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September 13, 2024

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Patrick Wruck:

Re: FortisBC Energy Inc. (FEI) and FortisBC Inc. (FBC) (collectively FortisBC)
Application for Approval of a Rate Setting Framework for 2025 through 2027 (Application)
Updated Application to include Errata to the Application dated September 6, 2024

On April 8, 2024, FortisBC filed the Application referenced above. While responding to Information Requests (IR) No. 1, FortisBC identified corrections required to the Application. On September 9, 2024, FortisBC filed its responses to IR1 concurrent with an Errata to the Application.

On September 13, 2024, FortisBC received a letter from the BC Sustainable Energy Association (BCSEA)[1] suggesting that consideration be given to filing revised versions of filed documents that are subject to errata. FortisBC appreciates BCSEA's suggestion and has accordingly attached a version of the Application (excluding Appendices) updated to include the Errata filed on September 6, 2024 for the record.

If further information is required, please contact the undersigned.

Sincerely,

on behalf of FORTISBC

Original signed:

Sarah Walsh

Attachments

cc (email only): Registered Interveners

---

1 Exhibit C1-3.

Sarah Walsh
Director, Regulatory Affairs

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April 8, 2024

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Patrick Wruck:

Re: FortisBC Energy Inc. (FEI) and FortisBC Inc. (FBC) (collectively FortisBC)
Application for Approval of a Rate Setting Framework for 2025 through 2027

Enclosed please find FortisBC's Application for Approval of a Rate Setting Framework for the years 2025 through 2027.

If further information is required, please contact the undersigned.

Sincerely,

on behalf of FORTISBC

Original signed:

Sarah Walsh

Attachments

cc (email only): Registered Interveners in the FEI and FBC 2020-2024 Multi-Year Rate Plan Proceeding; the Pre-Application Rate Setting Framework Workshop Participants and Stakeholders; and the Annual Reviews for 2024 Rates proceedings.

FORTISBC ENERGY INC.
AND
FORTISBC INC.

Application for Approval of a Rate Setting Framework for 2025 through 2027

April 8, 2024

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FortisBC Energy Inc. and FortisBC Inc.
Application for Approval of a Rate Setting Framework for 2025 through 2027

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OVERVIEW

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A: OVERVIEW

1. EXECUTIVE SUMMARY

1.1 APPLICATION AND REGULATORY PROCESS

FortisBC Energy Inc. (FEI) and FortisBC Inc. (FBC) (together, FortisBC, the Companies or the Utilities) each seek approval from the British Columbia Utilities Commission (BCUC) of a rate setting framework (Rate Framework or Framework) for the years 2025 through 2027 (Application). More specifically, FortisBC is seeking approval for a Rate Framework that includes, amongst other items, an indexed approach to FEI's and FBC's Operations and Maintenance (O&M) expense and FEI's Growth capital, a forecast cost of service approach to the remainder of FEI's Regular capital and all of FBC's Regular capital, Service Quality Indicators (SQIs) for FEI and FBC, and a refreshed innovation fund for FEI. FortisBC is also seeking approval of deferral accounts, updated depreciation rates and other supporting studies, and other approvals for the term of the Rate Framework. The approvals sought in the Application are set out in detail in Section A2, and draft forms of the final Orders sought are included in Appendix E2.

The Rate Framework builds on the key elements of FEI's and FBC's current multi-year ratemaking plan (Current MRP), while making changes to respond to the energy transition, stakeholder feedback, and other changes in FortisBC's operating environment. Reflecting the nature and scope of the Application and in recognition of the BCUC's desire to improve regulatory timetables, the Companies believe that this Application can be addressed efficiently and effectively by way of a written public hearing process. FortisBC has proposed a regulatory timetable that accounts for the potential for intervener evidence. FortisBC's proposed regulatory process is set out in Section A3 and a draft procedural order is included in Appendix E1.

1.2 RATE SETTING FRAMEWORK CONSIDERATIONS

Section B of this Application provides a review of the key considerations in FortisBC's proposals for its Rate Framework for the coming three years.

The Current MPR has performed well in a rapidly evolving external environment, including unprecedented pressure on rates for both gas and electric operations, driven by factors that are external to FortisBC's historical operations.

Key influences in the operating environment that are becoming increasingly predominant are:

- Policy direction and mandate from all levels of government towards decarbonization;
- Challenges related to energy affordability; and
- Addressing physical and cyber security, climate adaptation, and the ongoing need to invest in FortisBC's energy systems.

FortisBC continues to evolve its rate setting frameworks in response to the rapidly evolving operating environment, which has highlighted the critical interrelationships between the gas and electric systems and the need to provide dependable service to customers during times of peak demand, whether driven by load growth or by shifts in energy use between systems, or between times of the year, week, day, or hour. A key focus of this Application is on proposing flexible rate setting mechanisms that recognize the uncertainty inherent in the energy transition and that manage its impacts on the provision of affordable, reliable, and resilient service to customers in the face of heightened concern around the impacts of climate change, as well as physical and cyber security risks on BC's energy systems.

With this context, FortisBC has proposed a Rate Framework that includes:

1. A term that provides incentive to perform and the capacity to focus on key issues, while acknowledging the current level of uncertainty in the operating environment;
2. Sufficient funding to address emerging requirements and challenges;
3. Flexibility to adapt to the energy transition to manage its costs and impacts; and
4. An efficient annual rate-setting process that allows the Companies to focus on responding to the energy transition operationally and through key regulatory filings focused on the energy transition.

Overall, FortisBC's Rate Framework represents a continued evolution of its approach to rate setting in the midst of a challenging external environment.

1.3 *PROPOSED RATE SETTING FRAMEWORK*

Section C of the Application sets out the details of FortisBC's Rate Framework proposals. To address the energy transition and other influences in FortisBC's operating environment, and in consideration of the existing flexibility and features of its Current MRP and stakeholder feedback received, FortisBC has proposed:

- A shorter (three year) term for its Rate Framework.
- Continuation of the I-Factor, but with the labour and non-labour weightings fixed for the three-year term.
- Returning O&M savings to customers and a continuation of FortisBC's cost control focus through prioritization of spending and a unit cost approach to O&M and FEI growth capital, while proposing incremental O&M funding for key initiatives.
- Providing an opportunity for a detailed review of capital forecasts, base O&M, and productivity factors in this proceeding.
- Maintaining flow-through treatment for key elements such as Clean Growth Initiatives.
- Continued funding for FEI's Clean Growth Innovation Fund.

- Annual reporting on energy transition informational indicators for FEI.
- Continuation of the exogenous factor treatment, the 50:50 earnings sharing mechanism, and the financial off-ramp provisions.
- Continuation of the Annual Review process, providing an opportunity for discussion and review of the Companies' revenue requirements.

1.3.1 Components of the Rate Framework

The Rate Framework will be used to determine natural gas delivery rates and electricity rates over the 2025 to 2027 period. The table below summarizes the Rate Framework components. Most elements of the Rate Framework are identical for the two Companies.

Table A1-1: Summary of 2025-2027 Rate Framework

Item	2025-2027 Rate Framework	Section(s)
Term	A three-year term from 2025 to 2027, with the potential to extend the Rate Framework beyond 2027.	C1.2
Inflation Index (I-Factor)	A weighted average of AWE:BC for labour costs and CPI:BC for other costs will be used to determine the I-Index. FortisBC proposes to return to a fixed labour/non-labour weighting for the term of the Rate Framework.	C1.3
Productivity Factor (X-Factor)	***FEI***: An X-Factor of 0.38 percent, consisting of 0.28 percent industry O&M partial factor productivity (PFP) and 0.10 percent stretch factor for FEI's O&M and Growth capital indexing formulas. ***FBC:*** An X-Factor of 0.20 percent, consisting of 0.20 percent industry PFP and zero percent stretch factor for FBC's O&M indexing formula.	C1.4
Growth Factor	Continue with annual forecast of customer growth for FEI's and FBC's index-based O&M and gross customer additions (GCA) for FEI's Growth capital, both with a true-up to actual when available. In addition, FortisBC is proposing to eliminate the 0.75 discount factor currently applied to the growth factor for the O&M formula.	C1.5
Controllable Expenses – O&M	Continue with an indexed (I – X) unit cost approach for O&M. A 2024 Base O&M is established. O&M will not be rebased during the term of the Rate Framework but will be subject to true-up for actual customers.	C2
Controllable Expenses – Capital	***FEI***: Continue with an indexed (I – X) unit cost approach for Growth capital. The Growth capital formula is tied to the forecast GCA with the base unit cost developed using a regression of three-year actuals and projected results. Growth capital will not be rebased during the term of the Rate Framework but will be subject to true-up for actual GCA. Three-year forecast of Regular Sustainment and Other capital. ***FBC:*** Continue with a forecast of Regular Growth, Sustainment and Other capital expenditures for the term.	C3
Forecast O&M and Capital	Continue with specific O&M and capital items being forecast each year in the Annual Review with variances captured in the Flow-through deferral account or other deferral accounts.	C2 and C3

Item	2025-2027 Rate Framework	Section(s)
Incremental Capital	Continue with annual forecasting of incremental capital approved through CPCNs, OICs, or other Major Project proceedings.	C3
Forecast Revenues and Margins	Continue with annual forecast of revenues. For FEI, variances in revenue will continue to flow to either the RSAM deferral account (for RS 1, 2, 3, and 23) or the Flow-through deferral account. For FBC, variances in both revenue and power supply costs will continue to flow to the Flow-through deferral account.	C4
Deferral Accounts	Continue the use of rate base and non-rate base deferral accounts, with any required changes proposed at each year's Annual Review. Continue the use of a single Flow-through deferral account for each utility to capture all variances that are approved with flow-through treatment, except where a separate deferral account is approved.	C4
Innovation Fund	Continue the funding of innovation for FEI. Return unused funds from the Current MRP in 2025.	C5
Service Quality Indicators (SQIs)	***FEI***: 17 SQIs (8 SQIs with a target benchmark and 9 informational indicators) are proposed as measures of customer service, employee safety and reliability, as well as new informational indicators related to the energy transition. ***FBC***: 12 SQIs (7 SQIs with a target benchmark and 5 informational measures) are proposed as measures of customer service, employee safety, and reliability.	C6
Exogenous Factors (Z-Factor)	Continue with existing criteria (including existing materiality thresholds). Cost increases or decreases for items such as legislative changes, catastrophic events, accounting changes and BCUC decisions will be flowed through in rates, subject to BCUC approval.	C1.6
Earnings Sharing Mechanism (ESM)	Continue with a 50:50 ESM between customers and the Companies for earnings above and below the allowed ROE.	C1.7
Efficiency Carryover Mechanism (ECM)	Remove the ECM from the Rate Framework.	C1.8
Off-Ramps	Continue with existing off-ramps.	C1.9
Annual Review Process	Retain the Annual Review process but with a more defined scope.	C1.10

1.3.2 Operations and Maintenance (O&M)

During the term of the Current MRP, FortisBC has prioritized and managed its overall O&M expenditures, delivering savings of $28.0 million[1] and $11.8 million[2] to FEI and FBC customers, respectively. The cost benchmark analysis performed by Dr. Kaufmann in Appendix C1-1 demonstrates that both Companies are performing efficiently. Specifically, when comparing average O&M costs per customer against industry peers, FEI performed slightly better than the average (i.e., 0.2 percent better than the average), while FBC performed significantly better than

[1] Section B2.2.2.2, Table B2-8.
[2] Section B2.2.2.2, Table B2-9.

the average (i.e., 35.0 percent better than the average). Further, when considering FortisBC's productivity under multi-year rate plans since 2014, Dr. Kaufmann's analysis shows that FEI and FBC have exceeded industry norms, generating significant cost savings for customers.

Under the Rate Framework, the amount to be included in rates for FortisBC's O&M expenses will continue to be determined by an index-based formula, supplemented by annual forecasts for categories of costs that are appropriately not subject to a formula. Together, the proposed formula and forecast O&M reflect FortisBC's best estimate of what will be needed to meet the challenges and requirements that will arise over the 2025 to 2027 Rate Framework term. This includes the O&M required to address the impacts of the energy transition and other new requirements, while continuing to meet service quality and reliability requirements, which is a key focus for FortisBC.

For the Rate Framework, both FEI and FBC established the 2024 Base O&M using the same method used to establish the 2019 Base O&M in the Current MRP, which was approved by Orders G-165-20 and G-166-20 (MRP Decision). The majority of FortisBC's O&M expenses will be determined by an indexed-based formula, which uses an O&M per customer amount adjusted for customer growth and inflation, less a productivity improvement factor. The starting point for determining the O&M per customer amount is the 2024 Base O&M, which is the adjusted actual O&M expenditures for 2023 expressed over the average number of customers for 2023, escalated by the approved formula indexing factors for 2024, and includes expected spending for 2024 and incremental funding proposed for the term of the Rate Framework.

Both FEI and FBC are requesting an increase to the 2024 Base O&M upon which the 2025 O&M formula spending envelope will be calculated. The 2024 Base O&M has been determined by returning the 2023 embedded savings from the Current MRP to customers ($4.322 million[3] and $4.235 million[4] to FEI and FBC customers, respectively), adjusting for certain exogenous factors and for the movement of certain items to or from flow-through treatment, adding amounts for required spending that will begin in 2024, and adding required net incremental funding for the term of the Rate Framework ($9.652 million[5] for FEI and $5.556 million[6] for FBC). FEI's 2024 Base O&M is forecast at $302.127 million and FBC's Base O&M is forecast at $76.269 million.

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Similar to the Current MRP, FortisBC is proposing an indexing formula with inflation (I), productivity (X) and growth factors. FortisBC proposes to continue the use of a weighted composite I-Factor, consisting of the following inflation indexes: labour indexed to Statistics Canada's AWE:BC and non-labour indexed to the All-items Index for CPI:BC.[7] However, in order to improve efficiency, FortisBC proposes to return to fixed labour and non-labour weightings, which FortisBC considers is appropriate and more efficient.

[3] Section C2.2.1, Table C2-1.
[4] Section C2.3.1, Table C2-10.
[5] Section C2.2.1, Table C2-1.
[6] Section C2.3.1, Table C2-10.
[7] In Orders G-164-14 for FEI and G-182-14 for FBC, the BCUC approved the use of Statistics Canada CANSIM Table 326-0020 (now 18-10-0004-01) to determine the CPI:BC and CANSIM Table 281-0063 (now 14-10-0223-01) to determine AWE:BC.

FortisBC's proposed X-Factors are supported by the report of Dr. Kaufmann, who is an expert in the field of productivity studies. Based on productivity studies, benchmarking studies and other analysis, Dr. Kaufmann recommends:

- An X-Factor of 0.38 percent consisting of a 0.28 percent industry O&M partial factor productivity (PFP) and a 0.10 percent stretch factor for FEI's O&M and Growth capital indexing formulas.
- An X-Factor of 0.20 percent consisting of a 0.20 percent industry PFP and zero percent stretch factor for FBC's O&M indexing formula.

Dr. Kaufmann also recommends that there be no discount factor applied to FEI's and FBC's customer growth factors used in the O&M indexing formulas. As explained by Dr. Kaufmann, a discount on the Companies' customer growth factor would not be consistent with the structure and basic design of FortisBC's incentive regulation-based rate frameworks, as economies of scale are already captured in the X-Factor.

In addition to the index-based formula O&M, some items for each of FEI and FBC are forecast on an annual basis, and the variances between forecast and actual amounts are trued up through the Flow-through deferral account or through other deferral accounts.

The Companies propose to continue to treat the following items as Forecast O&M:

- Pension and OPEB expenses (FEI and FBC);
- Insurance premiums (FEI and FBC);
- BCUC levies (FEI and FBC);
- Integrity digs (FEI only); and
- Clean Growth Initiatives (FEI and FBC).

