended tariff document for UniverCity and the tariff supplement for SFU.

Corix's specific proposals related to the treatment of differences between the approved interim rates and permanent rates are reviewed in Subsection 4.3. Corix's request that all confidential information submitted during the regulatory review of the Application remain confidential is reviewed in Subsection 5.4.

¹⁹ Exhibit B-1, p. 1.

²⁰ Exhibit B-5, p. 8.

²¹ Exhibit B-1, Section 3.1.3, p. 17.

1.3 Legislative and Regulatory Framework

The BCUC's Thermal Energy System Framework Guidelines (TES Guidelines)²² provide a scaled approach to the regulation of thermal energy services, where the regulatory oversight increases with the size and scope of the TES. Corix is classified as a Stream B Thermal Energy System public utility²³ in which the approval of rates is guided by the TES Guidelines and governed by sections 59 to 61 of the UCA.

The TES Guidelines state that Stream B TES utilities are required to consider the following rate-setting principles:²⁴

1. Provide an equitable balance of risk and cost (such as forecast load and cost risk) between the utility and the ratepayer or generation of ratepayers;
2. Use the least deferral mechanisms possible;
3. Restrict the ability of the utility to pass controllable costs onto ratepayers;
4. Use the least amount of regulatory oversight to protect the ratepayer (minimize the regulatory burden and costs on the utility, ratepayers and the BCUC); and
5. Avoid rate shock (>10 percent change in rates per annum is generally considered "Rate Shock").

Sections 58 to 61 of UCA set out the framework for approval of rates including the following:

- Section 59(5) defines what an "unjust" or "unreasonable" rate is, while section 59(4) states the determination of what is "unjust" or "unreasonable" is a question of fact of which the BCUC is the sole judge;
- Sections 58 and 60 authorize the BCUC to establish rates and includes mandatory considerations, including the requirement that rates not be "unjust, unreasonable, unduly discriminatory or unduly preferential"; and
- Section 60(1)(b.1) provides that in setting a rate, the BCUC may use "any mechanism, formula or other method of setting the rate that it considers advisable, and may order that the rate derived from such a mechanism, formula or other method is to remain in effect for a specified period."

In addition, section 56 of the UCA the BCUC the jurisdiction to set depreciation rates.

The Panel conducts its review of this Application pursuant to the legislative authority of the UCA, using a traditional Cost of Service (COS) approach. To apply this COS approach, the Panel must first determine Corix's total revenue requirement or its "cost of service." A utility's revenue requirement reflects the total amount of revenue that must be collected in rates to recover its costs and provide the utility with an opportunity to earn a reasonable return on its invested capital or its return on equity (ROE). This COS approach links rates to recovery of the operating and capital costs based on forecast revenues and costs. The COS elements of a forecast revenue requirement include the following basic components:

- Reasonable and necessary costs;

²² Appendix A to Order G-27-15, BCUC Thermal Energy Systems Regulatory Framework Guidelines (TES Guidelines), p. 17.

²³ BMDEU is categorized and regulated as a Stream B thermal energy system, pursuant to BCUC's Thermal Energy Systems Regulatory Framework Guidelines.

²⁴ TES Guidelines.

- Return of investment through recovery of depreciation expense; and
- Return on investment through an allowed rate of return on invested capital.

Under a COS approach, revenue and cost components that are outside a utility's control may be handled through regulatory accounts and deferral mechanisms designed to capture and flow through forecast variances to future rates.

To determine the appropriate allocation of the Revenue Requirement between UniverCity and SFU and the appropriateness of requested rate design changes, the Panel is also guided by accepted Bonbright rate design principles,²⁵ including the fair apportionment of costs amongst customers, rate stability and price signals that encourage efficient energy use.

1.4 Regulatory Process

On August 19, 2020, the BCUC approved the following rates on an interim and refundable basis, effective September 1, 2020:

- For SFU:
 - Capacity Charge of \$16,367 per megawatt of nominated capacity per month;
 - Consumption charge of \$0.0226 per kilowatt-hour; and
 - Availability Charge of \$33,000 per month.
- For UniverCity:
 - 2020 4-month Rate Rider of \$0.2748 per square metre (m²) per month.²⁶

The BCUC also established a regulatory timetable for the review of the Application, which initially comprised intervener registration, Corix's virtual workshop, one round of BCUC and intervener information requests (IRs), Corix submission of evidentiary update and further process to be determined.

Four interveners registered in the proceeding: SFU, Strata Plan EPS-3822 Centre Block Building (Strata-EPS-3822), Strata Plan EPS-5447 The Peak (Strata-EPS-5447) and British Columbia Old Age Pensioners' Organization et al. (BCOAPO). The BCUC did not receive any letters of comment in this proceeding.

On October 13, 2020, Corix held a virtual workshop to provide the attendees with an overview of the Application and to address certain topics responding to the BCUC's written request preceding workshop. During the workshop, participants had the opportunity to ask questions relating to the presented material. The participants included the BCUC Panel and Staff, representatives of Corix and representatives of three out of four registered interveners (BCOAPO, Strata-EPS-5447 and SFU).

On December 7, 2020, the BCUC approved the following rates on an interim and refundable basis, effective January 1, 2021:

- For SFU:

²⁵ Bonbright, Principles of Public Utility Rates (2nd), 1988.

²⁶ BCUC Order G-220-20.

- Capacity Charge of \$16,506 per megawatt of nominated capacity per month;
- Consumption charge of \$0.0235 per kilowatt-hour; and
- Availability Charge of \$33,000 per month.
- For UniverCity:
 - Basic Charge of \$1.0482 per square meter per month;
 - Variable energy charge of \$0.0293 per kilowatt-hour; and
 - Approval to flow-through energy costs for the UniverCity customer group by establishing an Energy Cost Reconciliation Account.²⁷

On March 19, 2021, Corix filed an Evidentiary Update. BCUC then established a further regulatory timetable to include the second round of BCUC and intervener IRs and written final arguments.²⁸ Subsequently, Corix filed an Amended Evidentiary Update on May 20, 2021. Corix and intervener written final arguments were filed by June 30, 2021, in compliance with the regulatory timetable.

2.0 BMDEU Revenue Requirements

In this Section, the Panel reviews Corix's forecast BMDEU Revenue Requirement cost components. A summary of the forecast BMDEU Revenue Requirements for SFU and UniverCity for 2020 and 2021 and the total combined Revenue Requirement for 2022 and 2023 is presented below:

Table 1: Summary of BMDEU Revenue Requirements (\$) ²⁹

BMDEU Revenue Requirements	Test Period							
	2020 ^A			2021			2022	2023
	SFU	UniverCity	Total	SFU	UniverCity	Total	Total	Total
Operating and Maintenance Costs	81,022	307,765	388,787	673,811	698,815	1,372,625	1,435,672	1,497,191
Biomass Fuel	204,333	32,994	237,327	790,569	214,042	1,004,611	1,057,432	1,116,976
Natural Gas	--	359,068	359,068	--	165,778	165,778	171,010	195,519
Electricity	52,091	34,269	86,360	232,941	81,384	314,325	329,052	345,591
Subtotal Energy Costs	256,424	426,332	682,756	1,023,509	461,204	1,484,713	1,557,494	1,658,086
Property Taxes	--	--	--	--	100,805	100,805	105,132	111,998
Depreciation & Amortization	64,269	387,683	451,952	416,156	582,189	998,345	1,003,342	1,012,137
Income Tax	--	--	--	--	--	--	--	--
Deemed Interest	44,130	139,621	183,751	364,074	421,361	785,435	781,440	780,289
Return on Equity	92,223	291,780	384,003	760,843	880,561	1,641,404	1,633,055	1,630,651
Subtotal Financing Costs	136,354	431,400	567,754	1,124,917	1,301,921	2,426,839	2,414,495	2,410,940
Total Revenue Requirements	538,069	1,553,180	2,091,249	3,238,394	3,144,934	6,383,328	6,516,136	6,690,351
Total Revenue Requirements, excluding Energy Costs	281,645	1,126,848	1,408,493	2,214,884	2,683,730	4,898,614	4,958,642	5,032,266

A: All 2020 costs presented in the table shown above are actual figures provided in Corix's confidential financial model updated as of May 28, 2021 (Exhibit B-15-4). The 2020 costs for UniverCity reflect the period from January 1 to December 31, 2020, and for SFU reflect the period from the CEP service commencement (October 23, 2020) to December 31, 2020.

²⁷ BCUC Order G-318-20.

²⁸ Order G-103-21. dated April 6, 2021.

²⁹ This table has been compiled by information found in Exhibit B-15-2, Section C, Table 25, p. 21; Table 28, p. 23; Table 30, p. 25

Corix updated the 2020 costs to reflect actual figures and include the October 23, 2020 service commencement date of the biomass CEP. Specifically, for UniverCity's and SFU's 2020 costs, Corix presents actual energy costs, and depreciation & amortization.³⁰ The 2020 operating and maintenance (O&M) costs for both customer groups were updated by factoring in 2020 actual O&M costs where applicable.³¹ Corix has updated the deemed interest rate from 3.60 percent in the Application to 3.36 percent in the Evidentiary Update to account for the CEP service commencement in October 2020. The deemed interest rate in the Application reflected the period from 2020 onwards as opposed to the Evidentiary Update which reflected the period from the CEP service commencement date onwards. This change to the deemed interest rate resulted in a decrease in the weighted average cost of capital from 5.55 percent to 5.45 percent. The updated financing assumptions are applied from the date of the CEP service commencement onwards.³² The 2021, 2022, and 2023 figures presented are Corix's forecast costs.

As part of Appendix A of the Application in Exhibit B-1, Corix included the BMDEU Financial Model in support of the tables and charts presented in the Application. The financial model contains forecast information such as Corix's load and energy demand, capital costs, operating and maintenance costs, energy costs, rate base, and overall Revenue Requirements to calculate the respective proposed rates for SFU and UniverCity.³³ The financial model provides information for the 2020 to 2023 forecast test period, as well as an additional period of 2024 to 2026 beyond the test years which includes UniverCity's anticipated full build-out in 2025. Corix requests that the model be kept confidential due to its commercially sensitive nature (further discussion in Section 5.4 below).

As noted above, the Panel must determine if the forecast Revenue Requirements appropriately reflect the total amount of revenue that must be collected in rates for Corix to recover its forecast costs of service and to provide it an opportunity to earn a reasonable return. Below, the Panel reviews issues related to:

- The length of the proposed test period;
- The reasonableness of forecast O&M and energy costs and the appropriate allocation of amounts between UniverCity and SFU;
- The reasonableness of Creative Energy's forecast capital additions, allocations to UniverCity and SFU, depreciation and amortization methods and forecasts, and the prudence of project execution related to the costs associated with the completion of the CEP; and
- The appropriateness of Corix's deemed interest and ROE calculations.

2.1 Proposed Test Period

Corix proposes a test period for the period from September 1, 2020 to December 31, 2023 (Test Period) and states it is not requesting approval beyond December 31, 2023.³⁴

³⁰ Exhibit B-15, Section 2.3, p. 18, Section 3, p. 19.

³¹ Exhibit B-15, Section 4.4, p. 33; Exhibit B-15-4 (Confidential), Tab "SFU Campus Monthly" and "UniverCity Forecast Monthly".

³² Exhibit B-1, Section 8.1.1, Table 24, p. 53; Exhibit B-15, Section 6.1.1, Table 24, p. 40.

³³ Exhibit B-1, Appendix A, and as updated via Exhibit B-15-1, B-15-3, and B-15-4.

³⁴ Exhibit B-1, Section 1.3, p. 7; Exhibit B-15, Section 1.3, p. 10; Corix's Final Argument, paragraph 1, p. 2

In Corix's view, the proposed Test Period increases efficiency and reduces regulatory and administrative costs. However, Corix notes that there is some uncertainty surrounding costs due to the greenfield nature of the BMDEU since Corix has no prior experience operating the CEP. Accordingly, should an unforeseen situation arise that necessitates a future submission of a revenue requirement, it would seek approval of rates before the end of the Test Period. If necessary, Corix would file an application reflecting the best available information at that time including potential increases or decreases in the forecast costs.³⁵

Corix notes that the proposed Test Period will provide Corix the opportunity to operate the new CEP and make any necessary adjustments to operating cost and revenue requirement forecasts beyond the current Test Period, and to commence work on the Renewal and Replacement capital plan based on actual operational data and field experience.³⁶

Panel Determination

The Panel finds the Test Period an acceptable period for setting the initial rates for BMDEU. The length of the Test Period minimizes the regulatory burden and costs for Corix and its ratepayers, allows Corix time to gain experience operating the CEP and will provide sufficient actual operating data to consider in determining forecasting future capital and operating costs in the next test period. Further, given the expected completion of the UniverCity development build-out in 2025, the Test Period will allow sufficient time for Corix to further update its estimates on the development and the RDDA.

2.2 Operating and Maintenance Costs

Forecast O&M Costs

Forecast BMDEU O&M costs are comprised of fixed costs required to operate and maintain the entire utility on an annual basis. Corix states forecast O&M costs are based on historical results, cost assumptions as presented in the 2017 BMDEU CPCN application and Technical Safety BC requirements.³⁷ Similar to the capital cost allocation, O&M costs are allocated between the UniverCity and SFU customer groups. The allocation methodology is further discussed below.³⁸ The O&M forecast costs account for the October 23, 2020 service commencement date of the CEP.³⁹ Total BMDEU costs are shown in the table below:

³⁵ Exhibit B-1, Section 10.1, p. 73.

³⁶ Corix Reply, p. 9.

³⁷ Exhibit B-1, Section 6, p. 35.

³⁸ Exhibit B-1, Section 6, p. 35.

³⁹ Exhibit B-15, Section 4, p. 30.

Table 2: Total BMDEU O&M Costs (Amended Evidentiary Update)⁴⁰

O&M COSTS	TEST PERIOD			
	2020 ^A	2021	2022	2023
Direct Operating Expenses - SFU				
ETS Maintenance - SFU	--	9,997	10,197	10,401
DPS Maintenance - SFU	--	1,405	1,433	1,462
Direct Operating Expenses - UniverCity				
Natural Gas Plant Operators	57,532	80,784	82,400	84,048
Natural Gas Boiler Maintenance	6,410	8,434	8,603	8,775
ETS Maintenance - UniverCity	--	6,242	6,367	6,495
DPS Maintenance - UniverCity	--	11,977	12,217	12,461
Land lease Costs	16,020	40,950	40,950	40,950
Franchise fees	47,126	63,830	76,417	92,553
Shared Operating Expenses				
Biomass Plant Operators	48,293	589,662	601,455	613,484
Biomass Boiler Maintenance	--	92,248	94,093	95,975
Building Maintenance	--	10,557	10,768	10,983
Utilities, Materials, Vehicles, Safety, Other	26,009	8,810	8,986	9,165
Licensing (Permits)	2,451	4,076	4,157	4,241
Chemical Treatment	1,777	13,770	14,045	14,326
Corporate Services	67,377	143,860	149,428	151,893
Regional Services	57,812	189,310	203,641	224,255
Liability Insurance	41,077	6,859	15,622	17,245
Property Insurance	16,904	89,855	94,892	98,479
Total Operating Costs – BMDEU (Amended Evidentiary Update)	388,787	1,372,625	1,435,672	1,497,191
Total Operating Costs Allocated to SFU	81,022	673,811	696,424	710,120
Total Operating Costs Allocated to UniverCity	307,765	698,815	739,249	787,071

A: All 2020 costs presented in the table shown above are actual figures as provided in Corix's Evidentiary Update as of May 20, 2021 (Exhibit B-15-2) and in Corix's confidential financial model updated as of May 28, 2021 (Exhibit B-15-4). The 2020 costs for UniverCity reflect the period from January 1 to December 31, 2020, and for SFU reflect the period from the CEP service commencement (October 23, 2020) to December 31, 2020.

A description of each O&M cost category and the relevant assumptions are described below. Each cost item is not necessarily described in the same order as provided in the above table.

Plant Operators

To meet legislative requirements and based on a review by Technical Safety BC, the BMDEU operation will require operator availability 24 hours per day, 7 days per week, 365 days per year. Corix states it is required to staff the BMDEU with 5 full time equivalents (FTE) operators and 1 FTE supervisor, with an additional 0.25 FTE of a senior plant manager. Corix escalates operator costs on an annual basis at the target inflation rate of 2 percent. Corix proposes to split the labour costs between the biomass and natural gas plants within the CEP.⁴¹

⁴⁰ Exhibit B-15-2, Section C, p. 16, Table 17.

⁴¹ Exhibit B-1, Section 6.1, p. 36.

Maintenance

In the 2017 BMDEU CPCN application, all maintenance costs were forecast based on a percentage of capital and were estimated at 1.5 percent of the total cost of the installed biomass equipment. Corix explains that the 2017 BMDEU CPCN cost estimates were inclusive of an average allowance of routine maintenance activities, normal course operational repairs, and a modest allowance for future Replacement and Renewal. It notes that while this approach may be appropriate for a CPCN application, continuing to use this approach would be inconsistent with the principles surrounding fairness in rate design and intergenerational equity. Corix explains it reviewed all maintenance cost estimates (including the biomass boiler, natural gas boiler, energy transfer station, distribution piping system and building maintenance costs) and where appropriate refined the maintenance estimates from those presented in the 2017 BMDEU CPCN application to be more reflective of the operational requirements.⁴²

With respect to energy transfer station Maintenance costs, distribution piping system Maintenance costs and Building Maintenance costs, Corix notes that as O&M and Replacement and Renewal plans are finalized and actual costs are tracked, Corix intends to produce future forecasts of these costs based on historical data and the original equipment manufacturer's equipment requirements.⁴³

Utilities, Materials, Vehicles, Safety, Other

This cost category captures all other costs associated with operating the BMDEU. Corix bases its estimates on historical data, escalated using the target inflation rate of 2 percent and then allocated to each utility based on the output capacity of the BMDEU.⁴⁴

Licensing (Permits)

This cost category captures all licensing and permitting costs associated with operating the BMDEU. Corix bases its estimates on historical data, escalated using the target inflation rate of 2 percent and then allocated to each utility based on the output capacity of the BMDEU.⁴⁵

Chemical Treatment

This cost category captures costs related to treatment of the water contained in the district energy system's distribution piping system. Corix estimates the annual cost for chemical treatment and then escalates it annually using the target inflation rate of 2 percent.⁴⁶

Liability and Property Insurance

Corix forecasts these costs based on actual 2020 rates (liability insurance: \$2.73 per \$1,000 of revenue; and property insurance: \$0.170 per \$100 of asset value), escalated annually by inflation from 2021 onwards.⁴⁷

Land Lease Costs

⁴² Exhibit B-1, Section 6.1, p. 36.

⁴³ Exhibit B-1, Section 6.1, p. 37.

⁴⁴ Exhibit B-1, Section 6.1, p. 38.

⁴⁵ Exhibit B-1, Section 6.1, p. 38.

⁴⁶ Exhibit B-1, Section 6.1, p. 38.

⁴⁷ Exhibit B-15, p. 33.

Corix notes it is required to pay an annual fee to SFU for the portion of the land on which the section of the CEP that will be used to provide service to UniverCity is located. This portion of the land contains the natural gas plant and a portion of the biomass plant. Corix forecasts that 39 percent of the land square footage will be used to provide service to UniverCity at a rate of \$3.00 for the first 10 years and then escalated annually by the property tax escalator. The exact area and allocation percentage will be calculated following a final survey after the infrastructure is built. The forecast annual fee was calculated using a methodology developed by SFU for the use of SFU land by third parties.⁴⁸

Franchise fees

The BCUC approved an annual franchise fee as part of the 2011 UniverCity CPCN revenue requirements when rates for UniverCity were first implemented. The fee represents 3 percent of utility revenue payable to SFU Trust for the use of the SFU rights of way within UniverCity. This fee does not apply to SFU and is directly assigned to and recovered from UniverCity.⁴⁹

Corporate Services

Corix explains that corporate services costs are shared costs incurred at the corporate level (CII) in order to provide a wide variety of necessary services to all of the CII affiliates. CII forecasts these costs and then allocates a portion of these costs to each of the utilities, including BMDEU. Corporate services provided to the affiliates include:⁵⁰

- corporate governance;
- strategic management;
- corporate finance and corporate accounting;
- tax, internal audit and treasury services;
- human resource management;
- information technology systems and governance;
- legal services;
- health, safety and environment services;
- communications and public relations; and
- oversight of administrative and support services to CII's subsidiaries and their business units.

For 2021 onwards, UniverCity's corporate services cost allocation is based on the methodology discussed below, with an annual escalation based on the target inflation rate from 2023 onwards. As discussed in Section 2.4.3, a portion of UniverCity's 2020 corporate services cost allocation is proposed to be capitalized, with the remainder expensed as an O&M cost. SFU's share of the corporate services cost has been reduced to a level equal to that presented to SFU at the time the TESA was executed (\$42,087 for 2019). This annual figure has been prorated to reflect operations commencing October 23, 2020 and escalated annually based on the target inflation rate. In 2020, corporate services cost allocations to SFU were lower than originally forecast at the time the TESA was executed due to the CEP service commencement date being later than originally anticipated. Corix notes that corporate services costs allocated to SFU that exceed the annual figures presented to SFU at the time the TESA

⁴⁸ Exhibit B-1, Section 6.1, p. 38.

⁴⁹ Exhibit B-1, Section 6.1, p. 38; Application for a CPCN for the Neighborhood Utility Service at UniverCity, Burnaby (2011 UniverCity CPCN), Exhibit B-1, Section 3.7, p. 27.

⁵⁰ Exhibit B-1, Section 6.1.1, p. 20

was executed are forecast to be borne by the shareholder and have not been reallocated to UniverCity customers or any customers of other Corix utilities.⁵¹

A breakdown of the corporate services costs allocated to UniverCity and SFU for the Test Period is provided in the table below.