One new item is proposed for FEI and two new items are proposed for FBC for flow-through treatment starting in 2025:

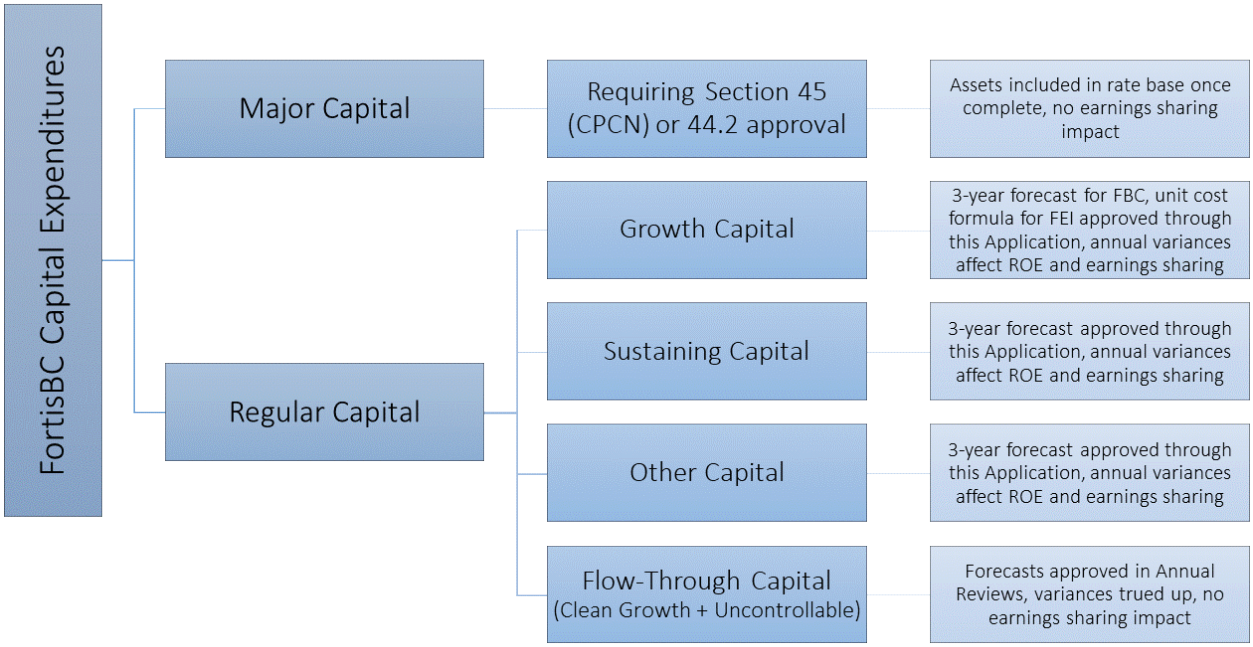
- Meter Reading and Other O&M costs for the Advanced Metering Infrastructure (AMI) project (FEI);
- Costs for the triennial Mandatory Reliability Standards (MRS) Audit (FBC); and
- MRS Assessment Report incremental costs (FBC).

This treatment remains appropriate as these categories of costs are not conducive to being included in an index-based O&M formula because they are either tied to parts of the business that are changing in response to government policy or are otherwise outside the control of management. In the case of the AMI project, this treatment is to ensure that only the actual costs incurred are recovered from customers, which is consistent with the approved treatment of CPCN expenditures.

1.3.3 Capital Expenditures

FortisBC is proposing to determine the majority of its capital expenditures using a three-year forecast of capital expenditures, while retaining a unit cost approach for only those categories of capital that can be suitably managed within a formula. The following diagram illustrates the categories of FortisBC's capital expenditures and their treatment.

Figure A1-1: Categories of Capital Expenditures and Treatment



The Application seeks approval of a forecast of FEI's Sustainment and Other capital and of FBC's Growth, Sustainment and Other capital expenditures from 2025 to 2027 which will be incorporated into FEI's and FBC's rates in those years. FEI is also proposing to continue with a unit cost approach for its Growth capital.

As is the case in the Current MRP, FEI and FBC will seek approval of Major Capital in separate proceedings.

1.3.3.1 FEI Growth Capital

FEI proposes to continue with a unit cost approach to determining Growth capital. The inputs used for calculating Growth capital for the term of the Rate Framework include:

1. **The 2024 Unit Cost Growth Capital Base:** FEI requests approval of a 2024 Base unit cost of $9,300 per Gross Customer Addition. This amount has been determined from a regression of the 2021-2023 actual unit costs of Growth capital, which incorporates the significant cost pressures that were experienced over the Current MRP term, including contractor price increases in 2022, increasing complexity in mains and services

installation, evolving local government restrictions and permitting requirements, and a higher number of system improvements.

2. **A forecast of gross customer additions:** A Gross Customer Addition is a new service to a new customer or customers. FEI proposes to continue to forecast its gross customer additions in each Annual Review, subject to a true-up in each subsequent year. This approach allows for Growth capital spending to reflect any changes in customer additions over the three-year term.

3. **The composite I-Factor value and productivity factor:** As in the Current MRP, a weighted average of AWE:BC for labour costs and CPI:BC for other costs will be recalculated in each Annual Review, less an approved productivity factor.

The following equation illustrates the formula applied to Growth Capital (GC):

$$GC_t = UCGC_{t-1} \times (1 + (I - X)) \times GCA_t + TUp_{t-2}$$

Where: *GCA= Gross Customer Additions*
UCGC = Unit Cost Growth Capital
I = Inflation Factor
X = Productivity Improvement Factor
t = Forecast year
TUp = True-up

The proposed formula and base unit cost for FEI's Growth capital is intended to allow the Company to make the capital investments necessary to add customers that request service while allowing a fair and balanced recovery of the costs. This approach will continue to allow expenditures to vary based on customer growth while maintaining accountability for expenditures to attach new customers based on the unit cost.

1.3.3.2 FEI Sustainment and Other Capital

FEI is seeking approval of the level of Sustainment and Other capital expenditures to be incorporated in rates over the term of the Rate Framework.

Tables A1-2 and A1-3 below summarize the 2025-2027 Forecast expenditures for Sustainment and Other capital, respectively, with 2023 and 2024 Approved amounts provided for comparison. Further details of FEI's forecast Sustainment and Other capital expenditures are provided in Sections C3.3.2 and C3.3.3, respectively.

Table A1-2: FEI Approved and Forecast Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Customer Measurement	30,015	30,494	14,295	13,459	13,422
Transmission System Relilability & Integrity	47,937	49,573	60,065	75,133	66,469
Distribution System Reliability	15,341	17,709	21,245	17,254	9,237
Distribution System Integrity	36,043	32,852	29,993	25,887	36,356
Total Sustainment Capital (Gross)	**129,336**	**130,628**	**125,599**	**131,733**	**125,484**
Sustainment CIAC	(4,342)	(4,342)	(4,436)	(8,443)	(4,615)
Total Sustainment Capital (Net)	**124,994**	**126,286**	**121,163**	**123,290**	**120,869**

Table A1-3: FEI Approved and Forecast Other Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Equipment	12,270	12,240	14,989	16,123	18,421
Facilities	14,686	11,349	18,727	13,053	8,551
Information Systems	24,458	24,563	25,300	25,800	26,500
Corporate Security	3,100	3,100	8,887	7,720	7,741
Total Other Capital	**54,514**	**51,252**	**67,904**	**62,696**	**61,213**

FEI will realize a large reduction in the Customer Measurement portfolio starting in 2025 due to the deployment of the AMI project. Despite this reduction, overall spending on Sustainment capital is forecast to remain at a similar level to that approved for 2023 and 2024. This is because the reduction in Customer Measurement spending is offset by increased spending on pipeline alterations due to the need to address an increased number of regulatory compliance-driven class location upgrades, as well as an increase in pipeline inspection costs to reflect the recently approved ability to conduct in line inspections using electromagnetic acoustic transducer (EMAT) tools.

Other capital is forecast to increase as Equipment and Facilities are entering a large capital replacement cycle due to their age. FEI is also proposing increased investment in physical and cybersecurity, including increased expenditures in patch management, given the need to address the risk environment.

1.3.3.3 FBC Growth, Sustainment and Other Capital

FBC is seeking approval of the level of Growth, Sustainment and Other capital expenditures to be incorporated in rates over the term of the Rate Framework.

Tables A1-4 to A1-6 below summarize the 2025-2027 Forecast expenditures for Growth, Sustainment and Other capital, with 2023 and 2024 Approved amounts provided for comparison. Further details of FBC's forecast Growth, Sustainment and Other capital expenditures are provided in Sections C3.4.1 through C3.4.3 of the Application.

Table A1-4: FBC Approved and Forecast Growth Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Transmission	6,223	1,088	16,418	19,323	20,149
Distribution	1,899	1,716	1,775	1,747	1,814
New Connects	21,951	21,764	23,156	23,965	24,395
Total Growth (Gross)	**30,072**	**24,568**	**41,349**	**45,035**	**46,357**
CIAC (New Connect)	(10,218)	(6,925)	(8,085)	(8,364)	(8,485)
Total Growth (Net)	**19,854**	**17,643**	**33,264**	**36,671**	**37,871**

Table A1-5: FBC Approved and Forecast Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Generation	7,623	7,225	12,823	13,298	15,274
Transmission Sustainment	9,159	12,800	13,604	9,149	8,991
Stations Sustainment	6,841	8,209	20,486	23,627	24,783
Distribution Sustainment	17,480	18,219	22,446	19,014	18,291
Telecommunications	3,606	5,199	6,304	7,028	3,971
Total Sustainment (Gross)	**44,710**	**51,652**	**75,664**	**72,116**	**71,310**
Sustainment CIAC	(1,410)	(614)	(765)	(791)	(816)
Total Sustainment (Net)	**43,300**	**51,038**	**74,899**	**71,326**	**70,494**

Table A1-6: FBC Approved and Forecast Other Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Equipment	4,099	3,717	6,307	6,194	5,842
Facilities	4,305	4,096	6,945	6,792	4,763
Information Systems	8,246	8,372	9,150	9,400	9,550
Corporate Security	1,008	1,028	2,668	2,536	2,544
Total Other Capital	**17,658**	**17,213**	**25,070**	**24,922**	**22,699**

FBC is forecasting increases across all categories of capital expenditures.

The primary drivers for the increase in Growth and Sustainment capital expenditures are increased requirements for system improvements to accommodate load growth, upgrades to aging generation assets to meet current codes and standards, and equipment replacements necessary to address condition, aging infrastructure and improve reliability.

Similar to FEI, Other capital is forecast to increase as fleet, facilities and building equipment are entering a capital replacement cycle due to their age. FBC is also proposing increased investment in physical and cyber security, including increased expenditures in patch management, given the need to address the risk environment.

1.3.4 Annual Calculation of the Revenue Requirement

As in the Current MRP, FEI and FBC will calculate their respective revenue requirements and rates in each Annual Review during the term of the Rate Framework. Section C4 describes the cost and revenue items required to determine the Companies' annual revenue requirements, which will be included in each year's Annual Review materials.

As in the Current MRP, FEI and FBC will forecast each year's delivery revenues (for FEI), revenue and power supply costs (for FBC), depreciation and amortization expense, property taxes, other revenue, interest expense, income tax, return on equity (ROE) and rate base other than those capital expenditures that have been approved in this proceeding.

FortisBC proposes to continue with exogenous factor treatment for events meeting the approved exogenous factor criteria. Subject to BCUC approval, customers' rates will be adjusted either up or down for the cost of service impacts of exogenous events that are beyond the control of the Companies. Exogenous factor treatment of such items will ensure that customers pay only for the actual costs in circumstances where FortisBC does not control the level of expenditures.

As in the Current MRP, FortisBC proposes the continuation of the 50:50 sharing of variances in ROE. Where variances are proposed to be flowed through in future revenue requirements, they will not affect the ROE. Instead, they will be captured in a single Flow-through deferral account, except where a previously approved deferral account already exists.

FortisBC proposes that the structure of the Annual Review process remains the same. However, FortisBC considers that regulatory efficiency can and should be improved in the Annual Review process through a clearer scoping of topics permitted to be explored in IRs (or at the workshop). Therefore, FortisBC proposes that certain topics approved by the BCUC as part of the Rate Framework, including FortisBC's demand/load forecast methods, be out of scope of the Annual Reviews, thus allowing the Companies, the BCUC, and interveners to focus on the in-scope issues and generally improve the efficiency of the process.

1.3.5 FEI Clean Growth Innovation Fund

The importance of the clean energy transition, supported by policy direction from all levels of government, has amplified the urgency for innovation and the adoption of new technologies in the energy sector to advance decarbonization. Recognizing this imperative, FEI is seeking to renew and enhance the Clean Growth Innovation Fund (CGIF) to expedite clean energy innovation. The CGIF supports the CleanBC goal of decarbonization by advancing innovative technologies that will help FEI reduce GHG emissions for its customers and support the transition to a lower carbon economy while optimizing the use of its gaseous energy delivery system for the benefit of its customers.

FEI is proposing to return the unused funds from its 2020 CGIF to customers in 2025, and to continue the CGIF rate rider for the Rate Framework term to support the clean energy transition along the gas value chain with specific enhancements, including a broader focus on cost mitigation and an additional criterion for resilience. In particular, the proposed enhancements to

the CGIF will support and advance British Columbia's clean energy transition by investing in solutions that will reduce GHG emissions in the Province while mitigating costs for customers. At the end of the Rate Framework term, FEI proposes to return any unused balance in the CGIF to customers.

1.3.6 Service Quality Indicators

The current suite of Service Quality Indicators (SQIs) for FEI and FBC have been appropriate and useful in monitoring the Companies' performance to ensure that any efficiencies and cost reductions do not result in a degradation of service quality. For the Rate Framework, FortisBC reviewed the current SQIs to assess their continued appropriateness in measuring service quality and for the level of the benchmarks and thresholds for each metric. Based on this review, FEI and FBC are proposing updates and modifications to the existing suite of SQIs in order to build on the experience gained during the Current MRP term.

FortisBC is proposing updates to the benchmarks and/or thresholds for the All Injury Frequency Rate (AIFR) indicator, FEI's Public Contact with Gas Lines indicator, and FBC's System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) indicators. FortisBC is also proposing to make the "Meter Reading Accuracy" metric an informational indicator and rename it "Meter Reading Completion" to better reflect what the metric is measuring.

Reflecting FortisBC's key focus for this Application, FEI is proposing a new category of informational indictors specific to the energy transition.

1.3.6.1 FEI's Proposed Service Quality Indicators

The following table provides a comparison of FEI's current and proposed SQIs. The areas of the table that are shaded green reflect changes to existing indicators as well as new indicators.

Table A1-7: Comparison of FEI Current and Proposed SQIs

		Current		*Proposed*	
Safety Indicators		Benchmark	Threshold	Benchmark	Threshold
Annual results	**Emergency Response Time**	>= 97.7%	96.2%	>=97.7%	96.2%
Annual results	**Telephone Service Factor (Emergency)**	>= 95%	92.8%	>=95%	92.8%
3 Year rolling average	**All Injury Frequency Rate**	<= 2.08	2.95	<= 1.64	2.21
Annual results	**Public Contacts with Gas Lines**	<=8	12	<=6	10
Responsiveness to Customer Needs Indicators					
Annual results	**First Contact Resolution**	>= 78%	74%	>=78%	74%
Annual results	**Billing Index**	<= 3	5	<=3	5
Annual results	**Meter Reading Completion**	>= 95%	92%	Informational	Informational
Annual results	**Telephone Service Factor (Non Emergency)**	>= 70%	68%	>=70%	68%
Annual results	**Meter Exchange Appointment Activity**	>=95%	93.8%	>=95%	93.8%
Annual results	**Customer Satisfaction Index**	Informational	Informational	Informational	Informational
Annual results	**Average Speed of Answer**	Informational	Informational	Informational	Informational
Reliability Indicators					
Annual results	**Transmission Reportable Incidents**	Informational	Informational	Informational	Informational
Annual results and 5 Year rolling average	**Leaks per KM of Distribution System Mains**	Informational	Informational	Informational	Informational
Energy Transition Indicators					
Annual results	**Scope 1 Emissions**	N/A	N/A	Informational	Informational
Annual results	**Renewable and Low Carbon Energy Supply Volume**	N/A	N/A	Informational	Informational
Annual results	**Natural Gas for Transportation Volume**	N/A	N/A	Informational	Informational
Annual results	**Demand Side Management Energy Savings**	N/A	N/A	Informational	Informational

1.3.6.2 FBC's Proposed Service Quality Indicators

The following table provides a comparison of FBC's current and proposed SQIs. The four metrics with green shaded areas reflect changes from the current SQIs.

Table A1-8: Comparison of FBC Current and Proposed SQIs

		Current		*Proposed*	
Safety Indicators		Benchmark	Threshold	Benchmark	Threshold
Annual results	**Emergency Response Time**	>= 93%	90.6%	>=93%	90.6%
3 Year rolling average	**All Injury Frequency Rate**	<= 1.64	2.39	<=1.31	2.56
Responsiveness to Customer Needs Indicators					
Annual results	**First Contact Resolution**	>= 78%	74%	>=78%	74%
Annual results	**Billing Index**	<= 3	5	<=3	5
Annual results	**Meter Reading Completion**	>= 98%	96%	Informational	Informational
Annual results	**Telephone Service Factor**	>= 70%	68%	>=70%	68%
Annual results	**Customer Satisfaction Index**	Informational	Informational	Informational	Informational
Annual results	**Average Speed of Answer**	Informational	Informational	Informational	Informational
Reliability Indicators					
Annual results	**System Average Interruption Duration Index - Normalized**	3.22	4.52	3.24	4.71
Annual results	**System Average Interruption Frequency Index - Normalized**	1.57	2.19	1.64	2.25
Annual results	**Generator Forced Outage Rate**	Informational	Informational	Informational	Informational
Annual results	**Interconnection Utilization**	Informational	Informational	Informational	Informational

1.4 *SUPPORTING STUDIES*

This Application seeks approval of updated versions of the various studies that will support the calculation of revenue requirements for the term of the Rate Framework. Specifically, FortisBC

has updated studies that will support the calculation of FortisBC's revenue requirements for the term of the Rate Framework. These include Depreciation Studies, Lead/Lag Studies, a Corporate Services Study, and Capitalized Overhead Studies.