Table 3: Corporate Services Costs Allocated to UniverCity and SFU⁵²

Corporate Services Costs	Test Period			
	2020	2021	2022	2023
UniverCity	60,222	100,073	104,765	106,337
SFU	7,155	43,787	44,663	45,556
Total	67,377	143,860	149,428	151,893

Regional Services

Regional services for BMDEU are provided by Corix's Energy Services Canada Division and are associated with the daily management of Corix's Canadian district energy utilities and include, but are not limited to salaries, office building rent, office building utilities expense, fleet vehicle expenses, travel and general office expenses. UniverCity's Regional Services Cost allocation is based on the methodology discussed below, with an annual escalation based on the target inflation rate from 2023 onwards.⁵³

The regional services costs allocated to SFU have been reduced to a level equal to that presented to SFU at the time the TESA was executed, which represented a figure of \$44,374 for 2019. This figure has been escalated annually based on the target inflation rate. Like corporate services, in 2020 regional services cost allocations to SFU were lower than originally forecast at the time the TESA was executed as the CEP service commencement was later than originally estimated. Corix explains that the regional costs allocated to SFU that exceed the annual figures presented to SFU at the time the TESA was executed are forecast to be borne by the shareholder and have not been reallocated to UniverCity customers or any customers of other Corix utilities.⁵⁴

A breakdown of the regional services costs allocated to UniverCity and SFU for the Test Period is provided in the table below.

Table 4: Regional Services Costs Allocated to UniverCity and SFU⁵⁵

Regional Services Costs	Test Period			
	2020	2021	2022	2023
UniverCity	50,268	143,143	156,551	176,224
SFU	7,544	46,167	47,090	48,032
Total	57,812	189,310	203,641	224,255

⁵¹ Exhibit B-1, Section 6.1.1, p. 40.

⁵² BCUC prepared table based on data from Exhibit B-15-2, Section C, Table 18 and 19, pp. 17–18.

⁵³ Exhibit B-1, Section 6.1.2, p. 41; Exhibit B-15, Section 4.4 p. 34.

⁵⁴ Exhibit B-1, Section 6.1.2, p. 41; Exhibit B-15, Section 4.4 p. 34.

⁵⁵ BCUC prepared table based on data from Exhibit B-15-2, Section C, Table 18 and 19, pp. 17–18.

Allocation of O&M Costs

O&M costs are allocated to SFU and UniverCity using allocation principles that were included in the 2017 BMDEU CPCN application and approved by the BCUC.⁵⁶ Corix continues to use this methodology except for distribution piping system Maintenance, Corporate Service costs and Regional Service costs. The allocation factors for each of the O&M costs are as follows:

Table 5: O&M Cost Allocation⁵⁷

O&M COSTS	ALLOCATION TYPE	ALLOCATION PERCENTAGE		ALLOCATOR
		SFU	UNIVERCITY	
Biomass Plant Operators	Shared	74.1 %	25.9%	Share of Biomass Capacity
Natural Gas Plant Operators	Direct	--	100%	--
Biomass Boiler Maintenance	Shared	74.1 %	25.9%	Share of Biomass Capacity
Natural Gas Boiler Maintenance	Direct	--	100%	--
Energy transfer station Maintenance - UniverCity	Direct	--	100%	--
Energy transfer station Maintenance - SFU	Direct	100 %	--	--
Distribution piping system Maintenance	Shared	10.5 %	89.5%	Number of distribution piping system isolation valves <i>* Revised Allocation Methodology*</i>
Building Maintenance	Shared	64%	36%	CEP and Fuel Bin Building Floor Area
Utilities, Materials, Vehicles, Safety, Other	Shared	51.3 %	48.7%	CEP Output Capacity
Licensing (Permits)	Shared	51.3 %	48.7%	CEP Output Capacity
Chemical Treatment	Shared	51.3 %	48.7%	CEP Output Capacity
Corporate Services	Direct	N/A	N/A	CAM Model <i>* Revised Allocation Methodology*</i>
Regional Services	Direct	N/A	N/A	Composite Allocator <i>* Revised Allocation Methodology*</i>
Liability Insurance	Shared	Changes Annually		Annual Revenue
Property Insurance	Shared	46.7 %	53.3%	Forecast Asset Value at full build-out
Land Lease Costs	Direct	--	100%	--
Franchise Fees	Direct	--	100%	--

The allocations methodologies for shared O&M costs are described below.

⁵⁶ Exhibit B-1, Section 6, p. 35.

⁵⁷ Exhibit B-15, Section 4.3, Table 18, p. 32.

Biomass Plant Operators and Boiler Maintenance

Corix allocates the Biomass Plant Operators and Boiler Maintenance costs based on the customers' share of biomass capacity. As per the design specifications, the BMDEU biomass plant would provide 10 megawatt (MW) out of the total 13.5 MW of biomass capacity to SFU.⁵⁸ There is no change in the allocation methodology from the 2017 BMDEU CPCN.

Distribution piping system Maintenance Costs

Corix proposes that shares distribution piping system maintenance costs be allocated using a new allocator. Based on the 2017 BMDEU CPCN, distribution piping system maintenance costs for the natural gas portion of the CEP are to be allocated 100 percent to UniverCity as these costs related to the operation of the infrastructure that service UniverCity only. Similarly, SFU is allocated 100 percent of the operating costs related to the campus connection which is for its sole benefit.⁵⁹

Under the proposed methodology, distribution piping system maintenance costs are allocated to each customer group based on the number of distribution piping system isolation valves for each customer group. Corix explains that there are 17 isolation valves for UniverCity and 2 isolation valves for SFU. Therefore, Corix has allocated 89.5 percent and 10.5 percent of the distribution piping system Maintenance costs to UniverCity and SFU, respectively. Corix submits this approach has been reviewed by SFU and no opposition has been received.⁶⁰

Building Maintenance

Consistent with the 2017 BMDEU CPCN, Building Maintenance is allocated based on the same allocation factor used for Architectural Enhancements capital costs. However, the allocation percentages for building maintenance have been revised. Corix proposes that the allocation factor be based on the CEP and Fuel Bin building floor area use based on the revised building permit drawing package which included changes to the floor area used to provide service to the two customer groups. Corix submits the allocation percentages for Building Maintenance, are subject to a final review of the surveys by SFU and Corix and may be updated prior to finalization and acceptance by SFU and Corix.⁶¹

Utilities, Licensing and Chemical Treatment

These shared costs are allocated based BMDEU's output capacity designated for each customer group and calculated by dividing SFU's nominated capacity by the total output capacity of the CEP with the remainder charged to UniverCity. Corix explains these costs change with the size of the facility or its installed capacity.⁶²

The allocation methodology has remained the same as in the 2017 BMDEU CPCN. However, the allocation percentages were updated for SFU and UniverCity from 45.9 percent to 51.3 percent and 54 percent to 48.7 percent respectively. Corix explains this update occurred as the CEP plant output capacity will be reduced from 21.9 MW to 19.5 MW, with the disposition of the temporary energy centre 1 boiler assets previously used to serve UniverCity.⁶³

⁵⁸ Exhibit B-1, Section 4.2, 24.

⁵⁹ 2017 BM BMDEU CPCN Decision , section 4.1.4, pp. 32–35.

⁶⁰ Exhibit B-15, Section 4.3, pp. 32–33.

⁶¹ Exhibit B-1, Section 6.2, p. 44; Exhibit B-15, Section 4.3 p. 33.

⁶² 2017 BMDEU CPCN Decision, section 4.1.4, pp. 34-35; Exhibit B-1, Section 6.1, p. 38.

⁶³ Exhibit B-1, Section 6.2, p. 45.

Corporate Services

On December 24, 2020, the BCUC approved an updated methodology used to calculate and allocate corporate services costs. Corporate services costs are now calculated in an external financial model for all CII utilities and allocated to each utility independently using the updated Cost Allocation Methodology (CAM).⁶⁴ The corporate cost allocations for SFU and UniverCity are forecast based on the approved CAM.⁶⁵ Since SFU and UniverCity have a separate rate base and Revenue Requirement, the CAM allocation for each customer group is calculated independently.⁶⁶ The CAM uses the following allocators:⁶⁷

- (i) Functional Allocators (Employee Headcount, Number of Customers, and Call volume by business unit) where indirect costs can be allocated using an identified cost causation driver; and a
- (ii) Composite Allocator for indirect costs that do not have a direct correlation with any one particular cost causation driver. This allocator comprises three equally weighted factors: Gross Revenue, Gross Property, Plant and Equipment (PPE), and Headcount. The Composite Allocator was chosen to generally reflect the size, scope, and complexity of each of the operating affiliates in the capital intensive and labour-intensive nature of utility operations.

Corix explains that this methodology is based on the infrastructure investment built to serve each party.⁶⁸

Regional Services

Consistent with cost causation principles, Corix directly assigns all regional services costs incurred for a specific utility. Corix explains the remaining regional services costs are incurred for the benefit of several utilities and since these shared costs are not directly assignable, Corix uses a regional cost allocation methodology that it submits inherently produces a reasonable estimate of the portion of these shared costs that it incurs for the provision of services to each utility receiving the benefits.⁶⁹

The methodology used to calculate and allocate Regional Services has changed since the 2017 BMDEU CPCN and uses the same composite allocator methodology (Gross Revenue, Gross PPE and Headcount) as the CAM.⁷⁰

Liability and Property Insurance

Consistent with the 2017 BMDEU CPCN, Corix allocates property insurance based on each customer's share of the original costs of all capital assets and other insurance coverages are based on each customer group's share of billed revenues.⁷¹

⁶⁴ Order G-349-20.

⁶⁵ Exhibit B-15, p. 33.

⁶⁶ Exhibit B-1, Section 6.2, p. 45.

⁶⁷ Exhibit B-1, Section 6.1.1, pp. 39–40.

⁶⁸ 2017 BMDEU CPCN Decision, section 4.1.4, Table 7, pp. 33–35.

⁶⁹ Exhibit B-1, p. 41.

⁷⁰ Exhibit B-1, Section 6.1.1, p. 40; Section 6.2, p. 45.

⁷¹ 2017 BMDEU CPCN Decision, section 4.1.4, pp. 33–35.

Positions of the Parties

SFU confirms that, based on its review of the Application, and the evidence filed during the proceeding, the final proposed rates have been determined in accordance with the cost-of-service parameters, the cost allocation and the rate design principles set out in the TESA.⁷²

BCOAPO expresses concern with Corix's proposal to incrementally increase the annual O&M costs by inflation⁷³ and recommends that the forecast increases be capped at one percent under the inflation rate for each test year.⁷⁴ BCOAPO did not comment on the cost allocations.

In reply, Corix submits BCOAPO has not referenced any evidence in this proceeding to support its suggestion of capping O&M. Corix submits that the impact of this proposed cap on the Revenue Requirements and rates was not considered in this proceeding. Since BCOAPO's position is not supported by the evidence and ignores the impact of inflation to BMDEU's operating costs, Corix notes BCOAPO's suggestion to cap O&M is without merit and must be dismissed as it would not lead to fair and reasonable rates.⁷⁵

Panel Determination

The Panel finds the forecast O&M expenses set out in Table 2 provide a reasonable basis for determining the Revenue Requirement for the Test Period. Given the lack of an operating history for the CEP, Corix's forecast O&M costs are appropriately based where possible on historical results, the cost assumptions that it presented in the 2017 BMDEU CPCN and on other relevant updated information. The Panel considers that Corix's explanations and the analysis supporting the 2021 cost estimates provide an appropriate base for the Revenue Requirements. Further, Corix's approach to the Test Period O&M forecast is consistent with the TES rate setting principles discussed above.

The Panel disagrees with BCOAPO's recommendation related to reducing the proposed inflationary increases for the 2022 and 2023 periods. The Panel instead agrees with Corix that there is no evidentiary basis to support BCOAPO's recommendation to cap forecast O&M costs at one percent. Further, given that Corix is accepting the forecast risk as discussed above, the Panel considers the request for an inflationary increase reflects an equitable balance of risk and cost between the utility and the ratepayer or generation of ratepayers. The Panel also notes that SFU has no objection related to Corix's O&M forecast.

The Panel also finds the O&M cost allocations to SFU and UniverCity are a fair apportionment of costs amongst ratepayers. Corix uses allocation principles that were approved in the 2017 BMDEU CPCN, the BCUC approved CAM and also updates the allocations based on more recent information when appropriate. The Panel also notes that SFU considers the cost allocations to be consistent with the TESA.

The Panel recognizes that the forecast estimate for land lease costs was completed based on a best estimate of the floor area and the exact area and allocation percentage will be calculated following a final survey. Further Corix proposes to allocate building maintenance costs based on the CEP and Fuel Bin building floor area, which like land lease costs, are forecast based on the current best estimate. **The Panel finds establishing rates using**

⁷² SFU Final Argument, paragraph 10, p. 4.

⁷³ BCOAPO Argument, p. 12.

⁷⁴ BCOAPO Argument, p. 1.3.

⁷⁵ Corix Reply Argument, paragraph 62, p. 13.

the proposed estimates and allocation methodologies in the Application appropriate. However, the Panel directs Corix to update the forecast costs to reflect the final floor areas and allocation percentages in the next revenue requirements application.

2.3 Energy Costs

Energy costs are variable costs that include the costs for biomass fuel, electricity and natural gas. These costs are driven by customer consumption and energy prices in the market and Corix submits that energy costs are outside of the utility's control.⁷⁶ The CEP uses biomass fired boilers to supply baseload thermal energy to both SFU and UniverCity and natural gas fired boilers to supply peaking and back-up thermal energy to UniverCity.⁷⁷ Thus, biomass and electricity energy costs are allocated between SFU and UniverCity customers, whereas natural gas energy costs are borne by UniverCity customers only.⁷⁸ The forecast energy costs for the Test Period are shown in the table below:

Table 6: Forecast Energy Costs⁷⁹

Forecast Energy Cost	2020 (Actual)	2021	2022	2023
SFU Biomass	204,333	790,569	806,463	822,471
SFU Electricity	52,091	232,941	234,765	236,374
SFU Subtotal	256,424	1,023,509	1,041,229	1,058,846
UniverCity - Biomass	32,994	214,042	250,969	294,505
UniverCity – Natural Gas	359,068	165,778	171,010	195,519
UniverCity - Electricity	34,269	81,384	94,286	109,216
UniverCity Subtotal	426,332	461,204	516,265	599,240
Total Energy Costs	682,756	1,484,713	1,557,494	1,658,086

Corix also proposes that the energy costs for both SFU and UniverCity have forecast variance treatment to eliminate forecast risk.⁸⁰ Corix proposes to flow through actual energy costs to its customers using variance mechanisms reviewed in Sections 3.1.3 and 3.2.1 below.

Since Corix is seeking BCUC approval of SFU's Consumption Charges for the entire Test Period until 2023, SFU's Revenue Requirements used to set rates for SFU include the forecast energy costs in Table 6 above. For SFU, Corix proposes that energy forecast variances will be handled through the process to set the SFU Rider 1 effective July 1, 2022 and July 1, 2023 as discussed further in Subsection 4.2.1. Thus, in this Section, the Panel will review the reasonableness of SFU's forecast energy costs for the Test Period.

For UniverCity, Corix is seeking BCUC approval of UniverCity's 2021 Variable Energy Charge effective January 1, 2021. Corix proposes that the BCUC determine UniverCity's Variable Energy Charge for 2022 and 2023 in separate regulatory process reviewed in Subsection 3.1.3. Thus, based on Corix's proposal, it is not necessary for the Panel to approve UniverCity's forecast energy costs for 2022 and 2023 in this Decision.

⁷⁶ Exhibit B-1, pp. 49, 73.

⁷⁷ Exhibit B-1, pp. 1-2 and Appendix D, Attachment I, TESA, p. 5.

⁷⁸ Exhibit B-12-1, response to BCUC IR 31.1 and IR 34.3.

⁷⁹ Exhibit B-15-2, p. 19, Table 21 (Data table extracted from Exhibit B-15-4).

⁸⁰ Exhibit B-12-1, Response to BCUC IR 30.2.

We review Corix's relevant forecast energy cost forecasts for the Test Period below.

2.3.1 Biomass Fuel Costs

As indicated in the section above, the CEP's biomass fired boilers supply baseload thermal energy to both SFU and UniverCity. The biomass module was designed to have a 13.5 MW total output, where 10 MW would be allocated to SFU and 3.5 MW allocated to UniverCity.⁸¹ Corix states that SFU's energy requirements were obtained from SFU district energy system's (DES)⁸² operational data. SFU's biomass baseload is 10 MW which is the nominated capacity as per the TESA. As the 10 MW is a contractual obligation under the TESA, SFU pays for 10 MW even if the biomass demand is below 10 MW and its demand cannot exceed that amount.⁸³ SFU's annual average energy demand is 43,787 MWh.⁸⁴

UniverCity's annual energy demand is met using both biomass and natural gas and is forecast by multiplying the gross floor area for each building by an Energy Use Intensity (EUI), which varies by building type. UniverCity's total energy demand that will be met by biomass is calculated on an annual basis by subtracting SFU's annual biomass demand from the total biomass demand. The remainder of UniverCity's total energy demand will be met by the natural gas module in the CEP.⁸⁵

After a competitive selection process, Corix selected Cloverdale Fuel Ltd. (Cloverdale Fuel) to be the biomass supplier for the BMDEU.⁸⁶ As part of the proceeding, Corix filed the Biomass Supply Contract on a confidential basis to provide justification for the volumes and cost of biomass used to determine the Revenue Requirements.⁸⁷ Corix submits that BCUC approval of the Biomass Supply Contract is not required under the UCA as section 71 of the UCA addresses the filing of energy supply contracts, with the term "energy" being defined as natural gas and electricity only in section 68 of the UCA. Corix states that, through the review of its revenue requirements, the BCUC will indirectly review aspects of the Biomass Supply Contract that informs the volumes and cost for biomass supply to the BMDEU. Corix submits that BCUC determinations on the Biomass Supply Contract itself are not warranted.⁸⁸

Cloverdale Fuel is a dedicated biomass supplier to the BMDEU. The Biomass Supply Contract has a 5-year term plus an option to renew for 5 years.⁸⁹ The Biomass Supply Contract sets out a minimum quantity of biomass in bone dry tonnes (BDT) to be delivered to the BMDEU over a 12-month period (take or pay)⁹⁰ beginning with the in-service date of the BMDEU. Corix explains the minimum quantity represents 73 percent of the total quantity

⁸¹ Exhibit B-1, p. 13.

⁸² In the design of the BMDEU, the SFU energy transfer station serves as an interconnection point between the SFU DES and the BMDEU, Exhibit B-1, p. 13.

⁸³ Exhibit B-12-1, response to BCUC IR 7.1.1 and 7.2.

⁸⁴ Exhibit B-1, p. 24; Exhibit B-12-1, response to BCUC IR 8.2.1.

⁸⁵ Exhibit B-12-1, response to BCUC IR 8.2.1.

⁸⁶ Exhibit B-1, p. 49.

⁸⁷ Exhibit B-1, Section 3.1.1, p. 15.

⁸⁸ Corix Final Argument, paras. 43, 45-46 and 51, pp. 10-11.

⁸⁹ Exhibit B-1, p. 49; Exhibit B-12-1, BCUC IR 23.1 and IR 23.2.

⁹⁰ Exhibit B-12-1, BCUC IR 23.8.

required in 2021 to meet the forecast biomass energy demand. Corix anticipates that its biomass fuel requirements will exceed the minimum quantity stated in the Biomass Supply Contract.⁹¹

Under the Biomass Supply Contract, the price of biomass for a portion of the SFU biomass fuel requirement is fixed at a specified rate (\$/BDT) that Corix requests to be kept confidential due to its commercially sensitive nature. The remaining volume needed to satisfy SFU's energy demand will be sourced as variable costs, in which case the Risk Sharing Agreement will apply. The Risk Sharing Agreement was negotiated between SFU and Corix in 2019 in lieu of the 10-year fixed contract originally anticipated for the BMDEU (see Section 5.1 for more information on the Risk Sharing Agreement).⁹²

Consistent with the TESA, biomass fuel costs are allocated to SFU and UniverCity based on their respective share of biomass energy produced by the biomass boiler. The table below shows the percentage of biomass demand between SFU and UniverCity:

Table 7: Percentage of Biomass Energy Demand (Amended Evidentiary Update) ⁹³

Customer	2020 (Actual)	2021	2022	2023
SFU	85%	79%	76%	74%
UniverCity	15%	21%	24%	26%
Total	100%	100%	100%	100%

Positions of the Parties

SFU agrees with Corix that BCUC approval of the Biomass Supply Contract is not required. SFU notes that Corix is seeking BCUC approval of the forecast revenue requirements and rates for SFU, including the biomass fuel costs allocated to SFU and recovered through the SFU Consumption Charge. SFU submits that the forecast biomass fuel costs are reasonable, and SFU confirms that these costs have been properly allocated to SFU in the confidential financial model filed by Corix, consistent with the Risk Sharing Agreement and the TESA.⁹⁴

BCOAP0 did not comment on the Biomass Supply Contract or the biomass cost allocation.

Panel Determination

The Panel finds the forecast SFU biomass fuel costs set out in Table 6 provide a reasonable basis for determining SFU's Revenue Requirement for the Test Period. The Panel also finds the forecast UniverCity biomass fuel costs reasonable for determining 2021 energy costs for the purpose setting the UniverCity Variable Energy Charge for 2021, as discussed in Subsection 3.1.3. Corix's forecast biomass costs are based on forecast consumption and the pricing in the confidential Biomass Supply Contract, which was the outcome of a competitive process. The Panel notes that Corix expects its forecast biomass requirement to exceed the stipulated minimum quantity stated in the Biomass Supply Contract. The biomass energy costs are allocated to SFU and UniverCity based on the terms in the approved TESA. The Panel's consideration of the appropriateness

⁹¹ Exhibit B-1, p. 49.

⁹² Exhibit B-1, p. 50

⁹³ Exhibit B-15-2, p. 18, Table 20.

⁹⁴ SFU Final Argument, p. 9.

of forecast variance treatment and the related recovery mechanisms for energy costs is in Sections 3.1.3 and 3.2.1.

The Panel agrees with Corix and SFU that BCUC approval of the Biomass Supply Contract is not required since section 71 of the UCA applies only to electricity or natural gas energy supply contracts as defined in section 68 of the UCA. However, the Panel consideration of the terms of the Biomass Supply Contract provide support for the reasonableness of Corix's forecast volumes and cost of biomass supply that form part of the Revenue Requirements for the Test Period.