In addition to the studies referenced above, FortisBC completed a review of the Cost Driver Approach for shared services between FEI and FBC, which was previously approved for use by the BCUC for the Current MRP. Based on discussions with the departments sharing services and a review of the cost pools for the shared resources, FortisBC confirmed that the Cost Driver Approach, using the four current cost drivers remain appropriate. As part of the Cost Driver Approach, during the Rate Framework term, FortisBC will annually review the allocation basis for each cost driver (e.g., for costs allocating using the number of customers, the numbers of FEI and FBC customers will be updated to determine the allocation percentage used) and update the percentages as required.

1.4.1 Depreciation Studies

FEI and FBC are proposing updates to their respective depreciation rates and net salvage rates based on the results of the depreciation studies in Appendix D2-1 (FEI) and Appendix D2-2 (FBC) (2022 Depreciation Studies).

For FEI, implementation of the 2022 Depreciation Study, consisting of the aggregate of rates for depreciation, net salvage and amortization of Contributions in Aid of Construction (CIAC) rates, results in a net increase of aggregate depreciation and net salvage expense of approximately $2.0 million per year, a 0.02 percent overall increase to the composite depreciation rate compared to the current approved rates.

For FBC, implementation of the 2022 Depreciation Study, consisting of the aggregate of rates for depreciation, net salvage and amortization of CIAC rates, results in a net increase of aggregate depreciation and net salvage expense of approximately $4.3 million per year, an approximate 0.20 percent overall increase to the composite depreciation rate compared to the current approved rates.

1.4.2 Lead-Lag Studies for Cash Working Capital

FortisBC is requesting approval to adopt updated lead-lag days as determined in the 2023 Lead-Lag Studies in Appendix D3-1 for FEI and Appendix D3-2 for FBC.

The results for FEI are as follows:

- When applied to 2024 approved data, the 2023 Lead-Lag Study results in a net lag of 5.1 days, which is consistent with the net lag of 5.1 days that results when using the previous approved Lead-Lag study.
- This difference of 0.0 days is the result of a 1.2 day decrease in expenditure lead days, offset by a 1.2 day decrease in revenue lag days. The decrease in expenditure lead days is primarily attributable to a shorter payment lead for carbon tax and PST remittances as

well as a shorter service lead for O&M expenditures. The decrease in revenue lag days is primarily attributable to a decrease in collection lag for residential customers.

- The updated study has no impact to total cash working requirements.

The results for FBC are as follows:

- When applied to 2024 approved data, the 2023 Lead-Lag Study results in a net lag of 12.7 days as compared to a net lag of 9.6 days that results when using the previous approved Lead-Lag study.
- The difference of 3.1 days is the result of a 4.7 day decrease in expenditure lead days offset by a 1.6 day decrease in revenue lag days. The decrease in expenditure lead days is primarily due to automation of the power purchase payment process resulting in a shorter payment lead. This was offset by a decrease in revenue lag days primarily due to a decrease in service lag days for residential customers due to an increase in customers billed monthly vs bi-monthly.
- When applied to the forecast revenues and operating expenses for 2024, this change in net days would have resulted in an increase of approximately $2.4 million in cash working capital ($3.7 million increase from expenses offset by a $1.3 million decrease from revenues).

1.4.3 Corporate Services Study

FortisBC is requesting approval of the methodologies of allocating common corporate service costs from Fortis Inc. (FI) and FortisBC Holdings Inc. (FHI) to FEI and FBC. The allocation methodologies include a formula that is based on total assets, excluding goodwill, and controllable operating expenses for FI corporate services, and the use of a Massachusetts Formula for FHI corporate service allocations. Both methodologies and the nature of the FI and FHI corporate service costs have been reviewed and endorsed by KPMG in the 2023 Corporate Service Cost Study (2023 CSC Study) included in Appendix D4-1. FortisBC is seeking approval of the allocation methodology, rather than the forecast of corporate service costs. The actual costs and allocation percentages will vary each year of the Rate Framework depending on the size of the eligible corporate cost pool at FI and FHI, as well as the relative size of the FI and FHI allocators.

The allocation of FI and FHI corporate service costs has been reviewed by KPMG in the 2023 CSC Study. In Section 7 of the 2023 CSC Study, KPMG states:

> KPMG evaluated FI's and FHI's corporate service cost allocation methodologies in alignment with evaluation criteria introduced in Section 2.3 of the 2023 CSC Study. Overall, both allocation methodologies appear to be a reasonable mechanism to allocate corporate service costs.

Based on the recommendations from the 2023 CSC Study, FortisBC will continue to apply the methodology of aggregating its common corporate service costs from FI and FHI and allocating

them to FEI and FBC using the methodologies described above and in more detail in the 2023 CSC Study.

1.4.4 Capitalized Overhead Studies

For the term of the Rate Framework, FEI is proposing to apply a capitalized overhead rate of 14.5 percent of gross O&M, net of biomethane O&M transferred to the BVA, and FBC is proposing to apply a capitalized overhead rate of 15.5 percent of gross O&M, to regular capital expenditures. This compares to the 16 percent for FEI and 15 percent for FBC used during the term of the Current MRP. The capitalized overhead rates reflect a reasonable basis for capitalization of costs related to capital activities for both FEI and FBC that have not been directly charged to capital projects. The allocation of capitalized overhead costs is consistent with the methodology from prior years' studies and filings, and corroborated with established rate-regulated utility practice, the BCUC's Uniform System of Accounts (USofA), and US GAAP.

FortisBC engaged KPMG to perform a review of its capitalized overhead methodology for the term of the Rate Framework. The 2023 Capitalized Overhead Study for FEI is included in Appendix D5-1 and the 2023 Capitalized Overhead Study for FBC is included in Appendix D5-2.

FEI estimates that the impact on customer delivery rates of a change to the capitalized overhead rate is approximately 0.35 percent for every 1 percent change in the capitalized overhead rate. Therefore, all else equal, decreasing the capitalized overhead rate from 16 percent to 14.5 percent would increase customer delivery rates by approximately 0.52 percent in the year of implementation (2025 in this case).

FBC estimates that the impact on customer rates of a change to the capitalized overhead rate is approximately 0.17 percent for every 1 percent change in the capitalized overhead rate. Therefore, all else equal, increasing the capitalized overhead rate from 15 percent to 15.5 percent would decrease customer rates by approximately 0.09 percent in the year of implementation (2025 in this case).

1.5 *CONCLUSION*

FortisBC's Rate Framework should be approved by the BCUC. The Rate Framework incorporates flexible rate setting mechanisms that recognize the uncertainty inherent in the energy transition and the need to manage its impacts on the provision of affordable, reliable, and resilient service to customers in the face of heightened concern around the impacts of climate change, as well as physical and cyber security risks on BC's energy systems.

FortisBC believes that the Rate Framework strikes a reasonable balance, by providing the necessary flexibility for FortisBC to manage the impacts of the energy transition (through annual updating of forecasts and costs), while continuing to incent FortisBC to control its ongoing operating and capital costs. FortisBC continues to believe in the fundamental principles behind incentive regulation. The majority of the Companies' O&M costs, and also the unit costs of FEI's growth capital, can still benefit from the discipline imposed by an indexing approach. Similarly,

the majority of the Companies' capital costs remain subject to a three-year forecast, providing incentive to control costs during the term of the Rate Framework. The Rate Framework also provides for regulatory efficiency by establishing the parameters for what can and should be reviewed during each Annual Review.

2. APPROVALS SOUGHT

2.1 INTRODUCTION

In this Application, FEI and FBC are respectfully seeking an Order or Orders from the BCUC, pursuant to sections 59 to 61 of the *Utilities Commission Act* (UCA), granting the approvals set out in Sections A2.2 and A2.3, respectively. Draft forms of Order sought for FEI and FBC are included in Appendix E of the Application.

2.2 FEI APPROVALS

Proposed Rate Framework

1. Approval of the rate setting mechanisms set out in Section C1 and in Table C1-1 of this Application for setting delivery rates for the years 2025 through 2027, including:

   a) A three-year term from 2025 to 2027, with the potential to extend the term beyond 2027, subject to review and approval by the BCUC (Section C1.2);

   b) Use of an index-based approach to Base O&M and Growth capital, incorporating:

      i) A 2024 Base O&M per customer, as described in Section C2.4;

      ii) A 2024 Base Unit Cost Growth Capital of $9,300, as described in Section C3.3.1.2.2, Table C3-4;

      iii) An inflation factor as set out in Section C1.3, including a fixed labour weighting of 50 percent and fixed non-labour weighting of 50 percent;

      iv) An X-Factor of 0.38 percent, as set out in Section C1.4.2;

      v) A growth factor set at 100 percent of the growth in average number of customers for O&M and 100 percent of Gross Customer Additions for Growth capital, with a true-up to actual when available, all as set out in Section C1.5;

   c) Approval of the level of forecast Sustainment and Other capital to be incorporated in rates over the term of the Rate Framework, as set out in Section C3.3;

   d) Flow-through treatment for the items described in Section C4.13.2 and Table C4-7;

   e) Exogenous factor treatment as described in Section C1.6;

   f) The Service Quality Indicators listed in Table C6-2 of Section C6.3 and described in Appendix C6-1;

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g) Continuation of the Earnings Sharing Mechanism, with half of ROE variances to be shared with customers as set out in Section C1.7;

h) Off ramps as described in Section C1.9; and

i) The Annual Review process, with changes to the scope of the Annual Reviews, as described in Section C1.10, including approval of FEI's demand forecasting methods for the term of the Rate Framework.

Clean Growth Innovation Fund (CGIF)

2. Approval to return to customers the balance in the 2020 CGIF and to establish the 2025 CGIF and rate rider for the term of the Rate Framework as follows:

a) Establish the non-rate base 2025 CGIF, attracting a WACC return, to record the funding collected through the Innovation Fund rate rider and the expenditures. Any residual balance will be returned to customers at the end of the Rate Framework;

b) Continue the Innovation Fund basic charge rate rider of $0.40 per month during the term of the Rate Framework; and

c) Return the ending balance of the 2020 CGIF to customers through amortization of the deferral account over one year in 2025.

Core Market Administration Expense (CMAE)

3. Approval of the following regarding CMAE during the term of the Rate Framework:

a) To continue to forecast the CMAE budget by cost component using a new, simplified template, as described in Appendix C4-3;

b) To submit the CMAE forecast for approval as a separate application at or near the same time as FEI's Third Quarter Gas Cost Report;

c) To review the prior year's forecast to actual CMAE variances within the CMAE forecast application, using the new, simplified template;

d) To continue to treat CMAE as part of FEI's Cost of Gas, allocating 25 percent of costs to the Commodity Cost Reconciliation Account (CCRA) and 75 percent to the Midstream Cost Reconciliation Account (MCRA); and

e) To record the variances between forecast and actual CMAE in the CCRA and MCRA using the same allocation as is used to allocate the forecast CMAE.

Supporting Studies

4. Approvals of the following based on supporting studies to be used in the determination of rates for FEI effective January 1, 2025:

a) Depreciation rates in the amounts set out in Table D2-3 in Section D2.2;

b) Net salvage rates in the amounts set out in Table D2-4 in Section D2.2;

c) Modification to the approved Lead Lag days as set out in Table D3-1, Section D3.2;

d) The methodologies of allocating common corporate service costs from Fortis Inc. and FortisBC Holdings Inc. to FEI, as set out in Section D4; and

e) The capitalized overhead rate of 14.5 percent, as set out in Section D5.4.

Other Approvals

5. Approval to continue the use of the non-rate base Flow-through deferral account, attracting a WACC return, as described in Section C4.13.2 and Table C4-7.

6. Approval of Exogenous Factor treatment for the 2021 Flood costs, as described in Section C1.6.1.

7. Approval to maintain the CPCN threshold for FEI at $15 million during the term of the Rate Framework.

2.3 *FBC APPROVALS*

Proposed Rate Framework

1. Approval of the rate setting mechanisms set out in Section C1 and in Table C1-1 of this Application for setting rates for the years 2025 through 2027, including:

   a) A three-year term from 2025 to 2027, with the potential to extend the term beyond 2027, subject to review and approval by the BCUC (Section C1.2);

   b) Use of an index-based approach to Base O&M, incorporating:

      i) A 2024 Base O&M per customer, as described in Section C2.4;

      ii) An inflation factor as set out in Section C1.3, including a fixed labour weighting of 60 percent and fixed non-labour weighting of 40 percent;

      iii) An X-Factor of 0.20 percent, as set out in Section C1.4.3;

      iv) A growth factor set at 100 percent of the growth in average number of customers, with a true-up to actual when available, as set out in Section C1.5;

   c) Approval of the level of forecast Growth, Sustainment and Other capital to be incorporated in rates over the term of the Rate Framework, as set out in Section C3.4;

   d) Flow-through treatment for the items described in Section C4.13.2 and Table C4-7;

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e) Exogenous factor treatment as described in Section C1.6;

f) The Service Quality Indicators listed in Table C6-7 of Section C6.4 and described in Appendix C6-2;

g) Continuation of the Earnings Sharing Mechanism, with half of ROE variances to be shared with customers as set out in Section C1.7;

h) Off ramps as described in Section C1.9; and

i) The Annual Review process, with changes to the scope of the Annual Reviews, as described in Section C1.10, including approval of FBC's load forecasting methods for the term of the Rate Framework.

Supporting Studies

2. Approvals of the following based on supporting studies to be used in the determination of rates for FBC effective January 1, 2025:

a) Depreciation rates in the amounts set out in Table D2-7 in Section D2.3;

b) Net salvage rates in the amounts set out in Table D2-8 in Section D2.3;

c) Modification to the approved Lead Lag days as set out in Table D3-2, Section D3.3;

d) The methodologies of allocating common corporate service costs from Fortis Inc. and FortisBC Holdings Inc. to FBC, as set out in Section D4; and

e) The capitalized overhead rate of 15.5 percent, as set out in Section D5.4.

Other Approvals

3. Approval to continue the use of the non-rate base Flow-through deferral account, attracting a WACC return, as described in Section C4.13.2 and Table C4-7.

4. Approval to maintain the CPCN threshold for FBC at $20 million during the term of the Rate Framework.

3. PROPOSED REGULATORY PROCESS

FortisBC considers that this Application can be addressed efficiently and effectively by way of a written public hearing process that includes two rounds of information requests (IRs) and an opportunity for interveners to file evidence.

The draft regulatory timetable proposed below enables ample public participation in the proceeding while aligning with the BCUC's Final List of Efficiencies issued as part of the Regulatory Efficiency Initiative.[8] Consistent with the BCUC's goal to improve regulatory timetables, FortisBC has proposed a draft regulatory timetable for the entire proceeding – thereby establishing a "clear path" towards the completion of the proceeding and greater certainty for participants. Additionally, FortisBC has incorporated additional time after the filing of the Application and after the filing of IR No. 1 responses to allow the BCUC time to provide directions on scoping of issues. In particular, while FortisBC considers two rounds of IRs to be appropriate given the nature and scope of the Application, FortisBC notes the expectation established in the BCUC's Final List of Efficiencies that second round IRs will be used to seek clarification of IRs from the prior round.

The proposed timetable also takes into consideration the following:

- That the BCUC, interveners, and the Companies have five years of experience with the Current MRP on which the Rate Framework is based;
- While this Application is about setting the Rate Framework for the upcoming three-year term, FortisBC is proposing Annual Reviews each year of the Rate Framework to set rates and review applicable revenue requirement items; and
- FortisBC has filed a comprehensive and detailed Application.

FortisBC has provided a draft regulatory timetable below that accounts for the potential for intervener evidence. This timetable contemplates the BCUC issuing a procedural order on or before May 10, 2024.