Corix's request to hold the Biomass Supply Contract confidential is reviewed in Section 5.4.

2.3.2 Natural Gas Costs

Natural gas costs are based on forecast consumption, daily demand, and natural gas rates. The forecast of natural gas consumption was determined based on the natural gas plant efficiency and the balance of the energy demand that would not be supplied by the biomass plant within the CEP. Natural gas demand decreased in 2021 compared to 2020 due to the CEP becoming operational and also Corix's removal of three natural gas boilers from its Temporary Energy Centre No. 1 in 2021.⁹⁵ At full build-out, Corix forecasts that 77 percent of UniverCity's energy demand will be met by the biomass CEP, with the remaining 23 percent being met by the natural gas plant.⁹⁶ The natural gas boilers in the natural gas module were designed to provide peaking and backup energy service to UniverCity customers, and thus, natural gas costs are allocated to UniverCity customers only.⁹⁷ The natural gas module has an output capacity of 8.3 MW.⁹⁸ SFU manages and operates its own SFU DES and maintains its own natural gas boiler capacity, which serve as peaking and backup energy for the SFU Campus DES.⁹⁹

For natural gas energy costs, Corix is a customer of FortisBC Energy Inc. (FEI) and takes natural gas service under the applicable FEI rate schedule. The cost of natural gas for UniverCity depends on FEI's rates billed to Corix based on its annual natural gas consumption and daily demand.¹⁰⁰ To forecast the natural gas energy cost, Corix has used FEI's most recently approved natural gas rates in combination with the Sproule natural gas commodity price forecast. Corix escalates the commodity portion of its natural gas cost as per the Sproule forecast and other charges are escalated by 2 percent target inflation.¹⁰¹ Below is the detailed natural gas energy cost forecast for the Test Period:

⁹⁵ Exhibit B-12-1, BCUC IR 29.1; Order G-220-19.

⁹⁶ Exhibit B-1, p. 52

⁹⁷ Exhibit B-1, p. 51.

⁹⁸ Exhibit B-1, p. 13.

⁹⁹ Exhibit B-1, p. 13.

¹⁰⁰ Exhibit B-18, response to BCUC IR 49.1.

¹⁰¹ Exhibit B-1, p. 51.

Table 8: Updated Natural Gas Costs (Amended Evidentiary Update)¹⁰²

	Test Period			
	2020	2021	2022	2023
Annual Natural Gas Consumption (GJ)	43,676	15,692	18,038	20,752
Daily Demand (GJ)	300	270	105	121
FortisBC Energy Inc. Rate Schedule	5	3	5	5
Basic Charge, \$ / month (RS 5), \$ / day (RS 3)	469.00	4.7895	478.38	487.95
Rate Rider 2, \$ / month (RS 5), \$ / day (RS 3)	0.400	0.0131	-	-
Demand charge, \$ / GJ of daily demand / month	23.83	N/A	26.12	26.64
Delivery Charge, \$ / GJ	0.872	3.388	0.96	0.98
Commodity cost recovery charge, \$ / GJ	2.279	2.844	2.698	2.608
Storage & transport charge, \$ / GJ	0.671	1.188	0.88	0.89
Total variable charges per GJ	\$ 3.82	\$ 7.42	\$ 4.53	\$ 4.48
Carbon tax, \$/GJ	1.9864	2.3053	2.3053	2.3053
Total Cost of Natural Gas – UniverCity Only (\$)	\$ 350,210	\$ 165,778	\$ 171,010	\$ 195,519

For 2020, the Total Cost of Natural Gas – UniverCity only of \$350,210 as shown above is a forecast in reference to Corix's IR No. 2 responses dated May 20, 2021.¹⁰³ The summary table in Table 1 and Table 6 in this section for 2020 show the actual cost of \$359,068, which is consistent with Corix's financial model (Exhibit B-15-4) that was submitted on May 28, 2021 for rate setting purposes.

As noted previously, Corix seeks BCUC approval of UniverCity's 2021 Variable Energy Charge effective January 1, 2021 only. Therefore, based on Corix's proposal, it is not necessary for the Panel to approve UniverCity's forecast natural gas costs for 2022 and 2023 in this Decision.

Panel Determination

The Panel finds the forecast natural gas costs for 2021 of \$165,778 provide a reasonable basis for the purpose of setting the UniverCity Variable Energy Charge for 2021, as discussed in Subsection 3.1.3. Corix's forecast natural gas costs are based on forecast consumption and the pricing is based on FEI rates. The Panel's consideration of the appropriateness of forecast variance treatment and the related recovery mechanisms for energy costs is in Section 3.1.3.

2.3.3 Electricity Costs

Corix forecasts electricity costs using forecast consumption, peak load and electricity rates. Electricity is used to power the biomass and natural gas modules. An independent engineering firm, TEMEC Engineering Group Ltd., forecasts Corix's electricity consumption.¹⁰⁴ The British Columbia Hydro and Power Authority (BC Hydro) supplies electricity to Corix under the applicable rate schedule. Electricity rates were forecasted for 2020 through to 2023 based on the BC Hydro F2020 – F2021 Revenue Requirements Application.¹⁰⁵

Below is the detailed electricity energy cost forecast for the Test Period:

¹⁰² Exhibit B-18, response to BCUC IR 49.1; Updated Table 14; the \$350,210 figure in 2020 is the forecast Total Cost of Natural Gas – UniverCity. The actual Total Cost of Natural Gas – UniverCity is \$359,068.

¹⁰³ Exhibit B-18, BCUC IR 49.1.

¹⁰⁴ Exhibit B-1, p. 51.

¹⁰⁵ Exhibit B-1, p. 51.

Table 9: Updated Electricity Costs (Amended Evidentiary Update)¹⁰⁶

	Test Period			
	2020	2021	2022	2023
Electricity Demand (kW)	682	682	682	682
Electricity Consumption (MWh)	1,679	3,544	3,682	3,840
<u>BC Hydro Rates</u>				
Daily rate (Basic Charge), \$/day	0.2630	0.2661	0.2714	0.2769
Demand Charge, \$ per kW of Billing Demand	\$ 12.14	\$ 12.28	\$ 12.53	\$ 12.78
Energy Charge, \$/kWh	0.0596	0.0603	0.0615	0.0627
Rate Rider (%)	0%	0%	0%	0%
Total Cost of Electricity - BMDEU (\$)	\$ 146,458	\$ 314,325	\$ 329,052	\$ 345,591
<u>Allocation of Shared Electricity Costs</u>				
SFU	53%	74%	71%	68%
UniverCity	47%	26%	29%	32%
Total Cost of Electricity - SFU (\$)	\$ 71,116	\$ 232,941	\$ 234,765	\$ 236,374
Total Cost of Electricity - UniverCity (\$)	\$ 75,342	\$ 81,384	\$ 94,286	\$ 109,216

For 2020, the Total Cost of Electricity for SFU and UniverCity as shown in the table above of \$71,116 and \$75,342, respectively, are forecasts in reference to Corix's IR No. 2 responses dated May 20, 2021.¹⁰⁷ The summary table in Table 1 and Table 6 in this section for 2020 show the actual electricity costs for SFU and UniverCity of \$52,091 and \$34,269, respectively, which are consistent with Corix's financial model (Exhibit B-15-4) that was submitted on May 28, 2021 for rate setting purposes.

Positions of the Parties

SFU generally agreed with Corix's forecasted thermal energy demand and electricity costs along with the allocation.¹⁰⁸ BCOAPO did not comment on electricity costs.

Panel Determination

The Panel finds the forecast SFU electricity costs set out in Table 9 provide a reasonable basis for determining SFU's Revenue Requirement for the Test Period. The Panel also finds the forecast UniverCity electricity costs of \$81,384 reasonable for determining 2021 energy costs for the purpose of setting the UniverCity Variable Energy Charge for 2021, as discussed in Subsection 3.1.3. Corix's forecast electricity costs are based on forecast consumption developed by an independent engineering firm and the pricing is based on current and forecast BC Hydro rates.

2.4 Capital Additions, Depreciation and Amortization

In this Subsection, the Panel reviews:

- The capital costs associated with the construction of the CEP;
- The build-out of UniverCity forecasted to occur during the Test Period;

¹⁰⁶ Exhibit B-18, BCUC IR 49.1; Updated Table 13; the \$146,458 figure in 2020 is the forecast Total Cost of Electricity – BMDEU. The actual Total Cost of Electricity – BMDEU is \$86,360.

¹⁰⁷ Exhibit B-18, BCUC IR 49.1.

¹⁰⁸ SFU Final Argument, p. 10.

- Corix's proposals related to the Allowance for Funds Used During Construction (AFUDC) and the capitalization of corporate and regional services costs; and
- The recovery of capital costs through the forecast depreciation and amortization amounts included in the Revenue Requirements for the Test Period and Corix's proposed depreciation rates.

Corix outlines that most of the capital costs were incurred by the end of 2020 and are associated with the CEP project. The remaining capital costs are associated with the UniverCity build-out and include energy transfer stations and distribution piping to connect each parcel to the BMDEU system. Corix's forecast of total capital costs at the BMDEU including an AFUDC, Contributions in Aid of Construction (CIAC) and the capitalization of corporate and regional services costs are set out below.¹⁰⁹

Table 10: BMDEU Total Capital Costs¹¹⁰

BMDEU TOTAL CAPITAL COSTS	2016 – 2019 (ACTUAL)	2020 (ACTUAL)	2021 (PROJECTED)	2022 (FORECAST)	2023 (FORECAST)	2024 (FORECAST)	2025 (FORECAST)	TOTAL TO UNIVERCITY BUILD-OUT
Central Energy Plant								
<i>Building and Site Prep.</i>	345,122	12,364,004	--	--	--	--	--	12,709,126
<i>Biomass Plant</i>	--	15,073,276	--	--	--	--	--	15,073,276
<i>Natural Gas Plant</i>	1,300,254	3,635,979	--	--	--	--	--	4,936,233
Soft Costs	--	2,005,100	--	--	--	--	--	2,005,100
Campus Connection	--	2,681,514	--	--	--	--	--	2,681,514
Campus ETS & CEP Interface	--	1,960,149	--	--	--	--	--	1,960,149
UniverCity Connection	--	2,572,458	--	--	--	--	--	2,572,458
UniverCity DPS	283,033	699,258	350,000	800,000	--	--	--	2,132,291
UniverCity ETS	987,647	36,967	728,710	500,000	916,500	626,000	300,500	4,096,324
Total Capital Costs (a)	2,916,055	41,028,703	1,078,710	1,300,000	916,500	626,000	300,500	48,166,469
AFUDC	1,031,240	1,070,023	--	--	--	--	--	2,101,264
UniverCity Capitalized Overhead	--	36,830	15,905	17,395	19,580	19,972	20,371	130,053
Total Capital Costs (incl. AFUDC & Capitalized Overhead)	3,947,296	42,135,557	1,094,615	1,317,395	936,080	645,972	320,871	50,397,786
CIAC SFU	(1,900,000)	(2,850,000)	(183,172)					(4,933,172)
CIAC UniverCity: BC Hydro Grant	--	--	(297,138)	(297,138)	(297,138)	--	--	(891,415)
CIAC UniverCity: Developer Connection Fee	(511,992)	(343,215)	(346,118)	(346,118)	--	--	--	(1,547,442)
Total Capital Costs (incl. AFUDC, Capitalized OH & CIAC)	1,535,303	38,942,342	268,187	674,139	638,942	645,972	320,871	43,025,757

¹⁰⁹ Exhibit B-1, p. 2.

¹¹⁰ Exhibit B-15-2, p. 11, Table 9.

Corix states that CEP capital costs are allocated to SFU and UniverCity in a manner consistent with the methodology accepted by the BCUC in the 2017 BMDEU CPCN.¹¹¹

2.4.1 CEP Capital Costs

A comparison of the total BMDEU capital cost to the forecast cost in the CPCN is set out below.

Table 11: BMDEU Total Capital Cost Comparison¹¹²

BMDEU CAPITAL COSTS	2017 BMDEU CPCN (2016-2021)	FORECAST COSTS (2016-2025)	VARIANCE	
			(\$)	(%)
<u>Amended Evidentiary Update</u>				
Total Capital Costs	39,213,469	48,166,469	8,953,000	22.8%
AFUDC	1,233,153	2,101,264	868,111	70.4%
CIAC - SFU	(4,517,493)	(4,933,172)	(415,679)	9.2%
CIAC - UniverCity	(3,008,974)	(2,438,857)	570,117	-18.9%
Total Capital Costs incl. AFUDC and CIACs	32,920,155	42,895,703	9,975,548	30.3%

The above table shows the total BMDEU capital cost prior to adjustments for AFUDC and CIAC being \$8,953,000 or 22.8 percent greater than forecast in the CPCN.¹¹³ Corix states it used a Class C cost estimate in the CPCN, which has an accuracy range of +/- 15 to 25 percent.¹¹⁴

With respect to the 22.8 percent capital cost variance, Corix states that the primary reason for the cost overrun is a 70 percent increase in Building and Site Preparation costs due to unforeseen underground conditions in the CEP area.¹¹⁵ Corix explains that the unforeseen underground conditions were discovered primarily in a forested area, which is part of the project site, and was not accessible during the pre-design geotechnical assessment. Corix elaborates that these previously unidentified conditions were discovered during detailed geotechnical assessments following the site clearing and resulted in more excavation and subsequent fill import, as well as extra building wall reinforcement, increased foundation thickness and additional perimeter drainage.¹¹⁶

Corix states the CEP output capacity has been reduced from its initial forecast of 21.9 MW to 19.5 MW, with the disposition of the Temporary Energy Centre No. 1 boiler assets previously used to serve UniverCity. Of the 19.5 MW total CEP output capacity, 10 MW is applicable to SFU and the remaining 9.5MW to UniverCity.¹¹⁷

¹¹¹ Exhibit B-1, p. 2

¹¹² Exhibit B-15-2, p. 12, Table 10.

¹¹³ Exhibit 15-2, p.12.

¹¹⁴ 2017 BM BMDEU CPCN Decision, p. 42.

¹¹⁵ Exhibit B-1, pp. 29-30.

¹¹⁶ Exhibit B-12-1, BCUC IR 12.1.

¹¹⁷ Exhibit B-1, p. 45 and Attachment 1, TESA, Schedule 2, Page 3.

The CIACs relate to the CEP project and to the UniverCity build-out and are applicable to the UniverCity and SFU customer groups. The actual, projected and forecast CIACs as compared to those provided in the 2017 BMDEU CPCN are presented in the following table:¹¹⁸

Table 12: BMDEU Total CIAC¹¹⁹

CIAC	2017 BMDEU CPCN (2016-2021)	2016-19 (ACTUAL)	2020 (ACTUAL)	2021 (FORECAST)	2022 (FORECAST)	2023 (FORECAST)	TOTAL
<u>Amended Evidentiary Update</u>							
UniverCity	3,008,974 ⁵	511,992	343,215	643,256	643,256	297,138	2,438,857
SFU	4,517,493	1,900,000	2,850,000	183,172	--	--	4,933,172
Total	7,526,467	2,411,992	3,193,215	826,428	643,256	297,138	7,372,029

⁵ UniverCity CIACs prior to the amount presented in the 2017 BMDEU CPCN application totaled \$278,894.

UniverCity's CIACs include a grant from BC Hydro and developer contributions applied against the UniverCity distribution piping system.¹²⁰

Pursuant to the TESA, SFU provided \$4.75 million as a CIAC towards its share of the CEP. The application of SFU's CIAC reduces AFUDC on its portion of the CEP capital costs, as per the terms in the TESA.¹²¹ Corix incurred costs of approximately \$183,000 associated with the landscaping around the Biomass Plant which was reimbursed solely by SFU. Corix has treated this reimbursement as a CIAC from SFU.¹²²

Corix provides the final allocation percentages for the finalized CEP project costs based on the as-built building surveys, as stipulated in the TESA.

Table 13: Updated CEP Capital Cost Allocation Percentages¹²³

CEP Capital Cost Categories	Allocation Percentages			
	Evidentiary Update (2021-03-19)		Amended Evidentiary Update (2021-05-20)	
	SFU	UniverCity	SFU	UniverCity
Lower Site Area - CEP and surrounding area, excluding Upper Site Area	62%	38%	61.1%	38.9%
CEP Building, Foundations and Site Preparation	62%	38%	61.1%	38.9%

Positions of the Parties

BCOAPO considers that the evidence presented supports that the capital costs, including the cost overruns, were prudently incurred.¹²⁴

¹¹⁸ Exhibit B-1, Section 5.2, p. 26.

¹¹⁹ Exhibit B-15-2, Section C, Table 7, p. 10.

¹²⁰ Exhibit B-1, Section 5.2, p. 26.

¹²¹ Exhibit B-1, Section 5.2, p. 26.

¹²² Exhibit B-15-2, Section A-1, p. 3.

¹²³ Exhibit B-15-2, p. 5.

¹²⁴ BCOAPO Final Argument, p. 8.

While SFU did not provide any specific comments on the total CEP capital costs or capital additions, as noted previously, it confirms that the final proposed rates have been determined in accordance with the cost-of-service parameters, the cost allocation, and the rate design principles set out in the TESA.¹²⁵

Panel Determination

The Panel finds the proposed capital additions provide a reasonable basis for determining the Test Period Revenue Requirements, including the impact on financing costs and depreciation. Corix has provided sufficient evidence to support the forecast capital additions, and the allocation of capital costs to SFU and UniverCity is consistent with the methodology accepted by the BCUC in the 2017 BMDEU CPCN.

The Panel notes that the majority of capital additions for the Test Period relate to the construction of the CEP, and these costs, including the 22.8 percent cost overrun compared to the CPCN cost estimate, have a significant impact on the proposed rates. Although Corix received the BCUC's approval of its CPCN before the project was started, the BCUC must now ensure that Corix's rates do not include recovery for imprudent capital additions. In this proceeding, the Panel must evaluate the actual final CEP expenditures and consider if the costs were prudently incurred. The Panel bases this assessment on information available to the utility at the time of the CPCN decision without using the benefit of hindsight. Such capital costs would only be considered imprudently incurred if they result from management decisions that were unreasonable in light of what was known or should have been known at the time of the CPCN decision or if they were incurred due to imprudent project execution.

Consistent with the BCUC's CPCN Guidelines,¹²⁶ Corix provided a Class C cost estimate in the CPCN proceeding,¹²⁷ which has an accuracy range of +/- 15 to 25 percent. The amount of cost overrun falls within the accuracy range of the cost estimate provided in the CPCN. Further, the evidence indicates the cost overrun was primarily driven by costs to address then unforeseeable underground conditions in the CEP area and not because of ineffective project execution. Accordingly, consistent with BCOAPO's view, there are no reasonable grounds to displace the burden that the costs were incurred prudently and therefore the Panel considers that a further prudence review of the CEP costs is not warranted in the circumstances.

The Panel notes the variance in the actual, projected and forecast CIAC between that presented in the 2017 BMDEU CPCN and the Application for SFU and UniverCity. **To assist with tracking the CIACs, the Panel directs Corix to provide in the next RRA the actual, projected and forecast CIACs for UniverCity and SFU in a similar format to that provided in Table 12 above and to include an explanation of variances from the 2017 BMDEU CPCN and from the Application.**

2.4.2 Allowance of Funds Used During Construction

Consistent with the 2017 BMDEU CPCN, Corix includes AFUDC on the CEP project only and excludes AFUDC on capital associated with the UniverCity build-out. AFUDC is applied on a monthly basis to certain CEP infrastructure components and their associated capital costs. Corix allocates the AFUDC between UniverCity and

¹²⁵ SFU Final Argument, paras 10, p. 4.

¹²⁶ https://www.bcuc.com/Documents/Guidelines/2015/DOC_25326_G-20-15_BCUC-2015-CPCN-Guidelines.pdf

¹²⁷ Exhibit B-1, p. 29.

SFU based on the allocation factors for the capital costs for each component that attracts AFUDC. The AFUDC is calculated using Corix's weighted average cost of capital of 5.55 percent.¹²⁸

The forecast AFUDC totals \$2,101,264 compared to the 2017 BMDEU CPCN amount of \$1,233,153. The primary factors that led to the increase in the AFUDC were the delays caused by the required permitting processes, and increased capital costs.¹²⁹

Corix notes that the AFUDC calculation is prepared in alignment with TESA which includes the following requirements:

- (i) the AFUDC is to be tracked by line item and only line items where AFUDC was approved in TESA as well as the CPCN;
- (ii) subcomponents of the AFUDC group are then to be reduced by the SFU Campus CIAC when received; and
- (iii) there exists a confidential collar risk sharing mechanism applicable to the line items which attract AFUDC.¹³⁰

Corix submits that to calculate AFUDC in the manner required to comply with the TESA warrants a monthly calculation.¹³¹ It notes it is not aware of AFUDC calculations precedent set by the BCUC for other utilities operating a similar facility with similar contractual obligations.¹³²

Positions of the Parties

BCOAPO did not take a position on the methodology used to calculate AFUDC.

SFU disagrees that the TESA requires that AFUDC be compounded on a monthly basis. SFU notes the TESA simply provides that:¹³³

An allowance for funds used during construction (AFUDC), calculated based on Corix's allowed return on rate base and on the amount and timing of the capital costs incurred by Corix and included in rate base, will be capitalized and included in rate base. The AFUDC calculation will have regard for the amount and timing of the contributions in aid of construction made by SFU, net of any applicable taxes, as set out in Section 4.5 of the Thermal Energy Services Agreement.

In SFU's view, this provision and none of the "three key constraints" cited by Corix require that AFUDC be compounded monthly. SFU states it is also surprised that, according to Corix, there are no standard or generally applied BCUC guidelines, methodologies or precedents regarding how utilities in British Columbia calculate AFUDC.¹³⁴

¹²⁸ Exhibit B-1, Section 5.3, p. 24; Exhibit B-15, Section 6.1.1, p. 40.

¹²⁹ Exhibit B-1, Section 5.3, p. 24.