Table A3-1: Proposed Regulatory Timetable

Action	Dates (2024)
FortisBC publishes notice by	Friday, May 24
FortisBC confirmation of notice	Wednesday, May 29
Intervener registration deadline	Friday, June 7
BCUC Information Request (IR) No. 1	Tuesday, June 11
Intervener IR No. 1	Tuesday, June 18
Companies' Responses to IR No. 1	Tuesday, July 23
Intervener confirmation of intent to file Evidence	Friday, August 9
BCUC and Intervener IR No. 2	Tuesday, August 20

[8] https://docs.bcuc.com/documents/other/2023/doc_75555_bcuc-regulatory-efficiency-initiative-final.pdf.

Action	Dates (2024)	
BCUC notice of remaining timetable		Tuesday, August 27
Companies' responses to IR No. 2		Thursday, September 12
Action	**Without Evidence**	**With Evidence**
Intervener Evidence	Not Applicable	Tuesday, October 1
IRs on Intervener Evidence		Wednesday, October 23
Intervener Responses to IRs on Evidence		Thursday, November 14
Companies Rebuttal Evidence (if required)		Tuesday, December 3
IRs on Rebuttal Evidence (if required)		Thursday, December 19
		Dates (2025)
Companies' Response to IRs on Rebuttal (if required)		Tuesday, January 14
Letters of comment deadline	Thursday, September 19	Thursday, January 16
FortisBC final argument	Friday, October 4	Tuesday, January 21
Intervener final arguments	Friday, October 25	Tuesday, February 11
FortisBC reply argument	Monday, November 18	Tuesday, March 4

In addition to the procedural steps set out above, FortisBC proposes that it host a targeted workshop on demand/load forecasting to assist the BCUC and interveners in understanding the forecast methods that are currently employed by the Companies in their annual short-term forecasting, and the other forecast methods that can be used to determine longer term trends and impacts of the energy transition. FortisBC proposes that the workshop be held between IR No. 1 and IR No. 2, as parties will have had the opportunity to explore technical details of the load forecasting methods in the first round of IRs, which will help to inform the discussions at the workshop. Additionally, through questions and discussion at the workshop, issues can be explored and resolved prior to the second round of written IRs, thus improving the efficiency of IR No. 2. Accordingly, FortisBC proposes that the workshop be held either the week of August 6th or the week of August 12th. The exact timing of the workshop can be determined once the BCUC has issued its procedural order and after discussion with interveners and the BCUC on a date that accommodates the availability of all parties.

Following a Decision on this Application, which will determine the Rate Framework and specific elements of the annual rate setting process, FEI and FBC will file their respective Annual Review materials for setting 2025 rates. Based on the timetables proposed above, it is unlikely that the Annual Reviews for 2025 rates will be completed in time to have permanent rates effective January 1, 2025. As such, FEI and FBC expect to seek approval of rates, on an interim basis, effective January 1, 2025, some time in the Fall of 2024.

FortisBC Energy Inc. and FortisBC Inc.
Application for Approval of a Rate Setting Framework for 2025 through 2027

Section B:

RATE SETTING FRAMEWORK CONSIDERATIONS

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B: RATE SETTING FRAMEWORK CONSIDERATIONS

1. ENERGY TRANSITION INFLUENCES ON THE RATE SETTING FRAMEWORK

1.1 INTRODUCTION

In this Application, FortisBC Energy Inc. (FEI) and FortisBC Inc. (FBC) (together, FortisBC, the Companies or the Utilities) sets out their proposed rate setting framework (Rate Framework or Framework) for the three years 2025 to 2027. In developing its proposals in this Application, FortisBC has considered the impacts of the energy transition on its customers and operations and has reflected these impacts in the proposed term and other elements of the Rate Framework.

A key focus of this Application is on proposing flexible rate setting mechanisms that recognize the uncertainty inherent in the energy transition and that manage its impacts on the provision of affordable, reliable and resilient service to customers in the face of heightened concern around the impacts of climate change, as well as physical and cyber security risks on BC's energy systems. For more than a decade, FortisBC has been evolving its rate setting frameworks to help manage the early impacts of the energy transition, and five years have passed since FortisBC filed its 2020-2024 Multi-year Rate Plan (MRP) Application. During this time, many CleanBC policies have advanced to implementation stages, the impacts of the energy transition are now more pervasive in both gas and electric operations, and further adjustments to the rate setting frameworks are needed.

In Sections B1.2 and B1.3, FortisBC provides information on the energy transition and the policies guiding the energy transition. Section B1.4 describes the energy transition impacts on FEI and FBC. Section B1.5 discusses the challenges related to energy affordability, and Section B1.6 addresses physical and cyber security, climate adaptation, and the ongoing need to invest in FortisBC's energy systems.

1.2 THE ENERGY TRANSITION

The energy transition, a pivotal shift in the global energy sector, represents the movement from fossil fuel-based energy to energy based on renewable and low carbon sources. The International Energy Agency (IEA) World Energy Outlook 2023[9] describes this transition as a complex and multifaceted process, involving a substantial overhaul of existing infrastructure and market dynamics. The aim is to meet rising energy demands while simultaneously reducing greenhouse gas emissions to mitigate the impacts of climate change and adapting infrastructure to a changing climate.

[9] https://www.iea.org/reports/world-energy-outlook-2023/executive-summary.

The energy transition is expected to develop differently across jurisdictions such that jurisdiction-specific characteristics will frame available pathways to a lower carbon future.[10] Regardless of the pathway, there is a need for the energy transition to consider affordability, security, and resilience. This is recognized by the IEA which highlights three important issues, including risks in affordability, electricity security, and the resilience of energy supply chains.[11] Echoing this sentiment, the Honourable Josie Osborne, Minister of Energy, Mines and Low Carbon Innovation, emphasizes that affordability should be a cornerstone of British Columbia's energy transition.[12] This commitment to balancing affordability and climate action is reflected in the Premier's mandate letter to Minister Osborne of January 15, 2024, which directs the Minister to "work with the BC Utilities Commission to identify an appropriate role for the Commission in supporting B.C.'s clean energy transition, in alignment with the province's climate goals to achieve net zero by 2050 and affordability objectives".[13]

In light of the energy transition, FortisBC recognizes the need to continue evolving its approach and depart from business as usual over time. This transition, while essential, brings with it significant changes and challenges that require thoughtful and proactive responses. FortisBC has been actively adapting to the changing energy landscape and continues to evolve its approach as the energy transition unfolds.

1.3 *POLICIES GUIDING THE ENERGY TRANSITION IN BRITISH COLUMBIA*

Climate policy at all levels of government is focused on reducing emissions. FortisBC has played a key role in enabling the transition and has been adapting its business so that it can continue to serve its customers in a low carbon future; however, uncertainty over the role of gas and electric infrastructure remains.

FortisBC is an industry leader through its development of emissions-reducing programs like Demand-Side Management (DSM), Renewable Natural Gas (RNG), Natural Gas for Transportation (NGT) and Electric Vehicle (EV) Direct Current Fast Charging (DCFC) Infrastructure, efforts it has pursued for more than a decade. FortisBC's most recent response to its policy environment, the "Clean Growth Pathway to 2050"[14], represents an evolution of its innovative programs and outlines how FortisBC's infrastructure can contribute to achieving climate policy objectives at all levels. The pillars for the Clean Growth Pathway to 2050 include

[10] Low Carbon Resource Initiative: Designs for Net Zero Energy Systems: Meta-Analysis of U.S. Economy-Wide Decarbonization Studies. December 2023. https://www.epri.com/research/products/000000003002028736. "There is no single design for net-zero energy systems. Each of these studies points to a wide array of energy carriers, technologies, and regionally specific solutions to meet the energy demands of an expanding U.S. economy. The range of results across these studies highlights a range of perspectives and possibilities for the design of net-zero systems".

[11] https://www.iea.org/reports/world-energy-outlook-2023/executive-summary.

[12] Minister of Energy, Mines and Low Carbon Innovation, Josie Osborne, 2023. https://twitter.com/Josie_Osborne/status/1709996555431002554.

[13] 2024 Mandate Letter to Energy, Mines and Low Carbon Innovation. https://www2.gov.bc.ca/assets/gov/government/ministries-organizations/premier-cabinet-mlas/minister-letter/emli_-_osborne.pdf.

[14] https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/clean-growth-pathway-brochure.pdf.

renewable and low carbon gases, energy efficiency, low and zero carbon transportation, and Liquefied Natural Gas (LNG) for marine fueling. FortisBC believes its infrastructure will play a critical role in the transition toward a lower carbon environment.

As a significant energy provider in British Columbia, the direction of environmental and economic policies is of great importance to FortisBC. FortisBC must align its strategies and adapt to the increasingly complex policy requirements that are being put in place and that will continue to evolve. This must be done, not only from a compliance perspective, but also to seize opportunities that arise from a policy environment that increasingly favours innovative and low carbon energy solutions.

In the following subsections, FortisBC details the policies that are currently having the greatest influence on the Companies, and those that are expected to be significantly impactful over the coming three to five years.

1.3.1 Greenhouse Gas Reduction Standard

As described in the CleanBC Roadmap to 2030[15], the Greenhouse Gas Reduction Standard (GHGRS) will establish an obligation for natural gas utilities to reduce GHG emissions from energy delivered to the buildings and industrial sectors by way of an annual cap of approximately 6 Mt CO2e on gas customer emissions. The GHGRS cap is a significant part of the Province's CleanBC 2030 Roadmap, considering that more than half of the buildings in BC are heated with natural gas. The provincial government has indicated that enabling legislation for the GHGRS will be introduced to the provincial legislature in 2024.

While there is no clarity on the approach utilities are expected to take to comply with the GHGRS, FEI anticipates that the GHGRS may lead to the electrification of gas end uses, with significant implications on electric utilities through increasing the demand for electricity across the Province.

1.3.2 Greenhouse Gas Reduction Regulation

The *Greenhouse Gas Reduction (Clean Energy) Regulation* (GGRR) authorized under the *Clean Energy Act* (CEA) allows the government to set out prescribed undertakings which utilities may choose to carry out to reduce GHG emissions while recovering the costs in rates. Through the prescribed undertakings, the GGRR enables FortisBC to use specific technologies or renewable or low carbon fuels to reduce emissions. The most recent amendment to the GGRR in 2023 provides FortisBC with incentive amounts of $200 million for low-carbon transportation (vehicle incentives and fueling infrastructure) which includes support for renewable fuels like hydrogen. It also allows for cost recovery of FortisBC's investments in EV charging stations. Each utility in BC is eligible to invest up to $100 million in zero emission vehicle incentives and $100 million in infrastructure, meaning that FEI and FBC may each invest up to $200 million.

[15] https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf.

1.3.3 Demand Side Measures Regulation

The Demand-Side Measures Regulation (DSM Regulation) was amended in June 2023. As amended, the DSM Regulation phases out incentives for conventional gas space and water heaters, while allowing for increased incentives for advanced DSM measures such as gas heat pumps, hybrid heating systems and deep energy retrofits. To support advanced DSM, the DSM Regulation now requires the use of the utility cost test to evaluate cost-effectiveness, with the avoided cost of gas being the maximum price under the GGRR for the purchase of RNG, hydrogen, synthesis gas and lignin. The DSM Regulation also provides increased support to address energy efficiency in Indigenous communities and for low-income customers.

In response to the amendments to the DSM Regulation, FEI amended its energy efficiency and rebate programs, pivoting towards advanced DSM measures. This is highlighted in FEI's 2024-2027 DSM Expenditures Plan Application, which was accepted by the BCUC on February 2, 2024. The 2024-2027 DSM Plan also introduced new program areas, including the Indigenous Program Area, which focuses exclusively on Indigenous communities.

While eliminating incentives on conventional gas space and water heating appliances, the updated DSM Regulation does allow for incentives for hybrid heating systems. Although they are not widely adopted today, hybrid heating systems can leverage the gas system in meeting peak demand, ideally shifting towards more flexible and efficient heating solutions that can help mitigate excessive peak demand growth on the electrical grid. FortisBC views its infrastructure as a critical platform for innovation, facilitating the adoption of new, efficient, and low emission technologies.

1.3.4 Carbon Pricing

In 2008, the Province introduced North America's first carbon tax. This tax is levied on the purchase and use of fossil fuels which encompass about 70 percent of the Province's GHG emissions. In alignment with federal carbon pricing requirements, starting April 1, 2023, BC's carbon tax rate is increasing annually by $15 per tonne until it reaches $170 per tonne in 2030. An output-based pricing system (BC OPBS) for large industrial operations will be brought into effect April 1, 2024. The BC OPBS is an industrial carbon pricing system designed specifically for industry in BC and will be mandatory for operations that emit over 10,000 tonnes of carbon dioxide equivalent (tCO2e) per year.

Throughout 2022 and 2023, FEI has actively engaged with provincial authorities to discuss the existing carbon tax structure, highlighting areas that potentially restrict FEI from achieving its GHG reduction plans. One particular risk for FEI is that the GHGRS, as discussed in Section B1.3.1, could effectively introduce an indirect carbon pricing mechanism. If the carbon tax is also added to gas customers' bills, then they will effectively pay a double carbon charge with both the GHGRS and carbon tax. Such an outcome would decrease the availability of low-carbon solutions and affordable energy that the gas system offers.

1.3.5 Clean Electricity Regulations

The federal government issued an initial draft of the Clean Electricity Regulations[16] (CER) under *the Canadian Environmental Protection Act, 1999* with the objective of reaching net-zero emissions from Canada's electricity grid by 2035. The CER is part of Canada's broader strategy to combat climate change and transition to renewable energy sources, aiming for a net-zero economy by 2050. The CER focuses on reducing GHG emissions from fossil-fuel generated electricity by setting performance standards for electricity generation and promoting the shift towards clean energy sources such as wind, solar and hydroelectric power. The CER is expected to have varied impacts across the provinces, particularly those reliant on fossil fuel-generated electricity. The cost for compliance would potentially be incurred when the sector is already dealing with growing demand due to electrification of other sectors, including growth in electric vehicle adoption. These changes in the industry will drive significant investment beyond generation, including major upgrades to distribution networks and deployment of smart grid technology. As these proposed regulations are still in the early consultation stages, the impact to FortisBC is uncertain.

1.3.6 Clean Energy Act Amendments

Objective 2(c) of the CEA was amended and replaced in February 2024. This objective now requires that 100 percent of electricity generated in British Columbia and supplied to the integrated grid is generated from clean or renewable resources, and that the infrastructure necessary to transmit that electricity is built. This amendment further restricts FBC's choices for new electric resource options, particularly when it comes to new capacity resources. Options may include new hydro-electric generation, pump storage, batteries or renewable gas fired combustion. Solar and wind generation are not included in this mix as they are intermittent resources, incapable of providing the dispatchable energy needed to meet energy demand during BC's cold winter peak events.

1.3.7 BC Building Codes

The Province has established regulations aimed at enhancing energy efficiency and reducing GHG emissions through the BC Building codes. These provincial requirements significantly influence local government policies and the buildings sector, setting performance targets for new buildings. These building codes grant local governments the discretion to adopt progressive performance levels over time.

For FortisBC, staying abreast of and responding to these policy shifts is critical, as they can influence requirements ranging from infrastructure development to the choice of energy options offered to customers. FortisBC further discusses the BC Energy Step Code[17], the Zero Carbon

[16] https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/clean-electricity-regulation.html.
[17] https://energystepcode.ca/.

Step Code[18], and the City of Vancouver's building code[19] below. The BC Energy Step Code and the Zero Carbon Step Code work in tandem to produce more efficient, lower emitting homes. The BC Energy Step Code requires progressive advancement in building envelope and mechanical system efficiency whereas the Zero Carbon Step Code sets progressive GHG emissions requirements for new buildings (i.e., new buildings must eventually achieve zero GHG emission performance).

For FEI and FBC, evolving building codes are expected to place some downward pressure on building energy demand as building envelope and mechanical system efficiency increases, helping to offset demand increases due to population growth and fuel switching.[20] The emphasis on emissions performance is expected to lead to decreased demand for natural gas, and increased demand for low carbon energy (such as electricity or renewable and low carbon gas) as new buildings seek to comply with emissions standards. For FEI, an additional challenge is securing a compliance pathway using renewable and low carbon gases to meet emissions performance requirements so that buildings can be connected to its system at higher steps.

The building codes are explained in more detail below.

1.3.7.1 BC Energy Step Code

The BC Energy Step Code (Energy Step Code) is a component of the BC Building Code regulation. It is pivotal in shaping energy efficiency standards for new buildings. The Energy Step Code establishes performance targets that progressively enhance energy efficiency beyond the base building code requirements. The current mandate requires a significant increase in energy efficiency. While a provincial standard, the Energy Step Code grants significant authority to local governments who have the discretion to adopt progressively higher standards.