¹³⁰ Exhibit B-21, SFU IR 6(c).

¹³¹ Exhibit B-21, SFU IR 6(c).

¹³² Exhibit B-21, SFU IR 6(c).

¹³³ SFU Argument, paragraph 14, p. 5.

¹³⁴ SFU Argument, paragraph 15, p. 6.

SFU does not agree that monthly compounding of AFUDC is reasonable or necessary to compensate Corix for the capital deployed by it during construction. Nevertheless, SFU is content with monthly compounding if this is consistent with standard utility practice in British Columbia. If it is not, then SFU submits that Corix should be directed to calculate AFUDC in a manner consistent with standard practice. If there are no such standards, then SFU submits that it would be more reasonable to compound AFUDC on a semi-annual basis.¹³⁵

In reply, Corix notes that given the complexity of the TESA and the requirements surrounding AFUDC, it employed a tailored approach to calculating AFUDC.¹³⁶ In order to meet the requirements listed above and carry out the AFUDC calculations in accordance with the TESA, monthly calculations with monthly compounding were used for AFUDC.¹³⁷ Given that the TESA requires monthly AFUDC calculations and reductions to the cumulative AFUDC in any month that a CIAC is received by SFU, Corix submits it is reasonable to employ monthly compounding in this circumstance.¹³⁸

Panel Determination

The Panel approves the proposed AFUDC additions associated with the CEP capital project. The Panel is persuaded by Corix's evidence that its calculation of the AFUDC aligns with the requirements of the TESA. Given that the TESA states the calculation should be based on the amount and timing of the capital costs and reduced by the amount and timing of the CIAC received from SFU, the Panel considers that a monthly calculation is appropriate in these circumstances.

The Panel acknowledges SFU's recommendation to calculate in a manner consistent with standard practice. However, the BCUC does not have any published guidance on this issue. Therefore, the Panel's approach is to consider the specific circumstances of this case to determine the appropriate treatment.

2.4.3 Capitalization of Corporate and Regional Services Costs

Corix proposes to capitalize a portion of the corporate services costs and regional services costs allocated to UniverCity and submits capitalization of such costs is common practice in the utility industry. Corix notes that based on the terms and conditions of the TESA, it has not capitalized any portion of corporate services costs or regional services costs allocated to SFU.¹³⁹

In Corix's view, a portion of the costs included in corporate services and regional services meet the capitalization criteria. The criteria Corix used to determine whether overhead costs should be capitalized are summarized below:¹⁴⁰

- When capital expenditures are incurred to:
 - Construct and develop property, plant, and equipment;
 - Renew and replace existing assets or key components, resulting in an extension to the service life of these assets; or

¹³⁵ SFU Argument, paragraph 16, p. 6.

¹³⁶ Corix Reply, paragraph 7, p. 3.

¹³⁷ Corix Reply, paragraph 8, p. 3.

¹³⁸ Corix Reply, paragraph 9, p. 3.

¹³⁹ Exhibit B-1, Section 6.1.3, pp. 42–43.

¹⁴⁰ Exhibit B-1, Section 6.1.3, p. 42; Exhibit B-12-1, BCUC IR 21.1.

- Improve services by adopting new technology or betterment of existing assets.
- When it is not administratively feasible to directly charge every single cost of each corporate and regional activity required to execute the capital project undertaken for the reasons indicated in item 1 above. Examples of these corporate and regional activities include, but are not limited to legal, regulatory, finance, human resources, and procurement.

Based on these criteria, Corix proposes to capitalize 25 percent of corporate services costs and regional services costs in 2020 and 10 percent of regional services costs from 2021 onwards for any year in which capital projects occur.¹⁴¹ The proposed overhead capitalization rates and amounts are presented in the Corix prepared table below:

Table 14: Overhead Capitalization Rates and Amounts (UniverCity Only) (Evidentiary Update)¹⁴²

OVERHEAD CAPITALIZATION (UNIVERCITY ONLY)	TEST PERIOD			
	2020A	2021F	2022F	2023F
Corporate Services Capitalization Rate	25%	0%	0%	0%
Regional Services Capitalization Rate	25%	10%	10%	10%
Corporate Services Capitalization Amount (\$)	20,074	--	--	--
Regional Services Capitalization Amount (\$)	22,413	30,525	31,560	34,621
Total Overhead Capitalized (\$)	42,487	30,525	31,560	34,621
Overhead Capitalized as a % of Capital associated with UniverCity build-out (excludes AFUDC, CIAC and overhead capitalized)	0.26%	2.83%	2.43%	3.78%

According to Corix, this capitalization approach is appropriate because the CEP is at the beginning of its service life and future capital costs are anticipated for the continuing build-out of the UniverCity system.¹⁴³ Corix notes that the 25 percent in 2020 reflects the amount of time and effort expended for the successful completion and placement of service for the CEP. It submits that for the remaining years in the Test Period, there is no proposed allocation of corporate services costs as it has not forecasted any significant capital project that would require services from the corporate level. In 2021 through 2023, Corix proposes to apply a capitalization rate of 10 percent for Regional Services. It submits the 10 percent represents a reasonable portion of Regional Services costs incurred as expansion of utility infrastructure and services continues, with the build-out of the UniverCity development.¹⁴⁴

The appropriate capitalization rate is based on a combination of management estimates regarding time spent on capital projects and reliance on precedent set in past BCUC decisions as a check for reasonableness.¹⁴⁵ Corix explains it has not conducted a capitalization study because the cost of the study exceeds the amount Corix proposes to capitalize, and that it also does not have an existing capitalization policy for Regional Services Costs.¹⁴⁶

¹⁴¹ Exhibit B-1, Section 6.1.3, p. 42.

¹⁴² Exhibit B-15, Section 4.2, p. 31.

¹⁴³ Exhibit B-12-1, BCUC IR 21.6.

¹⁴⁴ Exhibit B-1, Section 6.1.3, pp. 42–43.

¹⁴⁵ Exhibit B-12-1, BCUC IR 21.3.

¹⁴⁶ Exhibit B-12-1, BCUC IR 21.5.

Positions of the Parties

Intervenors did not raise any issues with Corix's proposal to capitalize Corporate Services and Regional Services for the UniverCity customer group.

Panel Determination

The Panel approves Corix's proposed capitalized overhead rates for UniverCity for the Test Period. The Panel finds the proposed rates reflect a reasonable basis for capitalization of corporate and regional services overhead costs that are not directly charged to capital projects and notes that the BCUC has historically accepted similar overhead capitalization policies for other utilities. The Panel agrees that the proposed capitalization rates are reasonable for the Test Period given the completion of the CEP in 2020 and the continued buildout of UniverCity for the remainder of the of the Test Period. However, given the high amount of expected capital activity in the Test Period and the expected completion of the build-out of UniverCity by 2025, the Panel is not convinced this policy should be approved for any subsequent test period. **Accordingly, Corix is directed to address the appropriateness of continuing this policy in its next Revenue Requirement Application.**

2.4.4 Depreciation and Amortization Expense

Corix explains that it assigns the capital costs of the project to specific asset categories, and these asset categories are depreciated on a straight-line basis at the proposed rates. A description of the capital costs assigned to each asset category is as follows:¹⁴⁷

- Building – Capital costs assigned to the building asset category are: (i) Civil Works Items; and (ii) Buildings and Foundations. These include, but are not limited to, the fuel bin building and truck loading/offloading areas, the central energy plant building, site preparation and architectural enhancements.
- Biomass Plant – Capital costs assigned to the Biomass Plant asset category are associated with the biomass module within the CEP.
- Biomass Development – Capital costs assigned to the Biomass Development asset category are: (i) Project Development; and (ii) Project Management costs.
- Natural Gas Plant – Capital costs assigned to the Natural Gas Plant asset category are associated with the natural gas plant within the CEP.
- Distribution – Capital costs assigned to the Distribution asset category are distribution piping costs for SFU and UniverCity.
- Equipment – Capital costs assigned to the Equipment asset category are:
 - the interconnection and energy transfer station costs for the SFU Interface; and
 - the interconnection, connection line and energy transfer station costs associated with the UniverCity Interface.

The asset categories and associated depreciation rates are consistent with the TESA and are presented below.¹⁴⁸

¹⁴⁷ Exhibit B-1, Section 8.1.3, pp. 54-55.

¹⁴⁸ Exhibit B-1, Section 8.1.3, p. 54.

Table 15: Asset Categories and Associated Depreciation Rates¹⁴⁹

ASSET CATEGORIES	DEPRECIATION RATES (A)	Implied Useful Life (1/A) ¹⁵⁰
Building	1.5%	66.6 years
Biomass Plant	3.0%	33.3 years
Biomass Development	3.0%	33.3 years
Natural Gas Plant	3.0%	33.3 years
Distribution	1.5%	66.6 years
Equipment	3.0%	33.3 years

All SFU utility plant costs and the corresponding depreciation expense relate to the construction of the biomass CEP, Campus Connection and Campus energy transfer station, and the provision of thermal energy services to SFU's district energy system starting in 2020.¹⁵¹ Unlike SFU, Corix has been providing service to UniverCity customers from temporary natural gas boilers prior to the construction of the CEP. UniverCity's utility plant costs, and the associated depreciation include the impact of the CEP in 2020. From 2020 through to 2024, the utility plant costs include the capital additions associated with the build-out schedule for the UniverCity neighbourhood. Further, as directed by Order G-220-19, Corix incorporated the removal of three condensing boilers and associated equipment housed in Temporary Energy Centre No. 1 in 2021, thereby reducing UniverCity's plant in service by the projected value of the Temporary Energy Centre No. 1 at the time of removal.¹⁵² Depreciation expense for the CEP is allocated to SFU and UniverCity based on the capital cost allocation percentages set out in Table 13 - Updated CEP Capital Cost Allocation Percentages in Section 2.4.1.

Amortization expense relates to CIACs for the CEP project and to the UniverCity build-out.¹⁵³ CIACs received from SFU are amortized using the same rate as the depreciation rate for each respective asset category. The \$4.75 million CIAC contributed by SFU is applied to the Biomass Plant and has an amortization rate of 3 percent. SFU's re-imbursement for landscaping of approximately \$183,000, which Corix recorded as a CIAC, is also amortized at the rate of 3 percent.¹⁵⁴ Corix also applies a 3 percent amortization rate to all CIACs applicable to UniverCity.¹⁵⁵

Based on the above depreciation rates, the annual depreciation and amortization expense for UniverCity and SFU over the proposed Test Period are presented in the table below. The depreciation and amortization expense for SFU is presented on an aggregate basis due to the impact of the confidential risk reward collar mechanism on this total. The detailed depreciation and amortization expenses for SFU are provided in the confidential financial model included with the Application.¹⁵⁶

¹⁴⁹ Exhibit B-1, Section 8.1.3, Table 25, p. 54.

¹⁵⁰ BCUC calculated Implied Useful Life by utilizing this formula - 1 divided by depreciation rate.

¹⁵¹ Exhibit B-1, Section 8.2.1, p. 56.

¹⁵² Exhibit B-1, Section 3.2, p. 19; Section 8.3.1, p. 58.

¹⁵³ Exhibit B-1, Section 5.2, p. 26.

¹⁵⁴ Exhibit B-15-2, Section A-1, p. 3.

¹⁵⁵ Exhibit B-1, Section 8.1.3, p. 55.

¹⁵⁶ Exhibit B-1, Section 8.2.3, p. 57.

Table 16: UniverCity and SFU Depreciation & Amortization Expense (\$)¹⁵⁷

Depreciation & Amortization Expense	Test Period			
	2020	2021	2022	2023
UniverCity				
Depreciation - Building	35,714	73,783	73,783	73,783
Depreciation - Biomass plant	28,012	141,361	141,361	141,361
Depreciation - Biomass development costs	--	30,148	30,148	30,148
Depreciation - Natural Gas Plant	196,250	159,108	156,687	156,687
Depreciation - Distribution	109,970	58,197	67,662	78,563
Depreciation - Equipment	72,808	180,098	197,348	209,348
Amortization - CIACs	(55,071)	(60,506)	(79,804)	(93,910)
Subtotal UniverCity Depreciation & Amortization	387,683	582,189	587,186	595,981
SFU				
Subtotal Depreciation & Amortization	64,269	416,156	416,156	416,156
Total Depreciation & Amortization	451,952	998,345	1,003,342	1,012,137

Positions of the Parties

Subject again to the comments on the AFUDC which are addressed above, SFU also takes no issue with depreciation rates.¹⁵⁸ BCOAPO did not comment on the forecast depreciation and amortization expense or the proposed depreciation and amortization rates.

Panel Determination

Pursuant to section 56 of the UCA, the Panel approves the depreciation rates set out in Table 15. The depreciation rates are consistent with the information reviewed in the 2017 BMDEU CPCN, are reflective of the expected service lives of the capital assets, and the allocation of depreciation expense to the SFU and UniverCity is appropriate. The Panel notes the interveners did not specifically comment on the rates.

The Panel finds the proposed amortization rates for the CIACs reasonable for the purpose of calculating the amortization for the Test Period. The 3 percent rate used for the SFU and UniverCity CIACs is consistent with the Biomass Plant depreciation rate.

Accordingly, the Panel finds the calculated depreciation and amortization expense set out in Table 16 provides a reasonable basis for determining the Revenue Requirement for the Test Period.

2.5 Deemed Interest and Return on Equity

Corix forecasts deemed interest expense for the Test Period using a long-term deemed debt financing costs of 3.36 percent per annum.¹⁵⁹ The deemed interest rate on debt financing is based on utility credit spreads for BBB and BBB (low) rated debt and the 10-year Government of Canada bond yield, consistent with the approach outlined for calculating a “default debt” rate for small TES utilities from BCUC’s GCOC Decision (Stage 1) and subsequently confirmed in BCUC’s Stage 2 Decision in 2014.¹⁶⁰

¹⁵⁷ BCUC prepared table based on data from Exhibit B-15-2, Section C, Table 25, p. 21; Table 28, p. 23.

¹⁵⁸ SFU Final Argument, p. 4.

¹⁵⁹ Exhibit B-15-2, p. 19.

¹⁶⁰ Exhibit B-15, p. 40; BCUC GCOC Stage 2 Decision, March 25, 2014, p. 123.

Corix uses a deemed capital structure of 57.5 percent debt and 42.5 percent equity, and an equity risk premium of 75 basis points over the benchmark low risk utility rate, in accordance with the BCUC's determination regarding the minimum default capital structure and equity risk premium for small TES utilities in the Generic Cost of Capital Stage 2 proceeding.¹⁶¹

Further to Table 1 in Section 2.0, the table below shows the debt and equity financing in greater detail for SFU and UniverCity the Test Period.

Table 17: Deemed Interest and Return on Equity of BMDEU¹⁶²

Description	2020			2021			2022			2023		
	SFU	UniverCity	Total	SFU	UniverCity	Total	SFU	UniverCity	Total	SFU	UniverCity	Total
\$ in '000												
Debt Financing [A]	\$10,926	\$ 12,231	\$23,157	\$10,836	\$ 12,540	\$23,376	\$10,549	\$ 12,708	\$23,257	\$10,311	\$ 12,912	\$23,223
Deemed Interest (3.36% per annum) [C]	\$ 44	\$ 140	\$ 184	\$ 364	\$ 421	\$ 785	\$ 354	\$ 427	\$ 781	\$ 346	\$ 434	\$ 780
Equity Financing [B]	\$ 8,076	\$ 9,040	\$17,116	\$ 8,009	\$ 9,269	\$17,278	\$ 7,797	\$ 9,393	\$17,190	\$ 7,621	\$ 9,544	\$17,165
Return on Equity (9.5%) [D]	\$ 92	\$ 292	\$ 384	\$ 761	\$ 881	\$ 1,641	\$ 741	\$ 892	\$ 1,633	\$ 724	\$ 907	\$ 1,631
Total Financing [A + B] [E]	\$19,002	\$ 21,271	\$40,273	\$18,844	\$ 21,810	\$40,654	\$18,346	\$ 22,102	\$40,447	\$17,932	\$ 22,456	\$40,388
Capital Structure - Debt [A / E]	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%	57.50%
Capital Structure - Equity [B / E]	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%	42.50%
Total Financing Costs [C + D]	\$ 136	\$ 431	\$ 568	\$ 1,125	\$ 1,302	\$ 2,427	\$ 1,095	\$ 1,319	\$ 2,414	\$ 1,070	\$ 1,340	\$ 2,411

On May 21, 2021, the BCUC established the scope for the 2021 Generic Cost of Capital (GCOC) proceeding,¹⁶³ which among other things, will establish a methodology and process for the deemed capital structure, deemed interest rate, and ROE. This proceeding may impact Corix in subsequent periods. The 2021 GCOC proceeding is currently ongoing, and the long-term deemed debt financing cost is expected to be reviewed in stage 2 of that proceeding.

Positions of the Parties

SFU acknowledges that the long-term deemed debt financing cost is 3.36 percent in accordance with TESA, and Corix's deemed capital structure of 57.5 percent debt and 42.5 percent equity, and a return on equity of 9.5 percent.

BCOAP0 did not comment on the interest rate or ROE.

Panel Determination

The Panel finds the forecast deemed interest and ROE reasonable for setting rates for the Test Period. In forecasting the interest and ROE amounts included in the Revenue Requirements, Corix applies the BCUC approved deemed capital structure of 57.5 percent debt and 42.5 percent equity and the allowed ROE of 9.5 percent. Corix's deemed interest calculation is consistent with an established BCUC approach and the rate specified in the TESA.

¹⁶¹ Exhibit B-1, p. 53.

¹⁶² The BCUC created the table by compiling information found in Exhibit B-15-2, Section C, Table 24, p. 20, Table 25, p. 21; Table 27, p. 22; Table 28, p. 23; Exhibit B-12-1, response to BCUC IR 28.1.

¹⁶³ BCUC Order G-156-21.

2.6 Summary Determination on the Revenue Requirements

Based on the findings and determinations on the components of the forecast Revenue Requirement set out above, the Panel finds the forecast Revenue Requirements set out in Table 1 reasonable for setting rates for the Test Period. The forecast Revenue Requirements reasonably reflect Corix’s forecast cost of service and are an appropriate basis on which to establish rates.

3.0 Rate Design

3.1 UniverCity Rate Design

In addition to maintaining the existing RDDA, Corix proposes to include a 4-month rate rider for 2020 and, effective January 1, 2021, to flow-through energy costs for UniverCity customers. Corix’s proposal related to energy costs results in the creation of a Variable Energy Charge to recover only UniverCity energy costs, and the creation of an Energy Cost Reconciliation Account (ECRA) to capture the difference between actual energy costs and revenue from the Variable Energy Charge. Corix submits this proposal enhances energy cost transparency and sends the appropriate price signal to customers.¹⁶⁴

3.1.1 UniverCity RDDA

In 2011, when Corix applied to the BCUC for a CPCN to construct and operate a district energy system for UniverCity, it anticipated the build-out of the development would occur over a nine-year period and that some of the largest capital requirements would be required well in advance of the date when sufficient volumes would exist to recover the costs on an economical basis. As a result, Corix proposed to implement a levelized rate structure to reduce the cost to customers in the early stages of the project and to fairly distribute the costs to all customers over a 20-year period.¹⁶⁵

As noted previously, when the BCUC approved establishment of the RDDA in the 2011 UniverCity CPCN, it was intended to capture the revenue requirement variances under a 20-year levelized rate approach which was scheduled to dissolve by the end of 2031. In that decision, Corix was directed to file a report annually showing the calculation and balance of the revenue deferral account.¹⁶⁶ The BCUC found that while it is not uncommon to permit “Greenfield” start-up utilities to charge levelized rates, it is imperative that rates being charged to customers fairly represent the type of service being offered, in this case being a thermal energy service supplied by temporary natural gas boilers.¹⁶⁷

Corix explains that the levelized rate structure results in the annual revenue requirements being higher than the revenue collected in the early years, thereby causing a revenue deficit which is added to the RDDA. In the later years, Corix states, customers will repay the RDDA balance once there are annual revenue surpluses. The RDDA allows for smoothing of customers rates while ensuring that the utility has an opportunity to earn its fair rate of

¹⁶⁴ Exhibit B-1, p. 2.

¹⁶⁵ Application for a CPCN for the Neighborhood Utility Service at UniverCity, Burnaby (2011 UniverCity CPCN), Exhibit B-11, Section 3.8, p. 27.

¹⁶⁶ 2011 UniverCity CPCN Decision, directive 3 and 4; Exhibit B-1, Section 9.5, p. 69.

¹⁶⁷ 2011 UniverCity CPCN Decision, Section 6.2.5, p. 49.

return. Corix submits that without a levelized rate approach and if rates were set annually, customers would be paying much higher rates during the build-out period.¹⁶⁸

In Corix's view, during the early years, when there is a deficit balance in the RDDA, which represents costs incurred by Corix but not yet recovered, there is a risk of cost recovery for a greenfield utility where build-out has not yet been achieved. If a large balance is accumulated in the RDDA and build-out halts, there is the possibility that the balance in the RDDA will become unrecoverable without excessive rate increases. If this situation were to arise, Corix submits it could risk being unable to recover its costs.¹⁶⁹

In 2016, the BCUC approved¹⁷⁰ the continued use of the RDDA for UniverCity and reduced the target recovery period from 20 years to 15 years based on the updated information available at that time but made no change to the basis of recognition of the RDDA variances that were subject to recovery.¹⁷¹

Prior to its proposed changes to the treatment of energy costs discussed in Subsection 3.1.3, Corix notes that in the existing rate design has the fuel costs bundled with all other costs of the utility, and accordingly all forecast cost variances are captured in the RDDA.¹⁷² In the existing mechanism, if there is a shortfall in a particular year where the revenues collected are less than the costs (including fuel costs) for the utility in the year, the difference is recognized in the RDDA.¹⁷³

Corix submits that deferral treatment of O&M costs remains appropriate since 2021 will be the first full year of operating the new biomass facility, the build-out at UniverCity is still not yet complete, and the rate levelization plan has not reached its conclusion. Corix elaborates that the biomass facility is a major infrastructure investment that requires time to optimize and stabilize operations.¹⁷⁴ Corix notes that if O&M variances are not captured in the RDDA, then any forecast variances in O&M costs would be borne by the utility shareholder. The variance may be positive (actual costs higher than test year) or negative (actual costs may be lower than test year). Corix submits that if this was the case, the utility shareholder would be faced with potentially higher risk.¹⁷⁵

The following table provides the UniverCity Revenue Requirement components subject to deferral account treatment and the amounts recorded in each of the deferral accounts.

¹⁶⁸ Exhibit B-20, BCOAPO IR 13.1.

¹⁶⁹ Exhibit B-20, BCOAPO IR 10.5.

¹⁷⁰ By Orders G-215-15 and G-48-16A.

¹⁷¹ Exhibit B-20, BCOAPO IR 13.3.1.

¹⁷² Exhibit B-18, BCUC IR 51.4; Exhibit B-20, BCOAPO IR 13.3.1.

¹⁷³ Exhibit B-20, BCOAPO IR 13.3.1.

¹⁷⁴ Exhibit B-18, BCUC IR 51.3.

¹⁷⁵ Exhibit B-18, BCUC IR 51.5.

Table 18: UniverCity Revenue Requirement Components and Deferral Account Applicability¹⁷⁶

SFU Rev. Req. Line Item	Subject to Deferral Account Treatment?	Applicable Deferral Account	Amount to be Accrued
Operating Costs	Yes	RDDA, approved by C-7-11	Difference between forecast and actual costs*
Land Lease	Yes		
Franchise Fees	Yes		
Biomass Fuel	Yes	Proposed Energy Cost Reconciliation Account	
Natural Gas	Yes		
Electricity	Yes		
Property Tax	Yes	RDDA, approved by C-7-11	
Depreciation	Yes		
Amortization – CIACs	Yes		
Income Tax	Yes		
Interest on Debt	Yes		
Return on Equity	Yes		

* Corix does not accrue Corporate or Regional Allocations above the approved amounts.

In Corix's view, the purpose of the UniverCity RDDA is to allow for a rate levelization plan which is typically used for greenfield utilities with a customer base that is scheduled to build-out over time.¹⁷⁷ Corix notes that unlike UniverCity, forecast variance treatment is not applied to SFU for O&M costs because SFU and Corix have a negotiated TESA which was reviewed and approved by the BCUC.¹⁷⁸ Corix explains that SFU's rates are designed to recover its annual cost of service from the first year of service but UniverCity customer rates are not set to recover its annual cost to provide service due to the greenfield nature of the development and the ongoing build-out of the neighbourhood.¹⁷⁹

Since Corix requests approval of rates to the end of 2023, the RDDA will still have an outstanding balance at that time. Corix states it intends to file a subsequent rate application to address customer rates from 2024 onwards, which would take into consideration the RDDA balance at December 31, 2023.¹⁸⁰

The RDDA balance is \$2.7M as of December 31, 2019 and is forecast to increase to \$5.9 million by the end of the Test Period, as set out below.¹⁸¹

¹⁷⁶ Exhibit B-12-1, BCUC IR 30.1.

¹⁷⁷ Exhibit B-12-1, BCUC IR 30.2.

¹⁷⁸ Exhibit B-18, BCUC IR 51.2.

¹⁷⁹ Exhibit B-18, BCUC IR 51.1.

¹⁸⁰ Exhibit B-12-1, BCUC IR 35.1.

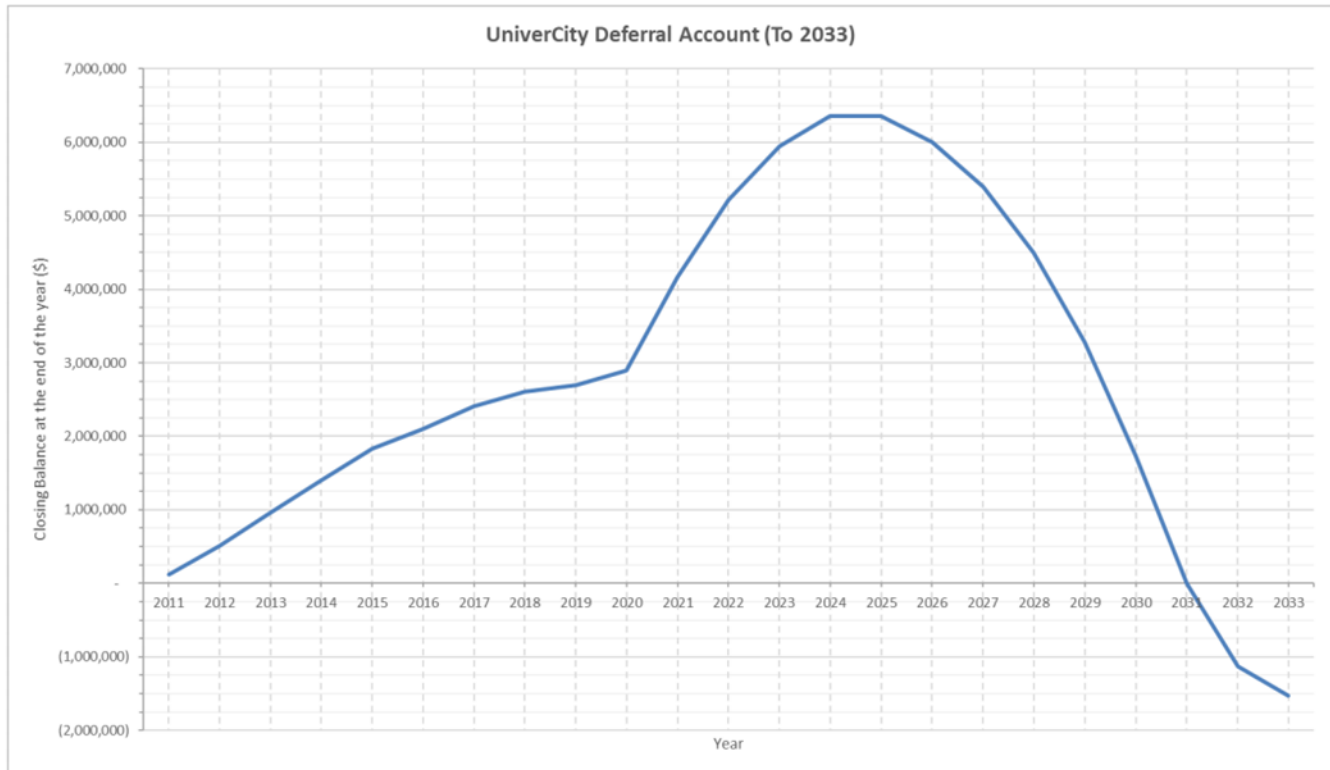
¹⁸¹ Exhibit B-1, Section 9.5, pp. 69–70.

Table 19: RDDA Balance¹⁸²

RESIDENTIAL DEFERRAL ACCOUNT	2019	2020	2021	2022	2023
Opening balance	\$ 2,603,052	\$ 2,700,852	\$ 2,900,199	\$ 4,168,743	\$ 5,213,907
<u>Additions/Reductions</u>					
Revenue requirement (excl. Energy Costs from 2020 onwards)	1,293,431	1,126,848	2,683,730	2,750,921	2,835,537
Revenue billed (excl. Energy Charge Revenue from 2020 onwards)	(1,354,952)	(1,076,024)	(1,602,633)	(1,954,556)	(2,393,317)
Revenue deficiency (surplus)	(61,521)	50,825	1,081,097	796,365	442,220
Deferral Account Working Capital Financing	159,321	148,523	187,447	248,800	296,092
Net change in Deferral Account	97,800	199,348	1,268,544	1,045,164	738,312
RDA Closing balance	2,700,852	2,900,199	4,168,743	5,213,907	5,952,218

Based on the Amended Evidentiary Update, Corix forecast that the first year in which a revenue surplus is anticipated is 2025 with recovery by 2031, as illustrated below.

Figure 1: UniverCity RDDA Closing Balance (Amended Evidentiary Update)¹⁸³



Corix summarizes its position that the RDDA should continue to function in the same manner as previously approved, as follows:

¹⁸² Exhibit B-18, BCUC IR 53.1.

¹⁸³ Exhibit B-15-2, Chart1, p. 26.

- UniverCity’s build-out continues to progress but build-out is not yet complete. From 2021 through to 2024, 45 percent of the total forecast floor area and 43 percent of the forecast total annual energy demand remains to be connected;
- The significant investment in a low-carbon energy supply infrastructure, existing deficit balance in the RDDA, and revenue from UniverCity depends on this build-out. Corix states that if it were to be directed to remove deferral treatment of O&M costs from the RDDA during the Test Period, the utility shareholder would be faced with potentially higher risk than previously contemplated, which would require a re-evaluation of the applicable equity risk premium used to calculate this utility’s return on equity;
- Without the use of an RDDA, the initial customers would be burdened with unjust and unreasonably high costs that also lead to intergenerational inequity as customers that connect at a later time would benefit from the system at a lower cost than the initial customers. Corix submits the lack of an RDDA would discourage investment into new utility infrastructure, work to reduce competition in the market, and in the case of the BMDEU, would result in a barrier to switching to a feasible low-carbon energy source;
- Even with the RDDA, Corix submits it is incentivized to contain costs because district energy systems are not natural monopolies like large natural gas and electric systems where costs are typically postage stamped and the risks and costs are paid by captive customers with no other feasible options. District energy systems are stand-alone energy systems where competition for owning and operating a new TES instills market discipline. To be awarded new greenfield energy systems and/or to add new buildings to an existing energy system utility, successful operators must demonstrate past technical expertise and cost containment. District energy utilities must therefore strive to maintain efficient operations and contain costs.

Given the above, Corix submits there should be no changes to the function and operation of the existing RDDA other than the removal of energy costs and Variable Charge revenue as proposed by Corix through the request to flow-through energy costs to UniverCity ratepayers.¹⁸⁴

Positions of the Parties

Intervenors were silent on the cost components and variances subject to recovery in UniverCity’s RDDA.

BCOAPO notes that the RDDA was originally approved to allow large capital expenditures to be levelized in rates over 15 years. With the new CEP project in place, BCOAPO submits that the RDDA should be extended to allow a full 15-year levelization period (at a minimum) to mitigate the impacts on residential customers, rather than over the 10 or 11 years remaining since the BCUC determined the amount should be recovered over 15 years. BCOAPO notes a 20-year levelization period was originally implemented in 2011.¹⁸⁵

In Reply, Corix states it is not seeking any recovery of the RDDA at this time. Corix reiterates that based on the forecast costs and revenue it anticipates that the RDDA balance will be fully recovered by the end of 2031. Corix submits currently approved levelization period was developed based on forecast costs and revenues associated with the two temporary energy centres that have now been replaced by the CEP. Since this Test Period is until

¹⁸⁴ Corix Final Argument, pp. 9–10.

¹⁸⁵ BCOAPO Final Argument, p. 10.

the end of 2023, Corix will have the opportunity to operate the new CEP and make any adjustments to the levelization period in the future.¹⁸⁶

Panel Determination

A key issue in this proceeding is whether it continues to be appropriate for Corix to have forecast variance treatment through the RDDA for all Test Period forecast revenue and Revenue Requirement costs.

In several recent TES RRA decisions (discussed below), the BCUC has found that setting rates based on actual results or capturing actual revenues and costs in an RDDA for future recovery in rates is not consistent with the following BCUC's TES rate-setting principles:

- Rates should provide an equitable balance of risk and cost (such as forecast load and cost risk) between the utility and ratepayers or generation of ratepayers;
- Rates should be set to use the least deferral mechanisms possible; and
- The ability of the utility to pass controllable costs onto ratepayers should be restricted.¹⁸⁷

As noted in the discussion on the regulatory framework, a traditional COS ratemaking approach links rates to recovery of the operating and capital costs based on forecast revenue and cost components except for those revenue and cost components that are outside a utility's control or are subject to a high degree of forecast uncertainty. This approach is consistent with a recent decision in which the BCUC determined it is not appropriate to set utility rates on actual results:

In general, the Panel does not agree that it is appropriate to set utility rates based on hindsight, using actual results. The Panel agrees with the CEC [Commercial Energy Consumers Association of British Columbia] that it is not appropriate for a utility to present rates on a "backwards looking basis". Rates should be set prospectively based on a reasonable forecast of revenue requirement items, and the utility should be held accountable for its forecast with the exception of those revenue requirement items that the regulator approves as being appropriate for deferral treatment because the items are outside the control of management or are subject to a high degree of forecast uncertainty. If rates are set based on actual results, there is no incentive for a utility to operate efficiently since it is effectively guaranteed its allowed rate of return. This is contrary to the regulatory compact under which a utility is afforded a reasonable opportunity to earn a fair return on its invested capital. [emphasis in original]¹⁸⁸

While the Panel endorses these views, it considers that there are specific circumstances for the BMDEU and the UniverCity customer group that warrant the continuation of forecast variance treatment. Our consideration includes the following:

- 2021 will be the first full year of operating the new biomass facility by Corix and the Test Period will provide time for Corix to optimize and stabilize operations;

¹⁸⁶ Corix Reply, p. 9

¹⁸⁷ Shannon Estates Utility Ltd. Levelized Rate Application Decision and Order G-36-21.

¹⁸⁸ Creative Energy Vancouver Platforms Inc. 2019-2020 Revenue Requirements Application for the Core Steam System and Northeast False Creek Service Areas, Decision and Order G-227-20, dated September 2, 2020.

- The amount of remaining build-out of UniverCity represents 43 percent of the forecasted total annual energy demand to be connected to the system. Since Corix is not the developer, the forecast demand to be added during the Test Period remains uncertain and outside of Corix's control. Any delays during the Test Period will impact revenue, depreciation and amortization, interest and ROE estimates;
- Energy costs are variable costs¹⁸⁹ and are proposed to be treated on a flow-through basis. As noted in Subsection 3.1.3, these costs are outside Corix's control and are subject to forecast uncertainty; and
- For the Test Period, there is a degree of incentive for Corix to be efficient and control costs given that BMDEU is a greenfield operation operating in a non-natural monopoly environment and it needs to remain attractive to the load still to be added to the system both during the Test Period and beyond. As Corix points out, a large RDDA balance and a halt in customer additions could result in an RDDA that becomes unrecoverable without excessive customer rate increases, thereby adding risk to the recovery of Corix's assets.¹⁹⁰

In considering the appropriate treatment for O&M costs, Corix states that O&M costs for the BMDEU are comprised of fixed costs.¹⁹¹ While the Panel acknowledges there is some uncertainty due to the recent commencement of operations of the CEP, the fixed nature of these costs should result in less variance from forecast and provide Corix with a reasonable degree of control over such costs. Further, the majority of O&M costs that may be subject to some degree of forecast uncertainty are shared with SFU. The Panel notes the TESA does not provide for forecast variance treatment for SFU's share of these O&M costs. Rather, Corix states that an unforeseen situation could arise during the Test Period that may necessitate an application for rate changes before the end of the Test Period to adjust SFU's Capacity Charge only.¹⁹² Unless Corix brings forward such an application, any other forecast risk for SFU's share of O&M costs is borne by Corix's shareholder.

In contrast, UniverCity's share of forecast O&M cost variances is proposed to be adjusted to actuals through the RDDA. Therefore, by design, an adjustment to UniverCity rates would not be required for Corix to recover such an unforeseen event because Corix proposes the variance be adjusted through the RDDA. The Panel considers this treatment to be unduly discriminatory for the UniverCity customer group since it could result in UniverCity customers paying more than SFU for the same service. The Panel also notes that Corix has updated the 2020 Revenue Requirement items for UniverCity costs to reflect actual figures and include the October 23, 2020 service commencement date of the biomass CEP. If Corix experiences significant unforeseen and non-controllable forecast variances in 2021 to 2023, it can file an application for approval to recover such amounts from both UniverCity customers and SFU.

With respect to Corix's argument that without forecast variance treatment there is a change in risk profile that may require a re-evaluation of the equity risk premium used to calculate its ROE, the Panel considers this to be an oversimplification. The Panel notes that Corix indicates it receives the same return as other Stream B TES's.¹⁹³ Further, not all TESs have been approved for full variance treatment of all revenue and revenue requirement items. The extent to which these differences alter the risk profile among TES's and the impact this has on the

¹⁸⁹ Exhibit B-1, p. 49.

¹⁹⁰ Exhibit B-20, BCOAPO IR 10.5

¹⁹¹ Exhibit B-1, p. 33.

¹⁹² Exhibit B-1, p. 73.

¹⁹³ Exhibit B-1, p. 3.

allowed ROE is a matter that the Panel recommends be explored in the BCUC GCOC proceeding that is currently underway.

Given the above, the Panel directs that, commencing in 2021 and for the remainder of the Test Period, the function and operation of the existing RDDA be changed to exclude recognition of O&M forecast variances and to reflect the proposed treatment of energy costs and Variable Charge revenue as discussed Subsection 3.1.3. Consistent with the TES rate setting principles, the removal of O&M from forecast variance treatment reflects an equitable balance of risk and cost between Corix and its ratepayers, reduces the amount of costs subject to the RDDA deferral mechanism and holds Corix accountable for costs that are reasonably fixed and controllable.

Regarding the continuation of variance treatment for other elements of the UniverCity's Revenue Requirements and forecast revenue, the Panel agrees these items remain outside of Corix's control or are subject to significant forecast uncertainty for the Test Period. However, during the Test Period the UniverCity build-out is expected to be closer to completion and there will be actual operating data of the CEP. To facilitate the BCUC's determination of the appropriate treatment of future forecast variances, **Corix is directed to include the following information in its next revenue requirement application:**

- Provide an update to Corix's forecast risk including consideration of UniverCity's build out schedule and actual operational data of the CEP;
- Identify, with rationale and reference to the BCUC Regulatory Account Filing Checklist and the TES rate setting principles, the revenue requirement line items for UniverCity that Corix proposes to continue to have forecast variance treatment; and
- Compare Corix's proposed forecast variance treatment to the BCUC approved variance treatment for other TES utilities (e.g. River District Energy, Shannon Estates Utility Ltd. and Creative Energy Vancouver Platforms Inc.).

The Panel acknowledges BCOAPO's concerns regarding the length of the levelization period. However, Corix is not proposing to commence recovery of the RDDA during the Test Period. Given the delay in the build-out of UniverCity and since the completion of the CEP has only occurred during the Test Period, the Panel agrees that it is premature to address the recovery of the RDDA at this time. Obtaining an understanding of the actual operating results of the CEP and an updated outlook for the completion of the UniverCity development will help inform the BCUC's determination on an appropriate levelization period and levelized rates in the future. However, the Panel is concerned with the projected value of the RDDA (approximately \$6 million at the end of the Test Period) and the impact this balance will have on future rates. **Accordingly, Corix is directed to address the recovery of the RDDA and levelized rates for UniverCity in its next revenue requirement application.**

3.1.2 Proposed 2020 4-Month Rate Rider

As noted previously, the Test Period covers the rates for UniverCity for the period September 1, 2020 to December 31, 2023. Corix does not propose any change to the existing approved UniverCity rates for 2020.¹⁹⁴

¹⁹⁴ Exhibit B-1, Executive Summary, p. 3.

Instead, it proposes a 4-month rate rider of \$0.2748/m² per Month as a charge. Corix submits this proposed rate rider is designed to:

- Smooth out the impact of the CEP going into service Sep 1, 2020;
- Reduce the existing deficit in the RDDA;
- Transition UniverCity customers to flow through energy costs with a Variable Energy Charge; and
- Limit the annual 2020 bill impact to less than 10 percent.¹⁹⁵

To calculate the 4-month Rate Rider, Corix stated that the revenue target was \$117,600. Corix proposes to record revenue associated with the 4-month rate rider in the RDDA.¹⁹⁶

Intervenors did not comment on the 2020 4-month rate rider for UniverCity.

Panel Determination

The Panel approves the proposed 2020 4-month rate rider of \$0.2748/m² on a permanent basis. Given that the CEP commenced operation on October 23, 2020, an increase in rates is warranted to commence recovering the increase in the cost of service for the four-month period ending December 31, 2020. In the Panel's view, Corix's proposal is easy for customers to understand and provides some rate stability by smoothing increases that arise due to increases in the cost of service as well as the impacts of rate design changes.

3.1.3 Proposal to Flow-through UniverCity Energy Costs

Variable Energy Charge

The Variable Energy Charge is proposed to recover only energy costs, while all other costs would be recovered through the existing Basic Charge. Corix outlines that its proposal to flow-through UniverCity energy costs (biomass, natural gas and electricity) would be accomplished by:

- Establishing the proposed Variable Energy Charge and the associated ECRA;
- Using the ECRA to capture actual energy costs and revenues from the Variable Energy Charge; and
- Amortizing the balance in the ECRA annually over next 12 months, consistent with BCUC approvals for other utility energy costs.

Corix submits that the proposals for a Variable Energy Charge and an ECRA to flow-through energy costs are just, reasonable and result in fair rates for UniverCity customers as follows:

- Energy costs are variable costs that are impacted by energy prices in the market and customer consumption and are therefore outside of Corix's control.
- Flow-through energy costs increase price transparency and improves the price signals that customers receive, when compared to the existing rate structure whereby a portion of fixed costs is recovered through the Variable Rate and the revenue from the Variable Rate is captured through the RDDA.
- UniverCity's annual energy costs are material and range from 15 percent to 17 percent of the forecast total revenue requirement from 2021 to 2023 inclusive.

¹⁹⁵ Exhibit B-12-1, response to BCUC IR 37.1.

¹⁹⁶ Exhibit B-18, response to BCUC IR 52.3.

- The BCUC has approved the flow-through of energy costs for SFU under the TESA and Corix's proposal for UniverCity in this Application better aligns cost recovery for UniverCity customers with the approach approved for SFU and is consistent with the BCUC's approval of rates for other TESs.¹⁹⁷

The BCUC approved the proposed 2021 Variable Energy Rate on an interim basis.¹⁹⁸ Corix proposes that the BCUC determine UniverCity's Variable Energy Charge for 2022 and 2023 in a separate regulatory process discussed further below. Thus, based on Corix's proposal, it is not necessary for the Panel to approve UniverCity's forecast energy costs for 2022 and 2023.