By 2030, the Energy Step Code will move towards net-zero ready performance for new buildings. Within the Energy Step Code, some local governments have implemented a tiered adoption that favours the use of electricity (i.e., lower efficiency requirements if using electricity). So far, 13 local governments have chosen to adopt the top step of the Energy Step Code. The implementation of tiered systems by local governments poses economic and regulatory challenges for FortisBC. FortisBC will need to navigate a complex landscape of local requirements, which may vary significantly across different jurisdictions.

1.3.7.2 Zero Carbon Step Code

The Zero Carbon Step Code was introduced on May 1, 2023 and it marks a further advancement in building standards, focusing on reducing GHG emissions. So far, 22[21] local governments have adopted the Zero Carbon Step Code. The Zero Carbon Step Code also outlines a stepped

[18] https://energystepcode.ca/zero-carbon/#:~:text=The%20Zero%20Carbon%20Step%20Code%20was%20first%20introduced%20in%20a,space%20and%20water%20heating%20systems.
[19] https://vancouver.ca/home-property-development/large-building-energy-requirements-forms-checklists.aspx.
[20] For example, switching to electricity or gas from other fuels.
[21] https://energystepcode.ca/implementation_updates/?mc_cid=5a98d3b26a&mc_eid=b774263037.

approach, ranging from basic emissions tracking to zero carbon performance. The Zero Carbon Step Code contains four staggered carbon performance tiers:[22]

1. Measure only (Emission level 1) – requires measurement of a building's emissions without reductions.
2. Moderate carbon (Emission level 2) – performance standard effectively means that either space heating or domestic hot water systems must meet zero carbon performance.
3. Strong carbon (Emission level 3) – performance standard effectively means that both space heating and domestic hot water systems are approaching zero carbon performance.
4. Zero carbon ready (Emission level 4) – performance standard means that both space heating and hot water systems must meet zero carbon performance.

Although currently optional, zero carbon performance will be required in new buildings by 2030. Zero carbon performance will eliminate the use of unabated natural gas for heating and hot water and require the use of low carbon resources; however, renewable and low carbon gases have not yet been identified as a compliance pathway within the code.

1.3.7.3 City of Vancouver Building Code

The City of Vancouver (COV), under the Vancouver Charter, possesses unique legislative powers, distinct from other BC local governments that are governed by the *Local Government Act*. The distinctive legal standing offers the COV more autonomy in various areas, including the ability to craft its own building code that can differ from the provincial standards. With its own charter, the COV has established a building code tailored to its sustainability objectives. This allows the COV to implement building requirements that are more stringent than those found in the BC Building Code, such as higher efficiency standards. While the BC Energy Step Code discussed above aims to make buildings net-zero ready by 2032, the COV has the authority to accelerate this timeline within its jurisdiction or implement even more ambitious energy performance requirements.

1.3.8 Low Carbon Fuel Standard

Initiated in 2008, the Low Carbon Fuel Standard (LCFS) seeks to reduce transportation-related emissions by incentivizing the integration of low-carbon alternative fuels into the market. As of January 1, 2024, the legislative basis of the LCFS is the *Low Carbon Fuels Act* and the *Low Carbon Fuels (General) Regulation*. Within the LCFS, low carbon fuels are those with a carbon intensity (CI) below annually determined targets, serving as a replacement for base fuels such as petroleum-derived gasoline or diesel. Suppliers of these fuels receive credits when they provide fuels with a CI below the set of targets and incur debits for supplying fuels exceeding those

[22] The Zero Carbon Step Code includes three GHG emissions compliance options (i.e., maximum GHG emissions by house; maximum GHG intensity plus maximum GHG emission by house; and by energy source) and is calculated using an emissions factor of 0.011kgCO_2e/kWh for electricity and 0.18kgCO_2e/kWh for natural gas. Currently, there is no carbon intensity figure included for RNG. RNG is currently treated the same as natural gas.

targets. Recent changes under the *Low Carbon Fuels Act* are geared towards facilitating greater GHG reductions and expanding the reach of the LCFS. With a move to a 30 percent CI reduction target by 2030, electrification is emerging as a significant compliance pathway. This shift is anticipated to have a notable impact on FBC's operations as fuel providers pivot towards serving electric vehicles to meet compliance obligations.

In early 2023, the Ministry of Energy and Mines and Low Carbon Innovation determined that out-of-province RNG (i.e., RNG that does not physically flow into BC) would not qualify as a compliance pathway within the LCFS framework. The exclusion of out-of-province RNG means that only in-province RNG is recognized and will generate credits under the LCFS framework, leading to two critical issues. First, there is a smaller available supply of in-province RNG compared to out-of-province sources over the near to mid term. Second, in-province RNG projects tend to be smaller in scale. This creates a limitation on the amount of RNG available for natural gas for transportation, which impacts NGT customers who would benefit financially through the LCFS by using out-of-province RNG. Using RNG allows these customers to lower their carbon intensity, thereby increasing the number of credits they can obtain under the LCFS. Given the current high price on LCFS credits, fleets running on RNG expect to recover significant value from the generation and sale of credits. However, the exclusion of out-of-province RNG challenges the viability and scalability of RNG for transportation under the LCFS, as it limits the potential for generation credits by restricting access to a broader RNG supply that could facilitate greater CI reductions.

1.4 *ENERGY TRANSITION IMPACTS ON FEI AND FBC*

1.4.1 Energy Transition Impacts on FEI

FEI's focus continues to be on reducing emissions while also providing safe, affordable, reliable, and resilient service to customers. The development and refinement of climate policy has led to uncertainty over what the future role of the gas system will be. Provincial policy is driving towards reducing emissions by 40 percent by 2030 and 80 percent by 2050, with ambitions to achieve Net Zero emissions across BC's economy. The most direct impacts of this policy environment on FEI are the potential for a decline in customer attachments, lower throughput through energy efficiency requirements, and increased cost pressures for customers due to investments in emissions abatement (e.g., investments in renewable and low carbon gas and energy efficiency initiatives).

To better understand strategies for achieving net zero, a significant amount of research has been conducted across North American jurisdictions. Recently, the Low Carbon Resource Initiative (LCRI) undertook a meta-analysis of leading studies to evaluate and understand their commonalities, including with respect to infrastructure. They found that gas infrastructure can play a key role:

> Pipeline gas infrastructure capacity must be maintained and modernized to support the reliable delivery of gas for peak energy needs, as well as the use of low-carbon

> fuels in the gas system. Reduced methane emissions rates from gas production and distribution will be essential to minimize the greenhouse gas impacts of the system.[23]

While the long-term role for gas infrastructure remains somewhat uncertain, FEI agrees with the LCRI's findings that gas infrastructure is a critical element of a decarbonized energy system. In particular, gas infrastructure has unique properties that serve the cold-weather energy demand profile due to its ability to cost-effectively store and deliver significant volumes of energy seasonally.[24] This strength plays a vital role in meeting peak energy demand during cold weather events and may prove even more important in the future given the weather-driven impacts being observed on BC's hydro-electric resources. In addition, gas infrastructure brings renewable and low carbon fuels that are crucial for addressing hard-to-decarbonize sectors such as the high intensity heat required by the industrial sector, or the energy density required by heavy-duty, long-distance transportation. Lastly, gas infrastructure can provide access to scalable supplies of low carbon energy, such as hydrogen, that will be required to meet BC's growing energy needs in a decarbonized future. Maintaining and preparing the gas system for future uses and challenges in the energy transition remains a key priority for FEI as there are over 1.1 million customers that rely on FEI's services for their energy needs.

1.4.2 Energy Transition Impacts on FBC

Although FBC serves a smaller segment of the Province's electrical load than BC Hydro, FBC will nonetheless play a vital role in BC's energy future. To that end, FBC is focused on keeping pace with the growing demand for electricity in a constantly evolving operating environment. Policies are increasingly promoting the use of electricity, including in home heating, light duty transportation and industrial processes. Electrification of heating demand in particular poses a significant challenge to the electric grid which lacks the capacity to shoulder peak heating demand on its own. Electrification demands from all sectors of the economy would therefore exceed what the grid is currently designed for and challenge FBC to maintain reliability, resiliency, and affordability.

FBC sees hybrid heating systems[25] as a potential solution to moderate the growth in peak capacity requirements and the infrastructure needed to support it. Even if FBC is successful in avoiding some or all of the peak heating impacts of electrification, the current policy environment will inevitably drive increased annual demand for electricity. Expanding FBC's infrastructure to keep up with demand, while also managing the impacts of a changing climate, will require significant resources in all areas of the business environment. Being proactive in addressing these challenges is essential for FBC.

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[23] Low Carbon Resource Initiative: LCRI Net-Zero 2050: U.S. Economy-Wide Deep Decarbonization Scenario Analysis. December 2022. https://www.epri.com/research/products/000000003002024993.

[24] Today, approximately two-thirds of the energy delivered during the winter peak is provided by the gas system in BC.

[25] A hybrid heating system consists of an electric heat pump, gas furnace and common controls. The electric heat pump is used for shoulder season heating while the gas furnace is used to heat during the colder winter period, thereby avoiding adding significant peak heating demand to the electric system.

1.4.3 Flexibility is Vital to Both FEI and FBC

Despite differing impacts on gas and electric operations from the energy transition, FortisBC has filed one common Rate Framework application. This is because the flexibility inherent in the proposals in this Application are designed to allow for increases and decreases in both cost and demand levels driven by the energy transition. In Section B3.2 of the Application, FortisBC describes how the specific elements of the Rate Framework address the energy transition and other influences in the Companies' operating environments.

FortisBC's priority remains on delivering safe, reliable, and affordable energy in an increasingly low carbon future. The sections below describe the impacts of the energy transition on affordability for the critical energy needs of customers, and how population growth, the energy transition and environmental influences more broadly are requiring increased investments and greater diligence to maintain a safe, reliable, and resilient system.

1.5 *ENERGY AFFORDABILITY INCREASINGLY CHALLENGED*

Energy affordability for FortisBC's customers is top of mind in a period of rising inflation and the impacts of the energy transition on customer energy costs. There are significant costs required to enable the energy transition that negatively impact affordability, such as:

- Increased costs related to investment in emissions reduction, such as the costs of acquiring renewable and low carbon fuels;
- Increased costs related to expanding electrical generation, transmission and distribution infrastructure to meet growing demand, while also maintaining a clean electricity portfolio;
- Increased costs related to investments in climate adaptation and resilience; and
- Rate pressures due to the potential for reduced throughput and a decline in customer additions on the gas system, resulting in increased costs per customer.

Ultimately, the pace of the energy transition must align with customers' ability to afford the increased costs associated with the transition. To help address this challenge, FortisBC's gas and electric operations are seeking to manage costs and invest in the most affordable ways by:

- Continuing with an indexed-based formula approach for the majority of O&M costs and for FEI growth capital, limiting spending in these areas and maintaining a cost-control focus;
- Increasing investment in energy efficiency programs aimed at reducing customers' energy consumption;
- Optimizing energy supply portfolios to reduce customer costs;
- Pursuing a diversified approach to long-term planning to manage affordability and optimize the use of gas and electric infrastructure;

- Carefully considering the need for capital investments and available project alternatives, including considering whether there are smaller incremental investments to increase future optionality as the energy transition evolves;
- Balancing the need to be proactive in building capacity with the expected timing of demand on the system;
- Adding new sources of revenue through serving non-traditional markets, like transportation end uses; and
- Focusing on customer retention and growth.

FortisBC will continue to explore and further develop these avenues, advocating on behalf of customers for lower cost energy transition pathways that utilize existing capacity and minimize the need for new capacity additions, whether for gas or electric.

Understanding where additional customer support is needed, and can be provided, is key to the success of the clean energy transition. The provincial government can play a key role in assisting with the affordability of the energy transition, whether through managing the pace or by assisting utilities or customers directly. In April 2022, the Energy Affordability Working Group, comprised of representatives from the BC Ministries of Energy, Mines and Low Carbon Innovation, Social Development and Poverty Reduction and Indigenous Relations and Reconciliation, as well as BC Hydro, convened a stakeholder discussion on household energy affordability in BC. Stakeholders were asked to provide feedback on the issues specific to each stakeholder group and how the Province could provide energy affordability programs to help customers. FortisBC had the opportunity to respond and emphasized the need for an energy agnostic approach to program design to enable support for customers using both electricity and gas. FortisBC also requested that additional funding be allocated to existing energy affordability programs and emphasized the need for a long-term solution based on customer needs and circumstances. The Companies will continue to advocate for assistance for those customer segments most significantly impacted.

1.6 *CONTINUING TO PROVIDE SAFE, RELIABLE AND RESILIENT SERVICE*

The energy transition has highlighted the critical interrelationships between the gas and electric systems. Both systems need to be able to provide dependable service to customers during times of peak demand, whether driven by load growth or by shifts in energy use between systems, or between times of the year, week, day, or hour. Both systems need to be resilient in the face of heightened physical and cyber security risks and climate change.

The following subsections discuss some of the challenges that FEI and FBC share, followed by specific discussions relevant to each Company.

1.6.1 Physical and Cyber Security and Climate Adaptation

There is an elevated risk to the gas and electric systems related to physical and cyber security as well as extreme weather events. Increased activism and geopolitical instability have increased

the potential for bad actors to engage in targeted disruption of energy systems. This increases the need for investment in physical and cyber security for both FEI and FBC to maintain the safety and reliability of the Province's energy systems. Additionally, the increasing frequency of extreme weather events has created additional risk to energy infrastructure, and FEI and FBC must invest to ensure their systems are resilient and adaptable in response. Finally, there are new and increasing obligations around environmental stewardship and sustainability that apply to both utilities.

1.6.1.1 Enhancing Physical and Cyber Security

Protection of assets and the provision of reliable energy services to customers continues to be a top priority for FortisBC. In an environment that is constantly evolving and transforming, it is critical that the Companies' systems be able to respond to new and emerging threats. FortisBC's corporate security risk management program is a risk-based approach that requires continuous improvement and monitoring to address the changing threat landscape.

FortisBC will continue to strengthen its emergency management and business continuity portfolios in response to these threats, as well as to meet the growing regulatory requirements and to support ongoing diligence in preparedness, mitigation, and response to emergencies and continuity events.

To address the anticipated growth in corporate cyber and physical threats affecting energy companies, FortisBC will need to further enhance its security operations, including a focus on technologies that improve monitoring and standardization across sites and security systems.

Further information related to FortisBC's proposed physical and cyber security O&M and capital expenditures is provided in Sections C2.2.4.3 and C2.3.4.3 for O&M and C3.3.3.4 and C3.4.3.4 for Capital.

1.6.1.2 Climate Change Operational Adaptation

The potential impacts of climate change are key drivers behind the energy transition. Changing weather patterns within FortisBC's service territories have the potential to impact the operation of existing and future gas and electric assets, increasing operational risk and, if left unaddressed, leading to safety and reliability consequences. FortisBC's Climate Change Operational Adaptation (CCOA) work aims to improve asset and operational resilience to climate change risks and to maintain safe and reliable energy supply to customers. In 2023 and 2024, as part of its initial CCOA development work, FortisBC is evaluating the risk of climate-related events to its various asset types. These events include wildfires, flooding, sea-level rise, windstorms, snowstorms, extreme temperature, landslides, lightning, and freeze-thaw events. The results of this initial risk assessment, along with additional investigations where required to confirm the impacts of certain climate-related events, will inform FortisBC's next steps as they are applied to specific assets to determine the risk associated with these various events over time. Where unacceptable risk levels exist, mitigation plans can be developed and proposed to address these risks to maintain resilience in the face of changing climate conditions.

A critical component of the Province's long-term transition to cleaner energy is the continued reliability and resilience of both the gas and electricity systems. British Columbians rely significantly on BC's gas systems to deliver energy at peak winter heating times. For instance, on January 12, 2024, one of the coldest days experienced in BC, FEI's gas system delivered approximately twice the energy of BC's electricity system, setting a new peak demand record. Similar peak demand events occurred in December 2021 and 2022, demonstrating that while the climate is warming overall, the need for reliable capacity at peak demand times is a function of weather extremes and is in fact increasing, rather than decreasing.

FBC has also experienced extreme temperatures in its service territory, including new winter peaks and record low temperatures in the extreme winter conditions noted above, but also record peaks in recent summer seasons. In 2021, a warm weather event (known as the heat dome) settled over western Canada, resulting in several days of record high temperatures. Further, in 2023, many areas of the Province, including in FBC's service area, again broke high temperature records contributing to conditions which resulted in wildfires burning the most hectares of forest and land (2.84 million hectares) in a wildfire season in BC's recorded history. In addition, BC has experienced prolonged drought conditions, including during the winter months, which has led to low snow levels and lower hydro-electric storage resources.