Corix provides an assessment of its proposed rate design using the Bonbright rate design principles as follows.

Table 20: Assessment of Existing and Proposed UniverCity Rate Design¹⁹⁹

Item	Bonbright Rate Design Principles	Existing UniverCity Rate Structure	Proposed UniverCity Rate Structure
1	Practical	It is simple with a high degree of understandability.	It is simple with a high degree of understandability.
2	Uncontroversial as to interpretation	Some confusion caused by interpreting the rate as some of the fixed costs are recovered through the variable rate. Therefore, it is unclear what the variable rate represents.	No confusion/controversies caused by interpreting the rates. The fixed charge recovers fixed costs and the variable energy charge recovers variable energy costs.
3	Effectively yield total revenue requirements	Due to the variable rate recovering a portion of fixed costs there is a risk that low customer consumption would not effectively yield total revenue requirements.	Effectively yields total revenue requirements.
4	Provide revenue stability from year to year	Fixed Rate and Variable Rate designed for full cost recovery each year. Revenue stability susceptible to variations in customer consumption.	Fixed Charge and Variable Energy Charge designed for full cost recovery each year.
5	Provide rate stability	Variable rates less stable than proposed since it is influenced by both energy costs and fixed costs.	Use of ECRA and rate setting mechanism increases rate stability while providing revenue stability.
6	Fairness among customer classes	Applied equally to all customers in UniverCity	Applied equally to all customers in UniverCity
7	Avoid undue discrimination	Avoids undue discrimination between customers	Avoids undue discrimination between customers
8	Promote economic efficiency and discourage wasteful use of service	Does not provide the appropriate price signal to customers. Does not discourage wasteful use of service since lower customer consumption does not necessarily lead to lower costs for customers.	Provides the appropriate price signal to customers by flowing through costs. Discourages wasteful use of service since higher customer consumption leads to higher costs for customers and lower customer consumption leads to lower costs for customers.

Proposed Energy Costs Flowthrough Mechanism

Corix proposes an ECRA for UniverCity customers to record the difference between actual energy costs and the revenue collected through the proposed Variable Energy Charge. The ECRA was approved by the BCUC on an

¹⁹⁷ Corix Final Argument, pp. 12–13.

¹⁹⁸ Exhibit B-1, Section 10.2.2, pp. 75–76.

¹⁹⁹ Exhibit B-12-1, response to BCUC IR 36.1.

interim basis, effective January 1, 2021 and Corix requests permanent approval of the ECRA. The ECRA records the energy costs for UniverCity including biomass, electricity and natural gas costs, as well as the Variable Energy Charge revenue, starting on January 1, 2021.²⁰⁰ Corix explains that at this time the ECRA is proposed to be a non-rate base, flow-through account that does not attract financing costs. However, Corix indicates that it may apply to the BCUC for approval of financing costs to be applied to the ECRA based on information available at a later time.²⁰¹

In terms of the rate setting mechanism and the process for future rate changes, Corix proposes to establish a Variable Energy Charge Rate Setting Mechanism for UniverCity's Variable Energy Charge, based on Trigger Ratios of 0.95 and 1.05, which equate to a ±5 percent dead-band range for the ECRA Ratio. The ECRA Ratio is defined below:

$$\text{ECRA Ratio} = \frac{12 \text{ mth Forecast Variable Energy Charge Revenue}}{(12 \text{ mth Forecast Energy Costs} + \text{ECRA Balance at beginning of 12 mth Forecast period})}$$

If the ECRA Ratio is between 0.95 and 1.05 (i.e. $0.95 \leq \text{ECRA Ratio} \leq 1.05$) then the Variable Energy Charge will remain unchanged. If the ECRA ratio is outside the dead-band range, then Corix would request a Variable Energy Charge rate change that would result in a 12-month amortization of the ECRA balance.²⁰²

Corix proposes to submit a compliance filing by no later than March 1 of each year that provides the ECRA year-end balance, the forecast energy costs, the forecast revenue at existing rates and, if required, a Variable Energy Charge rate change request effective April 1 with the aim of amortizing the ECRA balance within 12 months.²⁰³ The first filing would occur no later than March 1, 2022.²⁰⁴ Corix requests permanent approval of the ECRA for UniverCity. The ECRA was approved by the BCUC on an interim basis, effective January 1, 2021.

Commencing in 2022, Corix proposes to amortize the balance in the UniverCity ECRA over a 1-year period in an effort to minimize the possibility of large balances in the ECRA, consistent with the length of time outlined in BCUC's Guidelines for Setting Gas Cost Recovery Rates outlined in BCUC letter L-5-01, which apply to natural gas utilities. Even though BMDEU is not a natural gas utility, Corix considers the 1-year amortization period reasonable in normal circumstances.²⁰⁵

Corix notes that the proposed approach for energy costs treatment in UniverCity is consistent with the approach approved by the BCUC in 2019 for Dockside Green Energy Utility in Order G-248-19.²⁰⁶

Positions of the Parties

BCOAPO submits it supports the creation of a deferral mechanism to capture differences in price and volume

²⁰⁰ Exhibit B-6, response to BCUC IR 1.4.1.

²⁰¹ Exhibit B-6, response to BCUC IR 1.4.2.

²⁰² Exhibit B-1, p. 74.

²⁰³ Exhibit B-1, p. 74; Exhibit B-11, response to BCUC IR 34.4 and 34.4.1.

²⁰⁴ Exhibit B-1, p. 74.

²⁰⁵ Exhibit B-1, Section 9.4, p. 68.

²⁰⁶ Exhibit B-1, p. 68; Exhibit B-20, response to BCOAPO IR 13.3.1.

variances related to pass-through energy costs as this is common practice in natural gas utility rate setting. BCOAPO notes that Corix's key argument to justify the appropriateness of an ECRA is the delay in the build-out of UniverCity which BCOAPO considers it to be a weak argument. However, BCOAPO argues there are sufficient alternatives grounds upon which to find the severance of the energy-related costs from the RDDA is appropriate and recommends the establishment of a threshold by which Corix seeks future rate changes.²⁰⁷

In reply, Corix states BCOAPO's recommendation has not been thoroughly tested in evidence and results in more regulatory process which would increase regulatory and administrative costs to be recovered from customers at BMDEU. If these incremental costs are captured by the UniverCity RDDA, there would also be an increase to the anticipated RDDA financing costs.²⁰⁸

Panel Determination

For the Test Period, the Panel approves Corix's proposed UniverCity rate structure consisting of a Variable Energy Charge to flow-through and recover all energy costs, with the balance of the Revenue Requirement (excluding energy costs and subject to the amounts added to the RDDA under the levelized rate structure) to be recovered through the existing Basic Charge. The Panel also approves:

- **Establishment of the ECRA on a permanent basis, to capture actual energy costs and revenues from the Variable Energy Charge;**
- **The annual Variable Energy Charge Rate Setting Mechanism for UniverCity's variable energy costs; and**
- **A 12-month amortization period for balances in the ECRA, unless otherwise determined by the BCUC.**

Corix's proposal maintains an appropriate price signal for ratepayers, aligns variable costs with the variable component of the rates and improves integrational equity among ratepayers by ensuring that existing ratepayers pay for energy consumed rather than adding such amounts to the RDDA. The flow through of energy costs also provides an equitable balance of risk between Corix and UniverCity ratepayers since energy costs are largely outside of Corix's control. The Panel also agrees with Corix that this rate design is transparent and understandable for customers/ratepayers.

Regarding the annual process to set the Variable Energy Charge, the Panel does not agree with BCOAPO's recommendation to establish thresholds for future rate changes. In the Panel's view, Corix's proposed rate setting mechanism is simple, efficient, and consistent with other BCUC proceedings to approve flow-through energy costs. Further, if the amount that accumulates in the ECRA has a minimal impact on the existing approved Variable Energy Rate, Corix can apply for no change in the rate in the annual rate setting proceeding.

3.2 SFU Deferral Mechanisms

Corix's rate design for SFU comprises a Capacity Charge, a Consumption Charge, and an Availability Charge, consistent with the approved TESA. For the Test Period, Corix proposes the establishment of two rate riders for

²⁰⁷ BCOAPO Final Argument, pp. 11–12.

²⁰⁸ Corix Reply Argument, p. 11.

SFU to facilitate the amortization of the balances in the previously approved Fuel Cost Deferral Account and Property Tax Deferral Account for SFU.²⁰⁹

3.2.1 SFU Fuel Cost Deferral Account and Rate Rider

The SFU Fuel Cost Deferral Account was established as part of Corix's CPCN Application and captures the difference between the forecast and actual biomass and electricity costs incurred by Corix for biomass and electricity, with the recovery or refund of any such differences in future periods through adjustments to SFU's capacity charge.²¹⁰

Corix proposes to recover/refund the balance in Fuel Cost Deferral Account through a rate rider using a 12-month amortization period. The rate rider would be calculated and charged using the same units as the Capacity Charge (\$/MW of Nominated Capacity/Month). Corix submits the Capacity Charge units are most appropriate since the TESA does not permit adjustments to the Availability Charge, and the Capacity Charge ensures recovery/refund within the proposed 12-month period.²¹¹

Additionally, Corix states that by no later than April 30, 2022, Corix would submit its BMDEU Annual Report to the BCUC, which would include the 2021 year-end balance for the Fuel Cost Deferral Account. By no later than June 1, 2022, Corix would submit a compliance filing with the BCUC with:

- (i) Information on the 2021 year-end balance of the deferral account, consistent with the information presented in the annual report;
- (ii) A request for an approval of the associated rate riders effective July 1, 2022, until June 30, 2023; and
- (iii) All relevant supporting information.²¹²

Positions of the Parties

SFU acknowledged Corix's utilization of the SFU Fuel Cost Deferral Account.²¹³ BCOAPO did not comment on SFU's Fuel Cost Deferral Account Rate Rider.

Panel Determination

For 2022 and 2023, the Panel approves Corix's proposed rate structure for the SFU Fuel Cost Deferral Account Rate Rider and Corix must use a 12 month amortization period for any balances in the deferral account. In the Panel's view, Corix's proposed rate rider and rate setting mechanism are simple, efficient, and consistent with other BCUC proceedings to approve flow-through rate riders. The Panel notes that the interveners do not object to this proposed process. **Corix is directed to file its BMDEU Annual Report to the BCUC to include the 2021 year-end balance for the Fuel Cost Deferral Account by no later than April 30, 2022. Corix is directed to file a compliance filing with the BCUC by no later than June 1, 2022, to include the following:**

²⁰⁹ Exhibit B-1, p. 2.

²¹⁰ 2017 BMDEU CPCN Decision, September 15, 2017, pp. 36–37.

²¹¹ Exhibit B-1, Section 9.3, p. 67.

²¹² Exhibit B-1, Section 9.3, p. 68.

²¹³ SFU Final Argument, p. 10.

- (i) Information on the 2021 year-end balance of the deferral account, consistent with the information presented in the annual report;
- (ii) A request for an approval of the associated rate riders effective July 1, 2022, until June 30, 2023; and
- (iii) All supporting information.

3.2.2 SFU Property Tax Deferral Account and Rate Rider

The Property Tax Deferral Account was established to recover or refund any difference between the forecast and actual property taxes for SFU²¹⁴ According to the TESA, “Following the initial property tax assessment, Corix will be responsible for forecasting property taxes for each test period and will not be entitled or required to adjust for any difference between forecast and actual property taxes between BCUC rate cases.”²¹⁵

Corix explains there is ongoing uncertainty about whether SFU will be required to pay property taxes until an initial property tax assessment has been received.²¹⁶

For the Test Period, Corix proposes to recover/refund the balance in the Property Tax Variance Account through rate rider using a 12-month amortization period. The rate rider would be calculated and charged using the same units as the Capacity Charge (\$/MW of Nominated Capacity/Month). The Capacity Charge units are most appropriate since the TESA does not permit adjustments to the Availability Charge, and the Capacity Charge ensures recovery/refund within the proposed 12-month period.²¹⁷

Additionally, Corix states that by no later than April 30, 2022, Corix would submit its BMDEU Annual Report to the BCUC, which would include the 2021 year-end balance for the Property Tax Variance Account. By no later than June 1, 2022, Corix would submit a compliance filing with the BCUC with:

- (i) Information on the 2021 year-end balance of the deferral account, consistent with the information presented in the annual report;
- (ii) A request for an approval of the associated rate riders effective July 1, 2022 until June 30, 2023; and
- (iii) All relevant supporting information.²¹⁸

Positions of the Parties

BCOAP and SFU did not comment on the Property Tax Variance Account Rate Rider.

Panel Determination

For 2022 and 2023, the Panel approves Corix’s proposed rate structure for the Property Tax Variance Account Rate Rider and Corix must use a 12 month amortization period for any balance in the deferral account. In the Panel’s view, Corix’s proposed rate rider and rate setting mechanism are simple, efficient, and consistent with other BCUC proceedings to approve flow-through rate riders. The Panel notes that the interveners do not object to this proposed process. **Corix is directed to file its BMDEU Annual Report to the BCUC by no later than April**

²¹⁴ 2017 BMDEU CPCN Decision, p. 36.

²¹⁵ Exhibit B-1, Section 9.2, p. 66.

²¹⁶ 2017 BMDEU CPCN Decision, p. 36; Exhibit B-1, Section 9.2, p. 66; Exhibit B-12-1, BCUC IR 32.2.

²¹⁷ Exhibit B-1, Section 9.3, p. 67.

²¹⁸ Exhibit B-1, Section 9.3, p. 68.

30, 2022, which will include the 2021 year-end balance for the Property Tax Variance Account. Corix is directed to file a compliance filing with the BCUC by no later than June 1, 2022, to include the following:

- (i) Information on the 2021 year-end balance of the deferral account, consistent with the information presented in the annual report;
- (ii) A request for an approval of the associated rate riders effective July 1, 2022 until June 30, 2023; and
- (iii) All supporting information.

4.0 Revenue and Rates

In this Section, the Panel reviews the load demand and energy forecasts, the proposed rates and forecast revenue for the SFU and UniverCity customer groups, and the treatment of differences between interim and permanent rates.

4.1 Load Demand and Energy Forecasts

Corix's proposed rates for the Test Period are based on the load demand and energy forecasts discussed below.

For UniverCity, the Basic Charge (in \$/m² per month) and the proposed 2020 4-month Rate Rider (in \$/m² per month) for September 1, 2020 to December 31, 2020 for the Test Period are calculated using the forecast square footage based on UniverCity's build-out schedule. The existing Variable Rate (in \$/kWh) and proposed Variable Energy Charge (\$/kWh) are calculated using the forecast energy demand of UniverCity customers.

For SFU, the Consumption Charges (in \$/kWh) for the Test Period depend on forecast energy demand. The Capacity Charge (in \$/MW of Nominated Capacity/Month) and Availability Charge (in \$/Month) are set pursuant to the TESA based on the nominated capacity of 10 MW and other terms provided in the TESA.

The tables below show the forecast square footage for UniverCity and the total BMDEU forecast energy demand for UniverCity and SFU.

Table 21: UniverCity Forecast Square Footage²¹⁹

UniverCity Forecast	2020	2021	2022	2023
Incremental floor area (sq metres)	23,474	17,332	19,656	24,041
Total floor area (sq metres) - Mid-Year Additions	107,005	127,408	145,902	167,751

²¹⁹ Exhibit B-15-2, p. 3 and Exhibit B-15-4 "UniverCity Forecast" Tab.

Table 22: Total Forecast Energy Demand for the BMDEU²²⁰**Data for Table 6 (Total Forecast Energy Demand for the BMDEU)**

Annual Energy Demand (2020 includes Actuals)	2020 (Actual)	2021	2022	2023
UniverCity (MWh)	12,103	15,298	17,586	20,232
SFU (MWh)	8,279	43,787	43,787	43,787
Total (MWh)	20,382	59,085	61,373	64,019

UniverCity

Corix's floor area forecast depends on UniverCity's build-out schedule. In the 2017 BMDEU CPCN application, Corix anticipated that UniverCity would have built a total of 213,984 m² floor area by 2021. As of February 2021, Corix expects the remaining buildings at UniverCity to be completed and connected to the BMDEU by the end of 2025, for a total of 214,196 m² floor area.²²¹ Corix periodically obtains updates to the build-out schedule from the developers of the UniverCity neighbourhood.²²² The table below shows UniverCity's updated development schedule as of February 2021 compared to the information submitted in the 2017 BMDEU CPCN.

Table 23: Build-out Schedule and Load Comparison (CPCN vs. Evidentiary Update)²²³

YEAR	UNIVERCITY DEVELOPMENT SCHEDULE					
	(2017 BMDEU CPCN)			(ACTUAL AND UPDATED FORECAST – FEBRUARY 2021)		
	PARCELS COMPLETED	TOTAL M ²	LOAD kW (DIVERSIFIED)	PARCELS COMPLETED	TOTAL M ²	LOAD kW (DIVERSIFIED)
2012	P22, P27, P28	14,522	710	P22, P27, P28	14,547	526
2013	P23, P29, P16 – Tower 1	20,554	867	P23, P29, P16 – Tower 1	20,565	835
2016	P16 – Tower 2, P25 – Townhomes, Apartments P25 – Commercial, P30	43,732	1,893	P16 – Tower 2, P25 – Townhomes, Apartments P25 – Commercial, P30	43,676	1,886
2017	P18	16,527	716	N/A	0	0
2018	P17, P21, P31, P33, P20	60,183	2,667	P18	16,480	838
2019	P36, P37	12,635	523	N/A	0	0
2020	P19, P34, P35	24,041	1,018	P17, P31	23,474	845
2021	P24	21,790	797	P21, P33	17,332	522
2022				P20	19,656	578
2023				P19, P34, P35	24,041	771
2024				P36, P37	12,635	420
2025				P24	21,790	640
	Total	213,984	9,191	Total	214,196	7,860

²²⁰ Exhibit B-15, p. 18; Exhibit B-15-2, p. 3 and Exhibit B-18, BCUC IR 40.1.1.²²¹ Exhibit B-15, pp. 12-14.²²² Exhibit B-1, p. 20.²²³ Exhibit B-15, Table 2, p. 12.

Corix explains that the information presented in the Application is on a calendar year basis to provide a direct comparison with the information from the 2017 BMDEU CPCN. However, the financial model uses a mid-year building connection to account for the unpredictability of the specific month that each building will connect to and start receiving service from the BMDEU.²²⁴ The UniverCity forecast revenue from the Basic Charge based on the total floor mid-year additions is discussed in Subsection 4.2.2.

For the UniverCity’s energy load forecast, Corix determines the UniverCity peak load and annual energy demand using estimated energy use and peak load demand units, Energy Use Intensities (EUI) and Peak Load Demand (PLD). Corix uses operational data for existing buildings in combination with design requirements from building developers to determine the EUI and PLD for each building.²²⁵

SFU

Corix’s SFU Capacity and Availability charges are based on their business agreements. Pursuant to the TESA, SFU has a nominated baseload capacity of 10 MW. Using a load duration curve, a 10-MW baseload capacity translates into an annual energy demand of 43,787 MWh.²²⁶

Table 24: SFU Baseload and Annual Energy Demand Forecast²²⁷

SFU Baseload and Energy Demand	
Biomass Baseload	10 MW
Annual Average Energy Demand	43,787 MWh

Corix notes that due to the TESA contractual obligations where SFU has a nominated capacity of 10MW, there will be no impact on the proposed rates for SFU if its baseload falls below 10 MW. Likewise, SFU is contractually limited to a maximum of 10 MW of biomass baseload and any additional capacity is provided by SFU’s own peaking infrastructure.²²⁸

SFU’s Consumption Charge is based on an annual energy load forecast. A variance in SFU’s annual energy consumption from forecast would be captured in the Fuel Cost Deferral Account and would not impact any of the rates proposed in this Application (i.e., Capacity Charge, Consumption Charge, Availability Charge).²²⁹ Directionally, if SFU energy use is lower than forecast, it will result in a surplus in the Fuel Cost Deferral Account, which would be refunded to SFU in equal payments over 12 months through a negative fixed charge rate rider (and vice versa).²³⁰ Section 3.2.1 provides further information about the Fuel Cost Deferral Account and the associated rate rider.

²²⁴ Exhibit B-1, p. 22.
²²⁵ Exhibit B-1, p. 22.
²²⁶ Exhibit B-1, p. 24.
²²⁷ Exhibit B-1, Table 5, p. 24.
²²⁸ Exhibit B-11, BCUC IR 7.1.1
²²⁹ Exhibit B-12-1, BCUC IR 7.1.2.
²³⁰ Exhibit B-12-1, BCUC IR 7.1 and IR 7.2.

The SFU forecast revenue using the above noted baseload and Energy demand is discussed in Subsection 4.2.1.

Positions of the Parties

SFU and BCOAPO did not comment on Corix’s load forecasts. However, BCOAPO notes the UniverCity build-out delay now anticipated to be completed by the end of 2025 and BCOAPO suggests that the recovery period be adjusted to the original 20-year levelization period that was implemented in 2011.²³¹ This issue is addressed in Section 3.1.1.

Panel Determination

The Panel finds the forecast load demand and energy forecasts reasonable for determining rates and calculating revenue forecasts in the Test Period. Corix’s forecasts for UniverCity are adequately supported by recent information and updated assumptions. For UniverCity, variances in the floor area forecast will be captured through revenue differences recorded in the RDDA and variances in UniverCity energy load will be handled through the Variable Energy Charge Rate Setting Mechanism. The load information for SFU is appropriately based on the approved TESA and variances in the energy forecast will be captured through the Fuel Cost Deferral Account.

4.2 Proposed Rates and Revenue Forecast

4.2.1 SFU

In the 2017 BCDEU CPCN Decision, the BCUC approved the rate design principles outlined in the approved TESA. The BCUC noted methodology used is a common approach to rate making and was agreed to by both SFU and Corix.²³² Based on the rate design principles set out in the approve TESA, Corix requests approval of the following rates for SFU:

Table 25: Final Proposed Rates for SFU²³³

²³¹ BCOAPO Final Argument, p. 10.

²³² 2017 BM BMDEU CPCN Decision, p. 28.

²³³ Exhibit B-22, p. 2, Table 1.

EFFECTIVE DATE:	TEST PERIOD			
	OCT 23 RD	JAN 1 ST	JAN 1 ST	JAN 1 ST
	2020	2021	2022	2023
Capacity Charge (\$/MW of Nominated Capacity/Month)	10,647	16,807	16,748	16,656
Consumption Charge (\$/kWh)	0.0226	0.0234	0.0238	0.0242
Availability Charge (\$/Month)	33,000	33,000	33,000	33,000
EFFECTIVE DATE:			JUL 1 ST	JUL 1 ST
			2022	2023
SFU Rider 1 (\$/MW of Nominated Capacity/Month)	--	--	TBD*	TBD
SFU Rider 2 (\$/MW of Nominated Capacity/Month)	--	--	TBD	TBD

* TBD – To be determined

The forecast SFU Revenue Requirements and revenue based on proposed rates and a comparison of revenue to the Revenue Requirements are presented in the following tables.

Table 26: SFU Forecast Revenue Requirements and Revenue based on Proposed Rates (Amended Evidentiary Update)²³⁴

SFU Revenue Requirements Amended Evidentiary Update (2021-05-20)	2020	2021	2022	2023
Operating Costs	81,022	673,811	696,424	710,120
Energy Costs	256,424	1,023,509	1,041,229	1,058,846
Property Taxes	0	0	0	0
Depreciation & Amortization	64,269	416,156	416,156	416,156
Interest on Debt	44,130	364,074	354,437	346,447
Return on Equity	92,223	760,843	740,704	724,005
Total Revenue Requirement	538,069	3,238,394	3,248,950	3,255,574
Total Rev. Req. excluding Energy Costs	281,645	2,214,884	2,207,721	2,196,729

Table 27: Forecast Revenue from SFU Compared to Forecast SFU Revenue Requirements²³⁵

	2020	2021	2022	2023
Capacity Charge Revenue	\$ 243,855	\$ 2,016,884	\$ 2,009,721	\$ 1,998,729
Availability Charge Revenue	\$ 75,581	\$ 396,000	\$ 396,000	\$ 396,000
Less incentive payment as per TESA	\$ 37,790	\$ 198,000	\$ 198,000	\$ 198,000
Total SFU Revenue Requirements, excluding Energy Costs	\$ 281,645	\$ 2,214,884	\$ 2,207,721	\$ 2,196,729
Consumption Charge Revenue	\$ 256,424	\$ 1,023,509	\$ 1,041,229	\$ 1,058,846
Total SFU Revenue Requirements	\$ 538,069	\$ 3,238,394	\$ 3,248,950	\$ 3,255,574

The proposed rates for SFU are estimated to result in an annual SFU bill of approximately \$3.4M per year beginning in 2021, in addition to approximately \$1.1M for September to December 2020.²³⁶

²³⁴ Exhibit B-20, BCOAPO IR 7.1.

²³⁵ Revenue derived from Exhibit B-22, p. 3, Table 3.

²³⁶ Exhibit B-1, pp. 2–3.

Positions of the Parties

Subject to the comments on Corix's methodology for calculating AFUDC which are addressed in Subsection 2.4.2, SFU confirms that the final applied-for rates for Corix's service to SFU have been determined in accordance with the cost-of-service parameters, the cost allocation and rate design principles set out in the TESA. Accordingly, SFU supports approval of the rates for Corix's service to SFU under the TESA.²³⁷

Panel Determination

The Panel finds the proposed rates are consistent with the rate design principles outlined in the approved TESA and the calculated revenue based on the forecast load and proposed rates is sufficient to recover the Revenue Requirements allocated to SFU plus the incentive payment set out in the TESA that is collected from the Availability Charge. SFU confirms the proposed rates, cost allocations and rate design are consistent with the TESA. The proposed rates are understandable to the customer and effectively yield the total revenue requirement. **Accordingly, pursuant to sections 59 to 61 of the UCA, the Panel approves the final SFU proposed rates set out in Table 25, effective October 23, 2020, January 1, 2021, January 1, 2022 and January 1, 2023. Corix is directed to file revised tariff pages reflecting the approved rate changes for endorsement by the BCUC within 30 days of the issuance of this decision.**

The Panel notes that while the BCUC approved the incentive payment included in the Availability Charge as part of the TESA, the 2017 BCDEU CPCN Decision did not specifically set out the reasons for approving an amount in excess of the Corix's Revenue Requirement. However, the 2017 BCDEU CPCN Decision also approved a capital cost risk reward sharing mechanism and stated:

The [BCUC] approves the capital cost RR sharing mechanism as outlined in the TESA. The [BCUC] finds there are a number of important features that support using such a mechanism. Firstly, the agreement is between two sophisticated parties. Each has had the opportunity to carefully examine the pros and cons of entering into such an agreement and determined that it is to their individual benefit. Secondly, the agreement directly impacts only the parties to the TESA agreement, SFU and Corix. Therefore, the provisions in the mechanism have no direct impact on UniverCity ratepayers. Thirdly, the mechanism is designed to promote the creation of efficiency and produce cost savings some of which might be beneficial to UniverCity ratepayers who could benefit from any capital expenditure savings resulting in a reduction in their part of the capital cost allocation from the CEP rate base. Collectively, the [BCUC] finds that these features justify approving the capital cost RR sharing mechanism as proposed by Corix.²³⁸

In the Panel's view, the reasons for approving this mechanism also support the incentive payment. The Availability Charge was negotiated between Corix and SFU and is designed to ensure that no other customer group will be unfavorably affected by Corix's service to SFU.

4.2.2 UniverCity

Considering the significant impact of the CEP on UniverCity's existing rate base and revenue requirements, Corix states its rate proposals utilize the existing RDDA and a levelization approach to mitigate against rate shock for

²³⁷ SFU Final Argument, p. 4.

²³⁸ 2017 BCDEU CPCN Decision, p. 38.

customers. Corix calculates that the proposed Test Period rate increases for UniverCity customers lead to a typical end-user experiencing no more than a 10 percent total annual bill increase. Based on this approach, Corix requests approval of the following rates for UniverCity:²³⁹

Table 28: Existing 2020 Rates and Final Proposed Rates for UniverCity (Amended Evidentiary Update)²⁴⁰

RATE: EFFECTIVE DATE:	PREVIOUS	PROPOSED (TEST PERIOD)			
	JAN 1 ST	SEP 1 ST	JAN 1 ST	JAN 1 ST	JAN 1 ST
	2020	2020	2021	2022	2023
Basic Charge (\$/m ² per Month)	0.5769	0.5769	1.0482	1.1164	1.1889
Variable Rate (\$/kWh)	0.0588	0.0588	Discontinued		
2020 4-month Rate Rider (\$/m ² per Month)	N/A	0.2748	Discontinued		
Variable Energy Charge (\$/kWh)	N/A	N/A	0.0301	TBD*	

* TBD – To be determined

The Basic Charge and Variable Rate for 2020 UniverCity are the existing rates approved by the BCUC for 2020. The Panel approved the 2020 4-month Rate Rider in Subsection 3.1.2. Corix's request for permanent approval of the proposed 2021 Variable Energy Charge of \$0.0301 is based on the 2021 forecast energy load of 15,298 MWh and forecast energy costs of \$461,204. Since the UniverCity Variable Energy Charge for 2022 and 2023 will be approved in the separate regulatory process as reviewed in Subsection 3.1.3, it is not necessary for the Panel to approve the Variable Energy Charge for 2022 and 2023.

The Basic Charge for 2021 to 2023 is based on the total Revenue Requirement excluding energy costs for 2021 to 2023 as presented in the table below:

Table 29: UniverCity Forecast Revenue Requirements (Amended Evidentiary Update)²⁴¹

UniverCity Revenue Requirements				
Amended Evidentiary Update (2021-05-20)	2020	2021	2022	2023
Operating Costs	244,620	594,035	621,882	653,568
Land Lease and Franchise Fees	63,146	104,780	117,367	133,503
Energy Costs	426,332	461,204	516,265	599,240
Property Taxes	0	100,805	105,132	111,998
Depreciation & Amortization	387,683	582,189	587,186	595,981
Interest on Debt	139,621	421,361	427,003	433,842
Return on Equity	291,780	880,561	892,351	906,645
Total Revenue Requirement	1,553,180	3,144,934	3,267,186	3,434,777
Total Rev. Req. excluding Energy Costs	1,126,848	2,683,730	2,750,921	2,835,537
Revenue Recoverable at Proposed Rates	1,502,355	2,063,837	2,470,822	2,992,558
Revenue Deficiency/Sufficiency	(50,825)	(1,081,097)	(796,365)	(442,220)

²³⁹ Exhibit B-1, Section 10.2.2, p. 75.

²⁴⁰ Exhibit B-15-2, p. 31, Table 34.

²⁴¹ Exhibit B-15-2, Table 28, p. 23.

The calculated revenue recoverable at proposed rates, the revenue deficiency to be added to the RDDA and a comparison to the forecast UniverCity Revenue Requirements are presented in the following table.

Table 30: UniverCity Forecast Revenue, Revenue Deficiency and Comparison to the Revenue Requirements²⁴²

	Actual 2020	Forecast 2021	Forecast 2022	Forecast 2023
Basic Charge (\$/m2 per Month)		\$ 1.0482	\$ 1.1164	\$ 1.1889
Total floor area (sq metres) - Mid-Year Additions		127,408	145,902	167,751
Number of months		12	12	12
Basic Charge Revenue		\$ 1,602,631	\$ 1,954,556	\$ 2,393,317
RDDA Revenue Deficiency	\$ 50,825	\$ 1,081,097	\$ 796,365	\$ 442,220
Total Revenue Requirements excluding Energy Costs		\$ 2,683,728	\$ 2,750,921	\$ 2,835,537
Variable Energy Rate		\$ 0.0301	n/a	n/a
Demand (MWh)		15,298		
2021 Consumption Charge Revenue/2022 and 2023 Energy Forecast		\$ 461,200	\$ 516,265	\$ 599,240
Actual 2020 Total Revenue	\$1,502,355	n/a	n/a	n/a
Total Revenue Requirements		\$ 1,553,180	\$ 3,144,928	\$ 3,267,186
			\$ 3,267,186	\$ 3,434,777

Based on the proposed rates for 2021 through to 2023 and the proposed 2020 4-month rate rider, Corix calculates that a typical UniverCity residential customer will experience total annual bill increases of 9 percent, 6.9 percent, 6 percent and 6.7 percent in 2020, 2021, 2022 and 2023 respectively.²⁴³

Corix notes that the primary driver for the increase to UniverCity's rates during the proposed Test Period is the new low-carbon CEP. It submits UniverCity's rate base experiences a material increase from the \$5.333 million at the end of 2019 to \$21.271 million at the end of 2020 primarily due to the capital costs associated with the new CEP, with a relatively immaterial residual increase being driven by the addition of new UniverCity customers in 2020.²⁴⁴

Positions of the Parties

SFU takes no position regarding the requested approvals insofar as they relate to the UniverCity customers.²⁴⁵

BCOAPPO notes that the cumulative effect of the proposed increase over the proposed Test Period is approximately 32 percent, which is many times greater than inflation. BCOAPPO submits that ratepayers face a serious challenge to the affordability of their energy.²⁴⁶

In reply, Corix reiterates that the increase is primarily attributable to the capital costs of the new low-carbon CEP and the associated operating and fuel costs for the CEP.²⁴⁷ Corix submits that it has constructed a new operating plant with different operational requirements and considering this upgrade and change in operational requirements, Corix views that the cumulative effect of the proposed increases over the 2020-2023 test period cannot be compared to the rate of inflation. Comparing operating costs against the rate of inflation would be more appropriate if the utility did not have any capital upgrades.²⁴⁸ Corix also argues that further mitigation of

²⁴² Figure from Exhibit B-15-2, p. 3, Table 2; Exhibit B-15-2, Table 28, p. 23.

²⁴³ Exhibit B-1, p. 77.

²⁴⁴ Corix Final Argument, paragraph 12, pp. 3–4.

²⁴⁵ SFU Final Argument, paragraph 12, p. 4.

²⁴⁶ BCOPAO Final Argument, p. 7.

²⁴⁷ Corix Reply Argument, paragraph 23, p. 6.

²⁴⁸ Corix Reply, pp. 6–7.

rates during the Test Period would require establishing two deferral accounts which is not practical and may cause confusion.²⁴⁹

Panel Determination

The Panel finds the proposed UniverCity rate increases reflect a reasonable balance of appropriate rate setting principles. As BCOAPO points out, the cumulative rate increases over the Test Period are significant. However, even with these increases, the resulting revenue does not effectively yield UniverCity's total Revenue Requirements. As a result, the RDDA is forecast to increase by almost \$2.4 million²⁵⁰ over the Test Period, adding to an already significant RDDA balance which Corix indicates, based on its assumptions, will not be recovered until 2031. Further, since the CEP commences operation in the Test Period there is a significant change in the energy service provided to UniverCity customers. This change in service came with a significant increase in capital cost that must ultimately be recovered in rates.

In the Panel's view, Corix's proposed rates and rate increases reflect an appropriate balance between competing considerations including:

- Achieving rate stability while avoiding rate shock considerations as referenced in the TES Guidelines;
- Avoiding undue discrimination and balancing intergenerational equity among ratepayers; and
- Setting rates high enough to contribute to the recovery of the cost of service, to minimize the increase in the RDDA and use the least deferral mechanisms possible.

Accordingly, pursuant to sections 59 to 61 of the UCA, the Panel approves the Basic Charges for UniverCity on a permanent basis, effective January 1, 2021, January 1, 2022, and January 1, 2023, as set out in Table 28. Corix is directed to file revised tariff pages reflecting the approved rate changes for endorsement by the BCUC within 30 days of the issuance of this decision.

4.3 Differences Between Interim and Permanent Rates

For UniverCity customers, Corix requests:

- Approval to apply any difference between the interim Variable Energy Charge (\$0.0293 per kilowatt-hour) and final Variable Energy Charge (\$0.0301 per kilowatt-hour) to the Energy Cost Reconciliation Account with applicable interest calculated based on Corix's weighted average cost of capital, retroactive to the effective date(s) of the interim Variable Energy Charge; and
- Approval to apply any difference between the interim Basic Charge and final Basic Charge for UniverCity to the existing Revenue Deficiency Deferral Account with applicable interest calculated based on Corix's weighted average cost of capital, retroactive to the effective date(s) of the interim Basic Charge.²⁵¹

²⁴⁹ Corix Reply, pp. 9–10.

²⁵⁰ Total additions to the RDDA as per Table 29, calculated as \$50,825+\$1,081,097+\$796,365+ \$442,220= \$2,370,507, rounded to \$2.4 million.

²⁵¹ Exhibit B-22, Attachment A, Updated Draft BCUC Order, p. 2.

For SFU, the final approved 2020 Capacity Charge for SFU is lower than the interim approved 2020 Capacity Charge approved by the BCUC and the final 2021 Capacity Charge for SFU is higher than the interim approved 2021 Capacity Charge, resulting in a net refund to SFU.

Corix proposes to refund the total difference between the interim SFU rates and final SFU rates, with applicable interest calculated based on Corix's weighted average cost of capital, through a temporary fixed charge rider over a time period not greater than 12 months. Corix explains the rate rider would be calculated by dividing the total to be repaid by the number of months over which the rate rider is applicable. Corix estimates a Capacity Charge refund of \$131,002 for 2020, before the applicable interest. This excludes any recovery amount associated with the difference between the 2021 interim and final Capacity Charge. Corix notes the final amount to be refunded/recovered is subject to the BCUC's determination on the final rates.²⁵²

Positions of the Parties

SFU states that it does not believe it is necessary to refund the difference between interim and permanent rates over time through a temporary rate rider. Rather, SFU submits that the amount should be refunded through a one-time credit to SFU's monthly bill issued in the month following the month in which the BCUC issues its decision on the Application.

BCOAPD does not comment on the treatment of differences between interim and permanent rates.²⁵³

In reply, Corix submits it is reasonable to refund or recover such over a period of time similar to the length of time over which the interim rates were in effect. To illustrate, Corix explains if interim rates had been in effect for 12 months and final approved rates were higher than interim rates, it would be unreasonable for Corix to request that customers pay the difference through a one-time payment in the month immediately following the decision.²⁵⁴

Panel Determination

Corix is directed to refund the net difference between SFU interim and permanent rates, plus applicable interest at the weighted average cost of capital, within one billing period after the issuance of this Decision. The Panel agrees with SFU and considers there is no reasonable justification for issuing the refund over time.

The Panel approves Corix's request to apply any difference between the interim UniverCity Variable Energy Charge (\$0.0293 per kilowatt-hour) and final UniverCity Variable Energy Charge (\$0.0301 per kilowatt-hour) to the ECRA with applicable interest calculated based on Corix's weighted average cost of capital, retroactive to the effective date of the interim UniverCity Variable Energy Charge. Application of the difference in Variable Energy Charge to the ECRA is an efficient approach and acceptable in the circumstances. The Panel notes there is no difference between the approved interim and final UniverCity Basic Charge.

5.0 Other Issues

In this Section, the Panel reviews other issues identified in the proceeding that do not have a direct impact on the Revenue Requirements and rates including the SFU/Corix Risk Sharing Agreement, the SFU replacement and

²⁵² Exhibit B-22, page 3.

²⁵³ SFU Final Argument, p. 10.

²⁵⁴ Corix Reply Argument, p. 5.

the renewal capital default debt rate specified in the TESA, the thermal energy delivery parameters and performance testing requirements set out in Schedule 4 of TESA and Corix's confidentiality request.

5.1 SFU/Corix Risk Sharing Agreement

As noted in Section 2.4.1, biomass fuel costs are allocated to SFU and UniverCity based on their respective share of biomass energy produced by the BMDEU, subject to the Risk Sharing Agreement between Corix and SFU. The Risk Sharing Agreement allows for a portion of the SFU biomass fuel costs to be fixed at a specified rate (\$/BDT), while the remaining volume needed to satisfy SFU's energy demand are sourced as variable costs.²⁵⁵ The terms of the Risk Sharing Agreement are confidential.

Corix explains that the Risk Sharing Agreement between Corix and SFU was reached in lieu of the 10-year fuel supply contract that was one of the conditions precedent of the Infrastructure Agreement.²⁵⁶ The Risk Sharing Agreement arose because Corix was unable to secure a biomass supply contract that conformed to the minimum contractual parameters outlined as a condition precedent in the Infrastructure Agreement between Corix and SFU. Corix filed the Infrastructure Agreement with the 2017 BMDEU CPCN application. In the 2017 BMDEU CPCN Decision, the BCUC stated that "there is no need to approve the SFU Infrastructure Agreement."²⁵⁷

Corix is not seeking BCUC approval of the Risk Sharing Agreement.²⁵⁸ In addition, Corix submits that the Risk Sharing Agreement does not impact the cost allocation of biomass costs from Corix to UniverCity customers and does not disadvantage UniverCity customers. For these reasons, Corix submits that determinations on the Risk Sharing Agreement are not warranted.²⁵⁹

Positions of the Parties

SFU states that the Risk Sharing Agreement sets out a risk sharing mechanism between Corix and SFU relating to the cost of biomass fuel for SFU for the duration of the Risk Sharing Agreement. The Risk Sharing Agreement is applicable only to SFU and does not impact the revenue requirement or rates for the UniverCity community. SFU submits that any biomass supply costs incurred by Corix that are not recovered from SFU as a result of the Risk Sharing Agreement will be borne by Corix's shareholders.²⁶⁰ SFU agrees with Corix that BCUC approval of the Risk Sharing Agreement is not required.²⁶¹

BCOAP0 did not comment on the Risk Sharing Agreement in its Final Argument.

Panel Discussion

The Panel agrees there is no need to approve the Risk Sharing Agreement between Corix and SFU. The Risk Sharing Agreement does not impact the cost allocation of biomass costs from Corix to UniverCity customers or

²⁵⁵ Exhibit B-1, p. 50.

²⁵⁶ Exhibit B-12-1, BCUC IR 25.1.

²⁵⁷ Corix Final Argument, p. 11.

²⁵⁸ Exhibit B-19, BCUC confidential IR 5.1.1

²⁵⁹ Corix Final Argument, p. 11.

²⁶⁰ SFU Final Argument, pp. 8–9.

²⁶¹ SFU Final Argument, p. 9.

impact UniverCity customers. If any of the biomass supply costs allocated to SFU are not recovered by Corix as a result of the Risk Sharing Agreement this risk will be borne by Corix's shareholder.

5.2 SFU Replacement and Renewal Capital Default Debt Rate

Corix states it currently does not have sufficient equipment maintenance data to create a reasonable replacement and renewal and accordingly it has not forecast any replacement and renewal in the Revenue Requirements. Assessing the operations and maintenance requirements for the equipment over the next several years will give Corix the opportunity to develop a structured replacement and renewal capital plan based on equipment specifications, original equipment manufacturer's maintenance requirements and actual operational data and observations in the field.²⁶² Corix anticipates that between year 5 and 10 of consistent operations will provide enough understanding and operational experience to be able to provide a long term forecast of replacement and renewal capital.²⁶³

Corix has not yet determined how it will establish the default debt rate for any incremental capital expenditures associated with a replacement and renewal capital plan.²⁶⁴ It notes the TESA sets a fixed default debt funding rate for the other capital expenditures, and any replacement and renewal capital expenditures require the determination of the appropriate debt funding cost. Corix submits that there are a number of factors to consider and several options available in establishing the default debt rate, there is uncertainty in the amount and timing of future replacement and renewal capital expenditures making it challenging for Corix to determine a fair and reasonable future debt cost.²⁶⁵

Corix submits that if substantial replacement and renewal Replacement and Renewal capital expenditures are required before a capital plan is developed, then an appropriate debt rate would be required for these expenditures. The default debt rate will be discussed with SFU, following which, Corix notes, it would need to apply to the BCUC to set the default debt rate. The BCUC would then issue a decision on an appropriate rate.²⁶⁶

Positions of the Parties

BCOAPO expresses concern that because Corix has not developed a replacement and renewal maintenance cost and these capital costs may put further pressure on future rates. Additionally, BCOAPO questions how the absence of such a plan is impacting the O&M forecast for the proposed Test Period.²⁶⁷

SFU notes that while this issue does not affect the applied-for rates in this proceeding, it would be appropriate for Corix to address this matter in its next rate application for the test period beyond 2023, and make a specific proposal regarding how the default debt rate would be established for any incremental capital associated with future replacement and renewal capital expenditures.²⁶⁸

²⁶² Exhibit B-1, Section 6.1, p. 37.