These weather conditions present increased challenges for FortisBC's infrastructure and energy resources.

1.6.1.3 Environment and Sustainability

Both FEI and FBC have obligations related to environmental stewardship and sustainable operations that are expected to increase over the coming years. There are also specific requirements for each utility owing to the differences in operating circumstances and locations.

Regulatory requirements contained in legislation such as the *Fisheries Act*, *Species at Risk Act*, *Water Sustainability Act*, *Environmental Management Act*, *Declaration on the Rights of Indigenous Peoples Act*, and *Heritage Conservation Act*, among others, are influencing the way that FortisBC conducts its day-to-day operations. These regulatory requirements impact the planning and execution of work in such areas as environmental management, archaeological permitting, fisheries assessment, and invasive species prevention.

Specific proposals in this area are detailed in Sections C2.2.4.2 and C2.3.4.2 of the Application.

1.6.2 Continued Investment in the Gas System

FEI continues to need to invest in the reliability, integrity, and security of its system, both to serve existing customers and for future growth. While new customer attachments have declined in recent years, replacing conventional natural gas with renewable and low carbon gases requires that FEI's assets continue to remain operational and in good order. An aging system requires investments to continue to provide safe, reliable, and resilient service throughout the ongoing energy transition.

Each of these influences is discussed below.

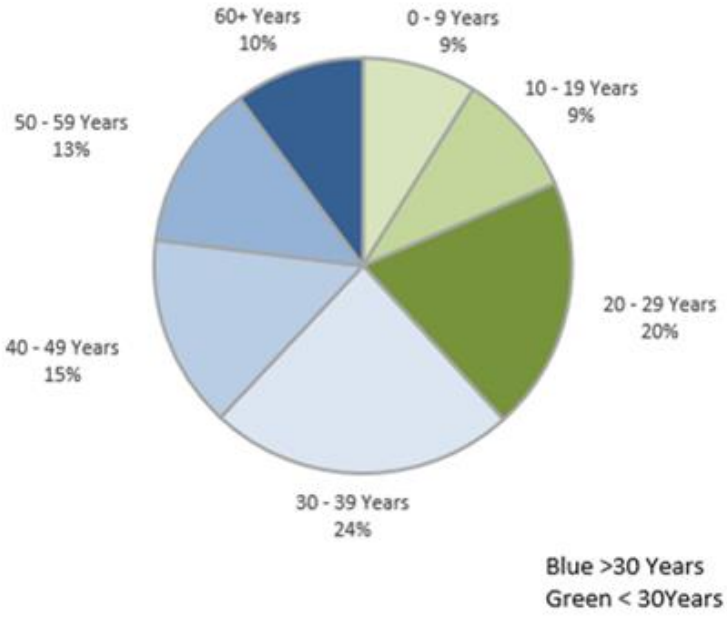
1.6.2.1 Continued Customer Attachments

British Columbia continues to grow in population and FEI continues to experience new customer attachments each year, though over the past three years, the number of new gross customer attachments has been declining, from approximately 20 thousand in 2021 to less than 16 thousand in 2023. FEI expects this trend to continue in 2024, with gross customer attachments projected to be in the range of 11 to 12 thousand. Given the range of future scenarios within the energy sector, construction industry, and municipal and governmental rules and restrictions, the growth trajectory for future years remains unpredictable. This unpredictability, combined with the policies discussed in Section B1.3, will impact gross customer attachments. FEI has proposed a formulaic approach to Growth capital that is responsive to changes in customer attachments to manage this uncertainty.

1.6.2.2 Aging Infrastructure

FEI's existing infrastructure is aging and requires increased (e.g., more frequent) maintenance. Maintaining its assets and optimizing lifecycle costs is particularly important to support affordable, safe, and reliable service to customers. While there is uncertainty about how the energy transition will unfold, FEI's gas assets remain an important part of BC's energy mix. Ensuring the gas system continues to be well-maintained supports the transition towards cleaner energy sources and helps minimize the need to build out new energy assets. As shown in the following figure, 62 percent of FEI's transmission and distribution assets were over 30 years old in 2023, compared to 48 percent in that same age group five years ago. FEI's planned Sustainment capital spending over the Rate Framework term is described in Section C3.3.2.

Figure B1-1: Age of FEI's Transmission and Distribution Assets (Approx. 51,000 km, % Basis)



1.6.2.3 Renewable and Low Carbon Fuel Supply

The integration of RNG and hydrogen supply into FEI's existing gas assets signifies a progressive shift toward cleaner and more sustainable energy sources. These adaptations are fundamental in aligning FEI's infrastructure with the evolving landscape of renewable energy. While this transition provides long-term environmental benefits, it requires additional operations and maintenance resources which include not only the direct expenses linked to integrating new technologies, but also forward-looking investments in training, infrastructure adjustments, and maintenance procedures. These initiatives are essential to ensure a smooth energy transition, supporting safe, reliable, and efficient energy supply while promoting sustainable energy solutions.

1.6.3 Increasing Investment in the Electric System

With the implementation of CleanBC, dependence on FBC's system is expected to increase, particularly at peak demand times. As a result, the entirety of the FBC system, from generation to local distribution infrastructure and the necessary support systems, will require investment to address both the ability to accommodate load growth (through growth capital expenditures), and the ability of the existing infrastructure to support current and increasing levels of demand. FBC discusses the impacts of continued growth and the need to address aging infrastructure below.

1.6.3.1 Continued Growth

FBC will see increasing load over the term covered by the Rate Framework. This growth results from both customer additions and from the movement away from fossil fuels to renewable and low carbon energy, including electricity. FBC expects the addition of approximately 2,400 new customer attachments per year and to grow at an average annual growth rate of 0.8 percent per year over the next 20 years. Along with the increase in the number of customers, FBC expects load to increase as a result of the growth in EV sales in the FBC service area, which is expected to play a significant role in the demand for electricity, and an increase in large load additions and decarbonization through hydrogen and RNG production. The electrification of existing heating load, and an increasing percentage of new heating installations being electricity-based, will also increase demand and place stress on the electric infrastructure.

FBC supports load growth through capital expenditures categorized as either Growth – consisting of new infrastructure required to increase system capacity, or Sustainment – which includes system improvements to the transmission and distribution system to maintain existing equipment to meet forecast load and for the safety, reliability, and quality of the system.

Growth and Sustainment related projects are described in Sections C3.4.1 and C3.4.2, respectively. Growth and Sustainment capital expenditures during the 2025 – 2027 period are forecast to increase markedly relative to recent years due in large part to accommodate increasing loads in the context of a relatively constrained system.

1.6.3.2 Aging Infrastructure

As with FEI, FBC has a number of assets that require upgrades or replacements due to age-related condition. FBC has proposed to address age-related condition issues through a number of capital projects and programs, which are discussed in Section C3.4.2 of the Application. Some elements of the electric system have long service lives and, while they have provided reliable and cost-effective service for decades, require replacement. This is particularly the case for substation transformers, a number of which require attention during the 2025 to 2027 period.

Replacement of aging underground and overhead conductors and aging camera infrastructure is required, and a number of 1980's vintage pad-mount switchers in critical locations are near end of life. The FBC generation plants range in vintage from 92 to 117 years old – and FBC is proposing a number of necessary projects to address the condition of its generation assets.

1.7 *CONCLUSION*

The energy transition and related policies are having a significant impact on FortisBC's operational environment. FortisBC has considered these policies and the impacts of the energy transition on both FEI and FBC in the context of designing its Rate Framework. FortisBC is committed to evolving its operations and strategies to meet the demands of the energy transition, focusing on the Companies' emissions reductions, keeping pace with growing electricity demands, and ensuring affordability and resilience for customers.

2. EVALUATION OF THE CURRENT MULTI-YEAR RATE PLAN, JURISDICTIONAL COMPARISON AND STAKEHOLDER FEEDBACK

2.1 INTRODUCTION

In addition to the impacts of the energy transition on the Rate Framework, FortisBC has also considered how its current Multi-year Rate Plan (Current MRP) has performed, developments in other jurisdictions, and the feedback received from stakeholders. This section summarizes these considerations:

- Section B2.2 provides a description and evaluation of FortisBC's Current MRP;
- Section B2.3 summarizes developments in other jurisdictions; and
- Section B2.4 discusses the feedback received from stakeholders.

2.2 EVALUATION OF THE CURRENT MULTI-YEAR RATE PLAN

The FortisBC's Current MRP was approved by Orders G-165-20 and G-166-20 on June 22, 2020 (MRP Decision). A summary of the main features of the Current MRP is provided in Table B2-1 below.

Table B2-1: Main Features of the Current MRP

Item		FEI MRP	FBC MRP
Process		Written hearing	
Term		Five years (2020-2024)	
Formula	O&M	$OM_t = UCOM_{t-1} * [1 + (I-X)] * [(AC_t - AC_{base\ year}) \times 75\% + AC_{base\ year}] + True\ Up_{t-2}$ UCOM = Unit Cost O&M I = I-Factor X = X-Factor Base year = The base year actual for starting UCOM (2019) AC = Average Customer True Up = Actual Average Customer from two years prior	
	Capital	$Growth\ Capital_t = UCGC_{t-1} * (1+(I-X)) * (GCA_t) + True\ Up_{t-2}$ UCGC = Unit Cost Growth Capital GCA = Gross Customer Additions	N/A

Item	FEI MRP	FBC MRP
Forecast of Regular Capital	Sustainment and Other Capital	Growth, Sustainment and Other Capital
I-Factor	Composite index (consisted of BC-AWE and BC-CPI) with specific weightings to be calculated each year for FEI and FBC	
X-Factor	Fixed at 0.5% for the MRP term	
Flow-through (Y-Factor)	Certain categories of expenses, revenue and capital are forecast annually and the variances between forecast and actual amounts are recorded in the Flow-through deferral account or other deferral accounts	
Z-Factor	Available for prudently incurred costs caused by exogenous factors	
	Materiality threshold: $500 thousand	Materiality threshold: $150 thousand
Earnings Sharing Mechanism (ESM)	50/50 symmetric sharing for variances between achieved ROE and allowed ROE	
Off-ramp	Off ramp triggered if earnings in any one year varies from approved ROE by more than +/- 150 bps (post sharing)	
Earnings Carryover Mechanism (ECM)	FortisBC could apply for approval of an ECM at any time in the last three years of the term, either in advance or following the action/initiative giving rise to savings beyond the term. The annual net savings identified under this ECM would be shared equally for a maximum of three years following the end of the term	
Incremental Capital	CPCNs or other Major Projects are approved separately	
	Materiality threshold of $15 million	Materiality threshold of $20 million
Service Quality Indicators (SQIs)	Nine SQIs and four informational indicators	Eight SQIs and four informational indicators

The Current MRP is in effect until the end of 2024 and actual performance for 2024 is not yet known. However, rates for each year of the Current MRP have been approved, and a summary of those rates is provided below. This is followed by an analysis of how the Current MRP has delivered on the anticipated benefits.

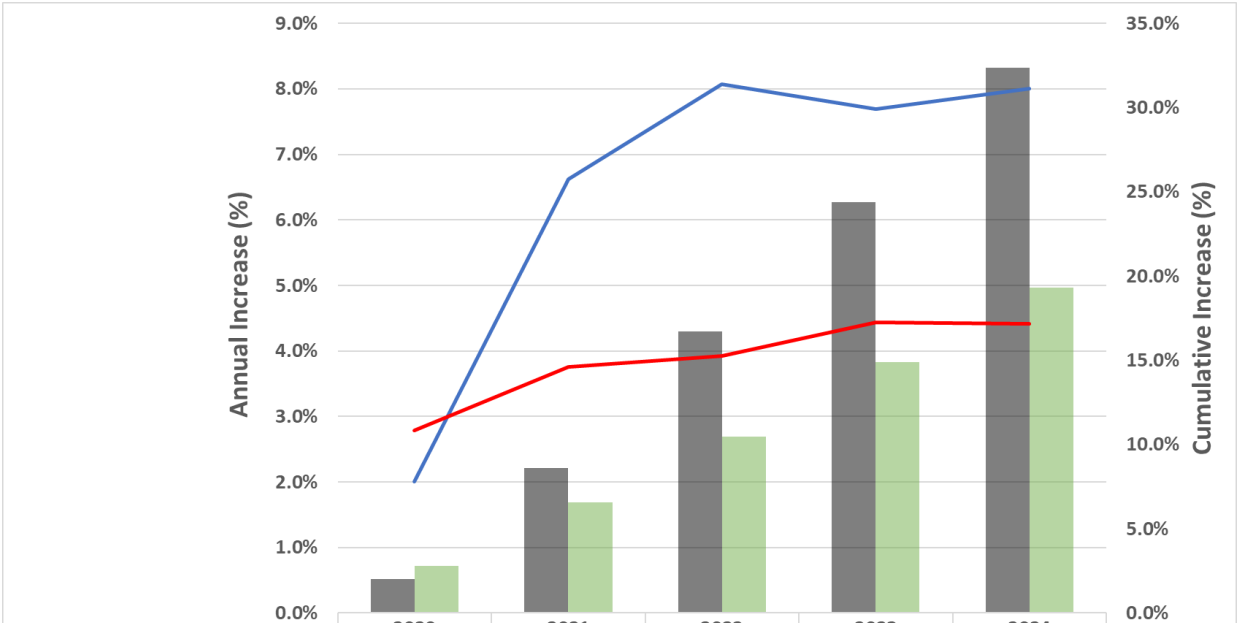
2.2.1 Rate Trend

The growth trend in rates has been a helpful indicator of the performance of FortisBC's multi-year rate plans in the past. The Current MRP, however, has seen unprecedented pressure on rates for both gas and electric operations, driven by factors that are external to FortisBC's operations. These include the energy transition impacts, as discussed in Section B1, and the impacts of the COVID-19 pandemic, which has contributed to a high inflationary environment and supply chain shortages. In addition, both Companies' 2024 rates reflect some impact from the increase in the cost of capital approved by the BCUC which was effective January 1, 2023, but for which rate recovery began in 2024.

2.2.1.1 FEI Delivery Rates

Figure B2-1 below compares FEI's delivery rate trend with the composite Inflation Factor[26] used in the Current MRP formulas. The figure shows that FEI's average annual delivery rate growth from 2020 to 2024 is approximately 6.5 percent, exceeding the average Inflation Factor during the same period which was approximately 3.9 percent. The impact on customer bills is lower since delivery rates comprise approximately 50 to 60 percent of FEI's total annual revenue requirement. For the average residential customer with 90 GJ of annual consumption, the total bill increase was approximately 20.7 percent over the term of the Current MRP, an average annual increase of 4.1 percent when accounting for all of the commodity-related charges as well as all rate riders[27]. This is comparable to the cumulative increase in the Inflation Factor over the same period at 19.3 percent, or an average of 3.9 percent per year. Further, as explained below, the more significant drivers of the delivery rate increases have been the broader inflationary impacts of the COVID-19 pandemic, the impact on rates as approved Major Projects enter rate base, and the increase in FEI's cost of capital.

Figure B2-1: FEI Delivery Rate Changes During the Current MRP Term



	2020	2021	2022	2023	2024
FEI Delivery Rate (Cumulative)	2.0%	8.6%	16.7%	24.4%	32.4%
CPI/AWE (Cumulative)	2.8%	6.5%	10.5%	14.9%	19.3%
FEI Delivery Rate	2.0%	6.6%	8.1%	7.7%	8.0%
CPI/AWE	2.8%	3.8%	3.9%	4.4%	4.4%

[26] The Inflation Factor is weighted for labour (BC AWE) and non-labour (BC CPI). These weightings are adjusted each year for the prior year actual labour and non-labour percentages.

[27] Commodity related charges include Cost of Gas and Storage & Transport charges. Rate riders include the Basic Charge CGIF Rate Rider 2, Biomethane Variance Account (BVA) Rate Rider 3, RSAM Rate Rider 5, and Midstream Cost Reconciliation Account (MCRA) Rate Rider 6. The total bill increase noted does not include carbon tax, municipal operating fees, ICE Levy, or GST.

Table B2-2 below provides a breakdown of the impact of various drivers on FEI's delivery rates from 2020 to 2024, using a grouping that is consistent with that provided during each Annual Review, and including a subtotal before approved rate smoothing impacts.