²⁶³ Exhibit B-12-1, BCUC IR 15.1.

²⁶⁴ Exhibit B-11, SFU IR 2.0 series.

²⁶⁵ Exhibit B-21, SFU IR 3(a).

²⁶⁶ Exhibit B-21, SFU IR 3(b).

²⁶⁷ BCOAPO Final Argument, p. 13.

²⁶⁸ SFU Final Argument, paragraph 19, p. 7.

In reply, Corix repeats its perspective for excluding the replacement and renewal capital plan at this time, and submits that it intends to assess the operations and maintenance requirements for the equipment over the next several years in order to develop a structured and robust capital plan.²⁶⁹

Panel Determination

The Panel acknowledges that the revenue requirements do not include a forecast of a replacement and renewal capital expenditures and accepts that future operational experience is required to inform such a plan. **However, to assist in the future review of these expenditures, the Panel directs Corix to include in its next revenue requirements application, an update on the status of (i) the operational experience and timing of the Replacement and Renewal capital expenditures forecast; and (ii) the methodology for setting the “default debt” rate.**

5.3 CEP Performance Testing

The CEP thermal energy provided by Corix to SFU will be in accordance with the thermal energy delivery parameters and performance testing requirements set out in Schedule 4 of TESA.²⁷⁰ Schedule 4 states that performance testing needs to be completed within 12 months from the October 23, 2020 service commencement date.

Section 12.1 (d) of the TESA states that Corix could be in default of the TESA if the CEP fails to pass the performance testing within the time specified and Corix fails or is unable to cure such failure within one year of the date SFU receives the performance testing report. Corix explains who will bear the risks of any project costs incurred to correct the failure in a scenario where the CEP fails to pass the performance testing set out in Schedule 4.

If the failure was determined to be a matter that should have been within the control of the utility then Corix’s shareholders would bear the risk but if it was determined that the extent of the failure was a cause that could not be reasonable foreseen by Corix then it would be Corix’s expectation that it would be allowed to recover such costs fairly. If the technology supplier is not able to demonstrate that the system is meeting the performance under the design specifications, the cost to remedy will be borne by the technology supplier.²⁷¹

Corix states that performance testing is expected to be completed in the fall before October 23, 2021, which represents the one-year anniversary of the service commencement to SFU.²⁷² Corix submits that it is not opposed to providing relevant and useful information to the BCUC. However, Corix asserts that it would “need to understand the purpose of the BCUC’s review of the final engineering report on performance testing in order to opine on whether Corix is amenable to providing a copy of this document.”²⁷³

The interveners did not provide a position on this topic.

²⁶⁹ Corix Reply Argument, paragraph 55, p. 12.

²⁷⁰ Exhibit B-1, Appendix D, Section 5.1.

²⁷¹ Exhibit B-12-1, BCUC IR 11.6.

²⁷² Exhibit B-18, BCUC IR 43.1.

²⁷³ Exhibit B-18, BCUC IR 43.2.

Panel Determination

The Panel finds it is not necessary for Corix to file the final engineering report on performance testing, unless otherwise directed by the BCUC. In the Panel's view, Corix can inform the BCUC of any performance issues identified that may impact the efficiency of the CEP and cause energy cost variances issues in the 2022 applications for setting the UniverCity Variable Energy Charge and the SFU Fuel Cost Deferral Account rate rider.

5.4 Confidentiality Request

Corix submits it filed the Application with confidential materials including a Financial Model (Exhibit A of the Application) and a redacted version of the Biomass Supply Contract (Exhibit B of the Application). Corix requests confidentiality of these materials because it believes the release, use, or distribution of the Financial Model or Biomass Supply Contract to any organization outside of the BCUC could subject Corix to substantial harm and loss of competitive advantage resulting in rates or agreements that are unfavorable to existing and/or future customers.²⁷⁴

On November 27, 2020, SFU sent BCUC a signed Confidentiality Declaration and Undertaking Form to release all confidential documents related to the application. Corix stated that it has no objection to this request.²⁷⁵

Corix submitted an Updated Amended Evidentiary Update Model (2021-05-28)²⁷⁶ stating the information contained in this model is strictly confidential and privileged and has been submitted electronically exclusively for use by the BCUC and its representatives/designees and SFU in connection with the evaluation of this Application. Further, Corix submits that its Financial Model includes unique formulas and business insights.²⁷⁷ Corix requests that the BCUC keep the accompanying Financial Model confidential due to its commercially sensitive nature.²⁷⁸

As part of the evidentiary record, Corix also filed several exhibits on a confidential basis for similar commercially sensitivity reasons.²⁷⁹

No parties objected to Corix's request for confidentiality.

Panel Determination

The Panel determines that confidential information submitted by Corix in this proceeding will be kept confidential subject to the following. The Panel agrees with Corix that the confidential materials are commercially sensitive and notes that interveners were able to access these materials by signing a Confidentiality Declaration and Undertaking Form. With regards to the Financial Model, the Panel finds that the model is commercially sensitive to the extent that public release of certain parts of the Biomass Supply Contract including pricing information and the formulas embedded in the model would cause harm to Corix and its ratepayers. However, the Panel finds the information contained in the tables above in this decision , which has

²⁷⁴ Exhibit B-1, Section 1.3, p. 7.

²⁷⁵ Exhibit C1-3, p. 1.

²⁷⁶ Filed with Exhibit B-22.

²⁷⁷ Exhibit B-4, p. 2

²⁷⁸ Exhibit B-22, p. 3.

²⁷⁹ Exhibit B-12, B-13-1, B-15-1, B-15-3, B-15-4, and B-19.

been disclosed by Corix in the Application, in the evidentiary updates, or in Corix's responses to non-confidential IRs referencing the information contained in Corix's Financial Model is not confidential.

DATED at the City of Vancouver, in the Province of British Columbia, this 24th day of September 2021.

Original signed by:

K. A. Keilty
Panel Chair / Commissioner

Original signed by:

C. M. Brewer
Commissioner

Original signed by:

B. A. Magnan
Commissioner



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**ORDER NUMBER
G-279-21**

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

and

Corix Multi-Utility Services Inc.
Burnaby Mountain District Energy Utility
2020-2023 Revenue Requirements and Rates Application

BEFORE:

K. A. Keilty, Panel Chair
C. M. Brewer, Commissioner
B. A. Magnan, Commissioner

on September 24, 2021

ORDER

WHEREAS:

- A. On July 30, 2020, Corix Multi-Utility Services Inc. (Corix) submitted an application seeking British Columbia Utilities Commission (BCUC) approval of its Burnaby Mountain District Energy Utility (BMDEU) revenue requirements and rates from 2020 through to 2023, effective September 1, 2020 (Application);
- B. By Orders G-220-20, G-331-20, G-348-20, G-21-21, and G-103-21, the BCUC established the regulatory timetable for the review of the Application, which included intervener registration, a virtual workshop, two rounds of BCUC and intervener information requests (IRs), evidentiary update submissions by Corix, and written arguments;
- C. The following parties registered as interveners: Simon Fraser University (SFU), Strata Plan EPS-3822 Centre Block Building, Strata Plan EPS-5447 The Peak and British Columbia Old Age Pensioners' Organization et al. (BCOAPO);
- D. By Order G-220-20 dated August 19, 2020, the BCUC approved certain rates as proposed by Corix on an interim and refundable basis, effective September 1, 2020, for SFU and UniverCity customers;
- E. By Order G-318-20 dated December 7, 2020, after the review of Corix's partial response to BCUC IR No.1 filed November 30, 2020, the BCUC approved Corix's proposal of interim rates for UniverCity and SFU on a refundable basis effective January 1, 2021 as outlined in BCUC IR series 1.0 and 2.0 (Exhibit B-6); and.

F. The BCUC has considered the Application, the evidentiary update and the submissions filed in this proceeding and makes the following determinations.

NOW THEREFORE pursuant to sections 58 to 61 of the *Utilities Commission Act*, the BCUC orders as follows:

1. Corix is approved the following for the UniverCity customer group:
 - a. Establish a rate structure to consist of a Variable Energy Charge to flow-through and recover all energy costs, with the balance of the Revenue Requirement excluding energy costs and subject to the amounts added to the Revenue Deficiency Deferral Account (RDDA) under the levelized rate structure to be recovered through the existing Basic Charge.
 - b. Establish the Energy Cost Reconciliation Account (ECRA) on a permanent basis, to capture actual energy costs and revenues from the Variable Energy Charge.
 - c. Use an annual Variable Energy Charge Rate Setting Mechanism as set out in the Application.
 - d. Use a 12-month amortization period for balances in the ECRA, unless otherwise determined by the BCUC.
 - e. Permanent approval of the Basic Charges for UniverCity effective January 1, 2021, January 1, 2022, and January 1, 2023 and the 4-month rate rider of \$0.2748/m² for the period of September 1, 2020 and December 31, 2020, as follows:

Effective Date	Sep 1, 2020	Jan 1, 2021	Jan 1, 2022	Jan 1, 2023
Basic Charge (\$/m² per Month)	No change	1.0482	1.1164	1.1889
2020 4-month Rate Rider (\$/m² per month)	0.2748	Not applicable (N/A)	N/A	N/A
Variable Energy Charge (\$/kWh)	N/A	\$0.0301	N/A	N/A

- f. Corix is directed to apply any difference between the interim UniverCity Variance Energy Charge of \$0.0293/kWh effective January 1, 2021, as approved by Order G-318-20, and the final UniverCity Variable Energy Charge of \$0.0301/kWh to the ECRA with applicable interest calculated based on Corix's weighted average cost of capital, retroactive to the effective date of the interim UniverCity Variable Energy Charge.
2. Corix is approved the following for the SFU customer group:

- a. For the years 2022 and 2023, Corix is to use the proposed structure and regulatory process as set out in Section 3.2.1 of the Decision that has been issued concurrently with this Order, for the SFU Fuel Cost Deferral Account Rate Rider and must use a 12-month amortization period for any balance in the deferral account.
- b. For the years 2022 and 2023, Corix is to use the proposed structure and regulatory process as set out in Section 3.2.2 of the Decision that has been issued concurrently with this Order, for the Property Tax Variance Account Rate Rider and must use a 12 month amortization period for any balance in the deferral account. t
- c. A Capacity Charge, Consumption Charge, and Availability Charge are effective October 23, 2020, January 1, 2021, January 1, 2022, and January 1, 2023 as follows:

Effective Date	Oct 23, 2020	Jan 1, 2021	Jan 1, 2022	Jan 1, 2023
Capacity Charge (\$/MW of Nominated Capacity/Month)	10,647	16,807	16,748	16,656
Consumption Charge (\$/kWh)	0.0226	0.0234	0.0238	0.0242
Availability Charge (\$/Month)	33,000	33,000	33,000	33,000

3. Corix is directed to file its BMDEU Annual Report to the BCUC to include the 2021 year-end balance for the Fuel Cost Deferral Account by no later than April 30, 2022. Corix is directed to file a compliance filing with the BCUC by no later than June 1, 2022, to include the following:
 - a. Information on the 2021 year-end balance of the deferral account, consistent with the information presented in the annual report;
 - b. A request for an approval of the associated rate riders effective July 1, 2022, until June 30, 2023; and
 - c. All supporting information.
4. Corix is directed to file its BMDEU Annual Report to the BCUC by no later than April 30, 2022, which will include the 2021 year-end balance for the Property Tax Variance Account. Corix is directed to file a compliance filing with the BCUC by no later than June 1, 2022, to include the following:
 - a. Information on the 2021 year-end balance of the deferral account, consistent with the information presented in the annual report;
 - b. A request for an approval of the associated rate riders effective July 1, 2022 until June 30, 2023; and
 - c. All relevant supporting information.

5. Corix is directed to refund the net difference between the SFU interim rates as established by Orders G-220-20 and G-318-20 and the approved permanent rates, plus applicable interest at the weighted average cost of capital, to SFU within one billing period after the issuance of this Order.
6. Corix's tariff document for UniverCity in Appendix B of the Evidentiary Update and the tariff supplement for SFU included in Appendix D of the Application is accepted.
7. Corix is directed to file updated rate schedules for UniverCity and updated rate schedules for SFU consistent with this final Order and Decision within 30-days of the date on this final Order.
8. The confidential information submitted by Corix in the proceeding will be kept confidential in accordance with the decision that has been issued concurrently with this Order.
9. Corix is directed to comply with the terms and directives in the decision that have been issued concurrently with this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this 24th day of September 2021.

BY ORDER

Original signed by:

K. A. Keilty
Commissioner

List of Acronyms

Acronym	Description
2017 BMDEU CPCN Decision	BCUC Decision on Corix Multi-Utility Services Inc. Application for a Certificate of Public Convenience and Necessity for the Burnaby Mountain District Energy Utility dated September 5, 2017
AFUDC	Allowance for Funds Used During Construction
Application	Corix Multi-Utility Services Inc. Burnaby Mountain District Energy Utility 2020 to 2023 Revenue Requirement and Rates Application
BC Hydro	British Columbia Hydro and Power Authority
BCOAPO	British Columbia Old Age Pensioners' Organization et al.
BCUC	British Columbia Utilities Commission
BDT	Bone Dry Tonnes
BMDEU	Burnaby Mountain District Energy Utility
CAM	Cost Allocation Methodology
Capacity Charge	(\$/MW of Nominated Capacity/Month
CEC	Commercial Energy Consumers Association of British Columbia
CEP	Central Energy Plant
CIAC	Contributions in Aid of Construction
CII	Corix Infrastructure Inc.
Cloverdale Fuel	Cloverdale Fuel Ltd.
Corix	Corix Multi-Utility Services Inc.
COS	Cost of Service
CPCN	Certificate of Public Convenience and Necessity
CUI	Corix Utilities Inc.
ECRA	Energy Cost Reconciliation Account
EUI	Energy Use Intensity
EUI	Energy Use Intensities
FEI	FortisBC Energy Inc.
FTE	Full Time Equivalents
GCOC	Generic Cost of Capital
IR	Information Request

O&M	Operations and maintenance
PLD	Peak Load Demand
PPE	Property, Plant and Equipment
RDDA	Revenue Deficiency Deferral Account
Revenue Requirement	BMDEU's forecast cost of service or revenue requirement
ROE	Return on Equity
SFU	Simon Fraser University
Strata-EPS-3822	Strata Plan EPS-3822 Centre Block Building
Strata-EPS-5447	Strata Plan EPS-5447 The Peak
TES Guidelines	BCUC's Thermal Energy System Framework Guidelines
TESA	Thermal Energy Services Agreement
Test Period	September 1, 2020 through to December 31, 2023 test period
UCA	Utilities Commission Act
UniverCity NUS	UniverCity Neighborhood Utility Service
Variable Charge	Variable Rate per kilowatt-hour

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

and

Corix Multi-Utility Services Inc.
Burnaby Mountain District Energy Utility 2020-2023 Revenue Requirement and Rate Application

EXHIBIT LIST

Exhibit No.	Description
<i>COMMISSION DOCUMENTS</i>	
A-1	Letter dated August 12, 2020 – Appointment the Panel for the review of the Corix Multi-Utility Services Inc. - Burnaby Mountain District Energy Utility 2020-2023 Revenue Requirement and Rates Application dated July 30, 2020
A-2	Letter dated August 19, 2020 – BCUC Order G-220-20 establishing a Regulatory Timetable to review to Application
A-3	Letter dated September 22, 2020 – BCUC request Corix response regarding confidentiality
A-4	Letter dated September 22, 2020 – BCUC providing information regarding the Corix-led virtual workshop
A-5	Letter dated November 3, 2020 – BCUC Information Request No. 1 to Corix
A-6	CONFIDENTIAL - Letter dated November 3, 2020 – BCUC Confidential Information Request No. 1 to Corix
A-7	Letter dated December 3, 2020 – BCUC request for comments regarding confidentiality
A-8	Letter dated December 7, 2020 – BCUC Order G-318-20 approving interim rates
A-9	Letter dated December 15, 2020 – BCUC Order G-331-20 amending the regulatory timetable
A-10	Letter dated December 23, 2020 – BCUC response to Corix’s extension request on response submissions for BCUC and intervener IRs No. 1

- A-11 Letter dated December 23, 2020 – BCUC Order G-348-20 amending the regulatory timetable
- A-12 Letter dated January 20, 2021 – BCUC Order G-21-21 amending the regulatory timetable
- A-13 Letter dated April 6, 2021 – BCUC Order G-103-21 establishing a further regulatory timetable
- A-14 Letter dated April 22, 2021 – BCUC Information Request No. 2 to Corix
- A-15 **CONFIDENTIAL** - Letter dated April 22, 2021 – BCUC Confidential Information Request No. 2 to Corix
- A-16 Letter dated June 9, 2021 – BCUC request for SFU submission be included in its final argument
- A-17 Letter dated June 16, 2021 – BCUC response to BCOAPO extension request

APPLICANT DOCUMENTS

- B-1 **Corix Multi-Utility Services Inc. (Corix)** - Burnaby Mountain District Energy Utility (BMDEU) 2020-2023 Revenue Requirement and Rates Application dated July 30, 2020 - Redacted
- B-1-1 **CONFIDENTIAL** – Corix BMDEU 2020-2023 Revenue Requirement and Rates Application dated July 30, 2020 – confidential version
- B-2 Letter dated August 27, 2020 – Corix submitting confirmation of notice of application
- B-3 Letter dated October 7, 2020 – Corix providing information regarding the Corix virtual workshop
- B-4 Letter dated October 13, 2020 – Corix submitting response to BCUC on confidentiality
- B-5 Letter dated October 13, 2020 – Corix submitting workshop presentation
- B-6 Letter dated November 30, 2020 – Corix submitting response to BCUC Information Request No. 1 Section A
- B-7 Letter date December 7, 2020 – Corix submitting response to SFU request for confidential documents
- B-8 Letter date December 11, 2020 – Corix Submitting Extension Request to File Information Requests Responses

- B-9 Letter date December 11, 2020 – Corix clarification to response to SFU’s request for access to confidential documents
- B-10 Letter date January 7, 2021 – Corix Submitting Responses to BCOAPO Information Request No. 1
- B-11 Letter date January 7, 2021 – Corix Submitting Responses to SFU Information Request No. 1
- B-12 **CONFIDENTIAL** - Letter date January 7, 2021 – Corix Submitting Responses to BCUC Confidential Information Request No. 1
- B-12-1 Letter dated January 8, 2021 – Corix Submitting Responses to BCUC Information Request No. 1
- B-13 Letter dated January 13, 2021 – Corix and BMDEU Submitting Letter Agreement
- B-13-1 **CONFIDENTIAL** - Letter dated January 13, 2021 – Corix and BMDEU Submitting confidential Letter Agreement
- B-14 Letter dated January 15, 2021 – Corix request for extension to file evidentiary update
- B-15 Letter dated March 19, 2021 – Corix Submitting Evidentiary Update
- B-15-1 **CONFIDENTIAL** – Letter dated March 19, 2021 – Corix Submitting Financial Model for Evidentiary Update – Appendix A
- B-15-2 Letter dated May 20, 2021 – Corix Submitting Amended Evidentiary Update
- B-15-3 **CONFIDENTIAL** – Letter dated May 20, 2021 – Corix Submitting Confidential Financial Model for Evidentiary Update Model
- B-15-4 **CONFIDENTIAL** – Letter dated May 28, 2021 – Corix Submitting Corrected Confidential Financial Model for Evidentiary Update Model
- B-16 Letter dated March 30, 2021 – Corix submitting reply submission on Further Process
- B-17 Letter dated May 20, 2021 – Corix submitting extension request to file Information Request No. 2
- B-18 Letter dated May 20, 2021 – Corix submitting response to BCUC Information Request No. 2
- B-19 **CONFIDENTIAL** - Letter dated May 20, 2021 – Corix submitting response to BCUC Confidential Information Request No. 2

- B-20 Letter dated May 20, 2021 – Corix submitting response to BCOAPO Information Request No. 2
- B-21 Letter dated May 20, 2021 – Corix submitting response to SFU Information Request No. 2
- B-22 Letter dated May 30, 2021 – Corix submitting correction to response to SFU Information Request No. 2

INTERVENER DOCUMENTS

- C1-1 **SIMON FRASER UNIVERSITY (SFU)** - Letter dated September 08, 2020 Request to Intervene by Joyce Chong
- C1-2 Letter dated November 10, 2020 – SFU Submitting Information Request No. 1 to Corix
- C1-3 Letter dated November 27, 2020 – SFU Submitting Confidentiality Undertakings for Joyce Chong, Robin Sirett and Trent Berry
- C1-4 Letter dated March 25, 2021 – SFU Submitting support of proposed regulatory review process
- C1-5 Letter dated April 29, 2021 – SFU Submitting Information Request No. 2 to Corix
- C2-1 **STRATA PLAN EPS-3822 CENTRE BLOCK BUILDING (STRATA-EPS-3822)** - Letter dated September 14, 2020 Request to Intervene by Jerry Liu
- C3-1 **STRATA PLAN EPS5447 - THE PEAK (STRATA-EPS-5447)** - Letter dated September 14, 2020 Request to Intervene by James Payette
- C4-1 **BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION ET AL. (BCOAPO)** - Letter dated September 17, 2020 Request to Intervene by Leigha Worth & Irina Mis
- C4-2 Letter dated November 10, 2020 – BCOAPO Submitting Information Request No. 1 to Corix
- C4-3 Letter dated March 25, 2021 – BCOAPO submissions on further process
- C4-4 Letter dated April 29, 2021 – BCOAPO Submitting Information Request No. 2 to Corix