Table B2-2: FEI's Delivery Rate Increases by Key Driver During the Current MRP Term

Particular	2020	2021	2022	2023	2024	Total
Volume/Revenue Related						
Demand Forecast	(0.64%)	(1.13%)	(0.26%)	(1.67%)	(0.70%)	(4.39%)
Demand Forecast - BCH IG	-	-	-	1.62%	-	1.62%
Other Revenue	0.90%	(0.53%)	0.04%	(0.04%)	(0.04%)	0.32%
O&M Related						
Formula	1.39%	1.09%	1.21%	1.22%	1.05%	5.96%
Forecast (Clean Growth)	0.01%	0.07%	(0.03%)	0.07%	0.23%	0.35%
Forecast (BCUC, Pension/OPEB, Insurance, Integrity)	2.04%	0.36%	(0.97%)	0.36%	(0.10%)	1.69%
Rate Base Growth						
Regular Capital, net of Accumulated Depreciation	1.33%	0.75%	0.64%	0.79%	0.23%	3.74%
Major Projects, incl. Depreciation and Income Tax	3.93%	0.92%	1.06%	2.39%	0.64%	8.95%
Clean Growth (NGT, Biomethane)	0.02%	0.03%	0.02%	0.20%	0.24%	0.52%
Unamortized Deferral	0.37%	(0.15%)	(0.09%)	0.54%	(1.40%)	(0.73%)
Working Capital, CWIP (No AFUDC)	(0.89%)	0.03%	0.12%	0.29%	(0.31%)	(0.76%)
Rebasing (2014-2019 PBR)	0.94%	-	-	-	-	0.94%
Depreciation and Amortization Related						
Depreciation	0.25%	1.07%	0.81%	0.92%	0.64%	3.67%
Deferral Amortization	(0.16%)	4.67%	2.14%	0.63%	1.35%	8.63%
Study Rate Change (Depreciation, CapOH, Salvage)	(1.97%)	-	-	-	-	(1.97%)
Financing and Return on Equity						
Financing Rate and Ratio Change	(1.47%)	(0.02%)	(0.38%)	0.28%	0.04%	(1.55%)
GCOC Stage 1 (G-236-23)	-	-	-	-	6.06%	6.06%
Tax Expense						
Income tax and Property Tax	(2.78%)	2.50%	(0.22%)	0.09%	1.59%	1.16%
Subtotal	**3.27%**	**9.64%**	**4.09%**	**7.69%**	**9.51%**	**34.20%**
Rate Smoothing						
Deferred Revenue/Deficiency	(1.27%)	(3.02%)	3.98%	-	(1.51%)	(1.82%)
Total Delivery Rate Change (w/ Rate Smoothing)	**2.00%**	**6.62%**	**8.07%**	**7.69%**	**8.00%**	**32.39%**

On an annual basis, the significant drivers of the delivery rate increases before considering rate smoothing impacts are described below.

2020 Delivery Rate Increase:

- The completion and capital additions of approximately $304 million related to the Lower Mainland Intermediate Pressure System Upgrade (LMIPSU) CPCN project for reliability and integrity in the Lower Mainland area.
- The approved incremental funding in year 1 of the Current MRP related to BCUC levies and integrity digs, along with increases in Pension & Other Post Employment Benefit (OPEB) costs.

2021 Delivery Rate Increase:

- An increase in deferral amortization along with increased income tax expense accounted for most of the increase in 2021. The deferral amortization increase was related to the elimination of the 2020 credit amortization of approximately $36.392 million from the 2014-2019 Flow-through deferral account.[28] Since the credit from the 2014-2019 Flow-through deferral account was fully amortized in 2020, it resulted in an overall increase in 2021. This increase in deferral amortization in 2021 also impacted income tax expense, as the income tax deduction was reduced due to the increase in amortization.

2022 Delivery Rate Increase:

- An increase in deferral amortization contributed approximately half of the increase, with a number of smaller items making up the difference. The deferral amortization increase was primarily related to the DSM deferral account ($6.933 million) and the 2020-2024 Flow-through deferral account ($11.417 million). The increase in amortization from the 2020-2024 Flow-through deferral account, which captures the variances between forecast and actual/projected from 2020 and 2021, was largely due to unfavourable commercial and industrial delivery margins which were impacted by the COVID-19 pandemic.[29]

2023 Delivery Rate Increase:

- Capital additions related to multiple Major Projects, including the Inland Gas Upgrade (IGU) project, Pattullo Gasline Replacement (PGR) project, and the Coastal Transmission System – Transmission Integrity Management Capabilities (CTS-TIMC) project, resulted in a combined capital addition to FEI's rate base in 2023 of approximately $245 million.
- The loss of revenue from FEI's contract with BC Hydro for the Island Generation (IG) facility resulted in a deficiency of approximately $15.7 million.

2024 Delivery Rate Increase:

- The BCUC issued Decision and Order G-236-23 regarding Stage 1 of the Generic Cost of Capital (GCOC) proceeding, resulting in increases in FEI's deemed equity thickness and return on equity (ROE) to 45 percent and 9.65 percent, respectively. The 2024 delivery

[28] As explained in Section 14.3 of FEI's Annual Review for 2020 and 2021 Delivery Rates, the credit amortization in 2020 from the 2014-2019 Flow-through deferral account was related to the variances in 2018 and 2019 between forecast/projected and actuals. The credit variances were primarily due to higher delivery margin revenue, lower income tax, and lower depreciation expense in 2018 and 2019. These credit variances were fully amortized in 2020, thus resulting in an increase in deferral amortization expense in 2021.

[29] The demand forecast for 2020 and 2021 was completed in early 2020 as part of FEI's Annual Review for 2020 and 2021 Delivery Rates, filed with the BCUC in August 2020. At that time, the impact of the COVID-19 pandemic on FEI's recoveries from commercial and industrial customers was not foreseen, resulting in a large variance between forecast and actuals for both 2020 and 2021. These variances were captured in the Flow-through deferral account and recovered through amortization of the Flow-through deferral account in 2022.

rates include only part of the impact, with the remaining impact captured in the 2023-2024 Revenue Deficiency deferral account.[30]

- Increases in income taxes and property taxes, partly due to the phase-out of Canada's Accelerated Investment Incentive starting in 2024, which resulted in reduced income tax deductible through capital cost allowance (CCA).

Table B2-3 below shows that, when excluding items that were approved outside of the Current MRP, the cumulative increase in FEI's delivery rate is equal to approximately 13.2 percent, which is approximately two-thirds of the cumulative inflation at 19.3 percent (i.e., composite CPI/AWE as shown in Figure B2-1 above).

Table B2-3: FEI's 2020-2024 Delivery Rate Increases Excluding Non-MRP Impacts

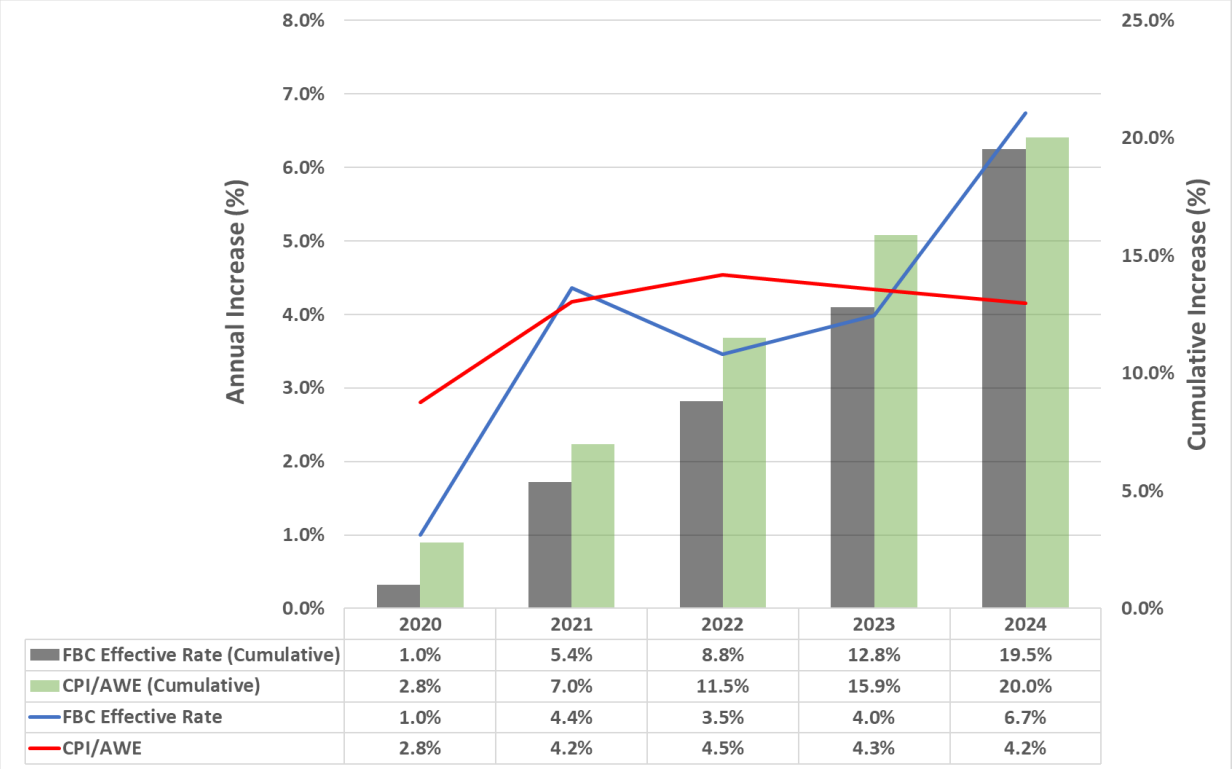
	2020	2021	2022	2023	2024	Total
Delivery Rate Changes (w/o Rate Smoothing)	3.27%	9.64%	4.09%	7.69%	9.51%	34.20%
Less: Non-MRP Related Items/Impacts Identified						
Major Projects (e.g. CPCN)	(3.93%)	(0.92%)	(1.06%)	(2.39%)	(0.64%)	(8.95%)
Elmination of 2014-2019 (PBR) Flow-Through Credit in 2021		(6.04%)				(6.04%)
GCOC Stage 1 (G-236-23)					(6.06%)	(6.06%)
Delivery Rate Changes (MRP Framework Only)	**-0.66%**	**2.68%**	**3.02%**	**5.30%**	**2.81%**	**13.15%**

2.2.1.2 FBC Rates

Figure B2-2 below compares FBC's rate trend[31] with the composite Inflation Factor used in the Current MRP formula. Overall, the rate increases for FBC during the term of the Current MRP were generally in line with the Inflation Factor (composite CPI and AWE). The figure shows that the cumulative increase in FBC's rates for 2020 through 2024 is approximately 19.5 percent, which is equivalent to an average increase of 3.9 percent per year, while the cumulative increase in the Inflation Factor during the same period is approximately 20.0 percent, which is equivalent to an average increase of 4.0 percent per year. Further, as explained below, the more significant drivers of the rate increases have been the broader inflationary impacts of the COVID-19 pandemic, increases in power supply expense, the impact on rates as approved Major Projects enter rate base, and the increase in FBC's cost of capital.

[30] Decision and Order G-236-23, p. 50.
[31] FBC's rates include power supply costs.

Figure B2-2: FBC Rate Changes During the Current MRP Term



	2020	2021	2022	2023	2024
FBC Effective Rate (Cumulative)	1.0%	5.4%	8.8%	12.8%	19.5%
CPI/AWE (Cumulative)	2.8%	7.0%	11.5%	15.9%	20.0%
FBC Effective Rate	1.0%	4.4%	3.5%	4.0%	6.7%
CPI/AWE	2.8%	4.2%	4.5%	4.3%	4.2%

Table B2-4 below provides a breakdown of the impact of various drivers on FBC's rates from 2020 to 2024, using a grouping that is consistent with that provided during each Annual Review, and including a subtotal before approved rate smoothing impacts.

Table B2-4: FBC's Rate Increases by Key Driver During the Current MRP Term

Particular	2020	2021	2022	2023	2024	Total
Volume/Revenue Related						
Demand Forecast	2.07%	(1.29%)	0.96%	(3.05%)	(0.54%)	(1.84%)
Other Revenue	(0.38%)	(0.42%)	0.10%	(0.10%)	0.03%	(0.77%)
Power Supply						
Power Supply Expense	(1.45%)	1.63%	0.07%	4.95%	2.67%	7.87%
O&M Related						
Formula	0.85%	0.57%	0.87%	0.85%	0.50%	3.65%
Forecast (Clean Growth - EV)	-	-	0.04%	0.01%	0.02%	0.07%
Forecast (BCUC, Pension/OPEB, Insurance)	(0.15%)	0.14%	(0.30%)	0.09%	(0.19%)	(0.41%)
Rate Base Growth						
Regular Capital, net of Accumulated Depreciation	0.25%	0.38%	0.73%	0.34%	0.49%	2.19%
Major Projects, incl. Depreciation and Income Tax	0.67%	1.28%	1.32%	1.29%	0.16%	4.71%
Unamortized Deferral	0.11%	0.09%	0.08%	0.15%	0.18%	0.61%
Working Capital, CWIP (No AFUDC)	0.08%	0.00%	0.14%	0.22%	(0.13%)	0.31%
Rebasing (2014-2019 PBR)	0.48%	-	-	-	-	0.48%
Depreciation and Amortization Related						
Depreciation	(0.66%)	0.61%	0.59%	0.42%	0.57%	1.55%
Deferral Amortization	1.44%	2.06%	(1.04%)	(1.25%)	0.39%	1.59%
Study Rate Change (Depreciation, CapOH, Salvage)	0.60%	-	-	-	-	0.60%
Financing and Return on Equity						
Financing Rate and Ratio Change	(0.64%)	(0.01%)	(0.79%)	0.64%	0.07%	(0.74%)
GCOC Stage 1 (G-236-23)	-	-	-	-	1.45%	1.45%
Tax Expense						
Income tax and Property Tax	(0.90%)	0.96%	(0.71%)	(0.60%)	1.08%	(0.16%)
Subtotal	**2.36%**	**6.00%**	**2.06%**	**3.98%**	**6.74%**	**21.15%**
Rate Smoothing						
Deferred Revenue/Deficiency	(1.36%)	(1.64%)	1.41%	-	-	(1.59%)
Total Rate Change (w/ Rate Smoothing)	**1.00%**	**4.36%**	**3.47%**	**3.98%**	**6.74%**	**19.55%**

On an annual basis, the significant drivers of the rate increases, before considering rate smoothing impacts, are described below.

2020 Rate Increase:

- Reduced demand, partly offset by a decrease in power supply expense.
- Reduced credit amortization in 2020 from the 2014-2019 Flow-through deferral account that was approved for the previous PBR term.

2021 Rate Increase:

- Capital additions related to Major Projects totalled approximately $40.4 million, including the Corra Linn Dam Spillway Gates Replacement (Corra Linn) project, the Upper Bonnington Old Units Refurbishment (UBO) project, and the Grand Forks Terminal Station Reliability (GFT) project.

- Deferral amortization resulting from the elimination of the 2020 credit amortization from the 2014-2019 Flow-through deferral account.[32] Since the credit from the 2014-2019 Flow-through deferral account was fully amortized in 2020, it resulted in an overall increase in 2021. This increase in deferral amortization also contributed to an increase in income tax expense.

2022 Rate Increase:

- Capital additions totalling to approximately $32.4 million related to the Corra Linn, UBO, and GFT projects.

2023 Rate Increase:

- Increased power supply costs, primarily due to greater reliance on energy supplied by BC Hydro through the Power Purchase Agreement (PPA) and corresponding reduced market and contracted power purchases.
- Major Project capital additions, including the Kelowna Bulk Transformer Addition (KBTA), Corra Linn, UBO and Playmor Substation Upgrade projects. The total capital additions added to FBC's 2023 rate base were approximately $45.4 million. These capital additions grew FBC's rate base and increased depreciation expense as well as income tax expense.

2024 Rate Increase:

- Increased power supply costs due to the same reasons as in 2023.
- The BCUC issued Decision and Order G-236-23 regarding Stage 1 of the GCOC proceeding, resulting in increases in FBC's deemed equity thickness and ROE to 41 percent and 9.65 percent, respectively.
- Increase in income tax expense, partly due to the phase-out of Canada's Accelerated Investment Incentive starting in 2024, which resulted in reduced income tax deductible through CCA.

Table B2-5 below shows that, when excluding items that were approved outside of the Current MRP, the cumulative rate increase is approximately half of the cumulative inflation at 20.0 percent (i.e., composite CPI/AWE as shown in Figure B2-2 above).

[32] As explained in Section 14.3 of FBC's Annual Review for 2020 and 2021 Rates, the credit amortization in 2020 from the 2014-2019 Flow-through deferral account was related to the variances in 2018 and 2019 between forecast/projected and actuals. The credit variances were primarily due to lower power purchase expense, lower income tax, and higher apparatus rental revenue in 2018 and 2019. These credit variances were fully amortized in 2020, thus resulting in an increase in deferral amortization expense in 2021.

Table B2-5: FBC's 2020-2024 Rate Increases Excluding Non-MRP Impacts

	2020	2021	2022	2023	2024	Total
Rate Changes (w/o Rate Smoothing)	2.36%	6.00%	2.06%	3.98%	6.74%	21.15%
Less: Non-MRP Related Items/Impacts Identified						
Major Projects (e.g. CPCN)	(0.67%)	(1.28%)	(1.32%)	(1.29%)	(0.16%)	(4.71%)
Elmination of Credit from 2014-2019 (PBR) Flow-Through	(1.90%)	(2.86%)				(4.76%)
GCOC Stage 1 (G-236-23)					(1.45%)	(1.45%)
Rate Changes (MRP Framework Only)	**-0.20%**	**1.86%**	**0.75%**	**2.69%**	**5.13%**	**10.23%**

2.2.2 Analysis of the Current MRP

In FortisBC's 2020-2024 MRP Application, the key elements of the rate plan were described as:

- A multi-year plan framework;
- Stable levels of O&M funding;
- Flexibility to innovate and adapt; and
- Incentive to invest in our future.

Below, FortisBC expands on each of these areas, and how the Current MRP has performed.

2.2.2.1 A Multi-year Rate Plan Framework

In the 2020-2024 MRP Application, FortisBC described the benefits of a multi-year rate plan framework as:

- Reduced regulatory costs and internal efficiencies associated with the streamlined regulatory process;
- Increased utility focus on managing the business with a long-term view; and
- Increased operational flexibility to address the increasing pace and growing scope of energy industry transformation.

In this regard, FortisBC believes the benefits over traditional cost of service regulation were largely achieved; however, as shown in Tables B2-6 and B2-7 below, the efficiencies in costs and effort expended in the Annual Review process have started to erode. In fact, the total number of information requests (IRs) combined for FEI and FBC in 2024 marked an increase to almost the same level as the number of IRs that FortisBC received in 2015, which was the first Annual Review of the 2014-2019 PBR Plan term.

Table B2-6: Comparison of Annual Review Proceeding Costs between the 2014-2019 PBR Plan Term and the 2020-2024 MRP Term[33]

	FEI Annual Reviews		FBC Annual Reviews	
Type of Regulatory Costs	2020-2024 MRP (Average)	2014-2019 PBR (Average)	2020-2024 MRP (Average)	2014-2019 PBR (Average)
BCUC Costs	16	24	14	23
Intevener PACA	76	40	100	40
Consulting and Legal	90	67	77	62
Other/Misc.	-	1	-	0
Total - Average ($000s)	**$ 182**	**$ 132**	**$ 190**	**$ 125**

Table B2-7: Comparison of Number of Annual Review IRs between the 2014-2019 PBR Plan Term and the 2020-2024 MRP Term

	Annual Reviews	Number of IRs		
		FEI	FBC	Total
2014-2019 PBR	2015	457	343	800
	2016	278	361	639
	2017	352	387	739
	2018	214	375	589
	2019	226	424	650
2020-2024 MRP	2020-2021	224	379	603
	2022	255	339	594
	2023	338	334	672
	2024	380	408	788

As FortisBC discusses further in Section C1.10, the Companies consider that a goal of the Rate Framework should be to find ways to streamline the Annual Review process; in particular, to better define and scope the information requests. Improved regulatory efficiency is important as it will allow the Companies to focus and dedicate the necessary resources to responding to the challenging and complex external environment, as was discussed in Section B1.

As illustrated in the tables above, although some of the regulatory efficiencies gained during the 2014-2019 PBR Plan term and the earlier years of the Current MRP have diminished, the improved regulatory efficiency in the early years of the Current MRP term allowed FortisBC to increase its focus on managing the utility business with a longer-term view.

[33] The first Annual Review for the 2014-2019 PBR Plan occurred for 2015 rates, with 2014 rates being set as part of the 2014-2019 PBR Plan Decision due to the length of the proceeding. The 2020 and 2021 Annual Reviews as part of the Current MRP were combined as one application.

From 2020 through 2023, FEI developed and filed an unprecedented number of regulatory applications and participated in numerous complex BCUC-initiated proceedings, including:

- Six large CPCN applications;
- The Revised Renewable Gas Program application;
- The 2022 Long Term Gas Resource Plan (LTGRP), which included the development of FEI's Diversified Energy Pathway and the Kelowna Electrification Study;
- The 2023 DSM Expenditures Plan and the 2024-2027 DSM Expenditures Plan applications;
- Stage 1 of the BCUC-initiated GCOC proceeding;
- BCUC-initiated inquiries and processes, including the Acquisition of RNG by Public Utilities and the Regulation of Hydrogen Energy Services;
- Annual Contracting Plans (ACPs), including a detailed ACP Compliance Report in 2020 which was directed by the BCUC subsequent to the Enbridge T-South rupture event in 2019;
- Approximately 30 applications for acceptance of biomethane purchase agreements (BPAs); and
- Approximately 70 applications for NGT/CNG fuelling services.

FBC also developed and filed numerous key applications during the 2020 to 2023 timeframe:

- Two CPCN applications;
- The 2021 Long Term Electric Resource Plan (LTERP);
- The rate design and rates for FBC's electric vehicle (EV) direct current fast charging (DCFC) service in 2021 and the application for energy-based rates in 2023;
- Participation in Stage 1 of the BCUC-initiated GCOC proceeding, in which FBC actively participated and filed evidence;
- The 2023-2027 DSM Expenditures Plan application;
- The development and filing of a Large Commercial Interruptible Rate application; and
- Annual Electric Contracting Plans.

These projects together provide a long-term vision for FortisBC, with a continuing focus on providing safe, reliable, and resilient service to customers while addressing the ongoing energy transition through an affordability lens. The efforts and resources required to complete these critical proceedings are supported by an efficient and streamlined rate setting environment.

A multi-year framework has afforded the operational flexibility to prepare and address the growing scope of the energy transition, including expanded effort in areas such as renewable and low

carbon gas development, NGT service, energy efficiency and conservation, and FBC's EV DCFC service. Further discussion on the flexibility of FortisBC's Current MRP to address the energy transition is provided in Section B2.2.2.3 below.

2.2.2.2 Stable Levels of O&M Funding

In the 2020-2024 MRP Application, FortisBC stated that, while it will continue to pursue productivity improvements, the rate plan should encourage FortisBC to increase its focus on addressing emerging challenges in its operating environment. To successfully achieve this, stable levels of O&M funding are required that are sufficient to address emerging pressures, provide certainty for plans and initiatives, and encourage utility management to focus on the efficient allocation of resources within the business over the term of the Current MRP.

Tables B2-8 and B2-9 show the formula O&M and the actual/projected savings for FEI and FBC, respectively. Both utilities continued to achieve savings through the productivity improvement factor (PIF) that is part of the formula (all savings benefit customers) as well as through reduced spending from the allowed formula amount (savings shared through the ESM). Furthermore, FortisBC's actual/projected formula-based O&M for both utilities has been relatively stable and consistent throughout the term of the Current MRP. As mentioned above, FortisBC's goal was to achieve an efficient allocation of resources available with stable levels of O&M funding. FortisBC considers this has been largely achieved for both utilities, with no decline in service levels in terms of safety and reliability as evidenced by the SQI results shown in Appendices C6-1 and C6-2.

Table B2-8: FEI Actual Formula O&M and Savings ($ millions)

Year	Actual (a)	Formula with 0.5% PIF (b)	Savings above the Formula (c=b-a)	Formula without 0.5% PIF (d)	Savings related to 0.5% PIF (e = d-b)	Total Savings to customer w/ Sharing (f = 0.5*c + e)
2020	$ 259.5	$ 261.8	$ 2.3	$ 263.1	$ 1.3	$ 2.4
2021	268.3	272.5	4.2	274.9	2.5	4.6
2022	281.7	285.2	3.5	289.1	3.9	5.6
2023	295.0	299.3	4.3	304.3	5.0	7.2
2024P	309.6	312.6	3.0	319.3	6.8	8.3
Total			**$ 17.3**		**$ 19.4**	**$ 28.0**

Table B2-9: FBC Actual Formula O&M and Savings ($ millions)

Year	Actual (a)	Formula with 0.5% PIF (b)	Savings above the Formula (c=b-a)	Formula without 0.5% PIF (d)	Savings related to 0.5% PIF (e = d-b)	Total Savings to customer w/ Sharing (f = 0.5*c + e)
2020	$ 58.2	$ 59.8	$ 1.5	$ 60.0	$ 0.2	$ 1.0
2021	58.9	62.3	3.4	62.9	0.6	2.3
2022	63.6	66.2	2.6	67.1	0.9	2.2
2023	66.1	70.3	4.2	71.7	1.4	3.5
2024P	70.8	72.8	2.0	74.7	1.8	2.8
Total			**$ 13.8**		**$ 4.9**	**$ 11.8**

2.2.2.3 Flexibility to Innovate and Adapt

In the 2020-2024 MRP Application, FortisBC stated that a flexible approach that allows for innovation and adaptation will be key to managing the transition to a lower carbon economy while achieving a balance between affordability and low emissions for current and future customers. The rate plan was intended to provide the opportunity for innovation and the adoption of new technologies.

In the design of the Current MRP, FEI introduced the Clean Growth Innovation Fund (CGIF) and CGIF rate rider in order to invest in innovation for the purpose of adapting its system in the future to the ongoing transition to a lower carbon economy. As discussed in Section C5, the CGIF has been effective in providing funding to important gas decarbonization innovations that can provide customers with lower-carbon gaseous fuels at reasonable costs. FEI is expecting a total commitment of approximately $17 million in approved funding through the CGIF by the end of 2024 to support research and development in low carbon innovation initiatives, including hydrogen production, hydrogen distribution, end-use with hydrogen, hybrid systems, RNG, and carbon capture technologies. This research is expected to continue past the term of the Current MRP.

The Current MRP has demonstrated its flexibility during global events that had a significant impact on the Companies and their customers. The COVID-19 pandemic was a significantly disruptive event that has had broad-reaching impacts, including the subsequent increase in global inflation and major supply chain shortages. Additionally, extreme weather events have impacted both Utilities during the Current MRP term. FBC continues to manage through extreme wildfire seasons, with this most recent summer bringing devastating wildfires to the Kelowna area. The impacts of extreme flooding during the “atmospheric river” event in 2021 caused significant damage to FEI’s assets and greatly impacted customers. Through the design of the Current MRP framework, which included mechanisms for adjusting costs for inflation, utilizing the approved flow-through and exogenous factor mechanisms, and prioritizing and updating forecasts of regular capital projects, FortisBC was able to address these significant disruptive events. The Annual Review process itself also provided an important opportunity, particularly through the workshops,

for interveners and the BCUC to engage directly with the Companies on the impacts and the Companies' responses to these significant events.

FortisBC believes that its Current MRP framework has been successful in providing reasonable flexibility to innovate and adapt towards a future lower carbon economy while also including mechanisms for the Utilities to address and recover significant costs resulting from unanticipated and extraordinary events that have impacted FortisBC's operating environment. An important goal of the Rate Framework in this Application is to maintain this flexibility.

2.2.2.4 Incentive to Invest in the Future

In the 2020-2024 MRP Application, FortisBC highlighted that it needed to increase its focus on seeking growth opportunities which help offset the costs associated with climate policy and meeting emissions reduction targets, as well as the costs to meet the growing need for investment in system integrity and reliability. Continued growth also helps expand FortisBC's ability to provide lower-carbon energy solutions to a broader customer base now and in the future. The rate plan should provide incentive for FortisBC to continue to invest in the long-term health of the Companies.

Under the Current MRP, FortisBC has continued to expand its investments in Clean Growth Initiatives, including FEI's NGT fuelling stations and tanker service, FEI's LNG sales through Rate Schedule (RS) 46, FEI's renewable gas service and programs, and FBC's EV DCFC service. By design, under the Current MRP framework, the costs and revenues associated with these Clean Growth Initiatives were approved to be forecast annually, with variances between forecast and actual amounts captured in the Flow-through deferral account. This approach has enabled FortisBC to effectively and proactively expand resources and undertake activities to meet emission targets and government policies. This has included detailed study and planning for the introduction of hydrogen into FEI's system to reduce emissions and enable FEI to continue to play a key role in the energy transition.

FortisBC believes the treatment of these investments under the Current MRP worked well in allowing both Utilities to expand low-carbon energy solutions, ensuring reasonable incentives were available for the Utilities to continue to invest in Clean Growth Initiatives for the transition to a low carbon future.

2.3 *REVIEW OF OTHER JURISDICTIONS*

Regulators in major Canadian provinces continue to employ indexed-based MRPs for the regulation of natural gas and electric utilities within their jurisdictions. In addition to BC, Alberta, Ontario and Quebec currently apply indexed MRPs to their major local distribution companies. Other North American regulators have also been pushing for alternative incentive frameworks to traditional cost of service regulation.

FortisBC observes that all MRPs included in its review share a set of common objectives in seeking to promote a continuous efficiency focus, align utilities' and ratepayers' interests and

encourage utilities to achieve government policy objectives, while ensuring service quality requirements are met. Further, all MRPs reviewed aim to create an efficient regulatory process for the period of the MRP, allowing the utilities to focus on effectively managing business priorities and increasing the focus on innovative solutions to utility challenges.

However, within the frameworks of these common objectives, each jurisdiction has tailored the plans to fit its specific circumstances. This supports the popular belief among MRP practitioners that the framework adopted for each utility should be in keeping with their specific circumstances and their history with performance-based rate-setting. In other words, while MRPs in various jurisdictions may share many common features, the overall incentive package is tailored to fit the circumstances of each utility.

2.3.1 Features of Indexed-based MRPs in Canada

This section includes a summary comparison of MRP features and related regulators' decisions in three Canadian jurisdictions. Specifically, Table B2-10 below provides a snapshot of Alberta's third generation PBR plans for natural gas and electric distributors, the Ontario Energy Board's (OEB) renewed regulatory framework for Ontario's electric distributors and the Enbridge Gas Distribution (EGD) incentive rate-setting plan in Ontario, and Energir's multi-year rate plan in Quebec. A more detailed discussion regarding the background information and explanation of MRPs for each jurisdiction is provided in Appendix B2-2 to this Application.

Table B2-10: Jurisdictional Comparison of MRPs

	Alberta Natural Gas Utilities	Alberta Electric utilities	Enbridge Gas IR plan	Ontario Electric Utilities[34] (Price cap)	Ontario Electric Utilities (Custom IR)	Energir
Proceeding	Limited AUC initiated multi-utility hearing		Phase 1: Partial Negotiated Settlement Phase 2: TBD	OEB initiated multi-utility hearing		Oral hearing
Term	5 years (2024-2028)		5 years (2024-2028), first year is cost of service	5 years		3 year extension (2022/2023 to 2024/2025 fiscal years)
Type	Revenue per Customer Cap	Price Cap	Price Cap (Implied Revenue Cap)	Price Cap	Custom IR	Revenue decoupling with O&M Indexing
Formula	Revenue per customer$_t$ = Revenue per customer $_{t-1}$ * (1 + I – X)	Rates $_t$ = Rates $_{t-1}$ * (1 + I – X)	Rates $_t$ = Rates $_{t-1}$ * (1 + I – X) + AU AU : Avg Use adjustment	Rates $_t$ = Rates $_{t-1}$ * (1 + I – X)	Could be forecast, formula or both. Usually capital is forecast and included in the formula through a capital factor.	O&M $_{t+1}$ = O&M$_t$ * (1 + I + 0.75* G) G: customer growth Capital is forecast.
Inflation	Composite factor of Alberta FWI AHE and Alberta CPI		GDP IPI FDD (EGD is proposing a composite index of Ontario AHE and GDP IPI FDD)	Composite factor of Ontario AWE and GDPPI-FDD	Usually the same as price cap but may change on a case-by-case basis	Composite factor of Quebec AWE (with a 4% ceiling) and Quebec CPI
X-Factor	0.4% (0.1% for calculating incremental capital needs)		0.3% (EGD is proposing a negative X-factor of -1.35%)	0% to 0.6%	0% to 0.6% Can change on a case-by-cases basis	0%
Earnings sharing mechanism	If (actual ROE – allowed ROE) is between 200 and 400 bps then 60% utility and 40% rate payers. If the variance is above 400 bps then 80% sharing in favour of rate payers. No sharing for variances below 200 bps		If normalized actual ROE is 150 bps above approved ROE, excess earnings is shared on a 50/50 basis.	No earnings sharing	To be decided on a case-by-case basis	If (actual ROE – allowed ROE) between 0 bps and 50 bps then 75% Energir and 25% ratepayers. For ROE variance > 50 bps then 50:50 sharing

[34] Ontario's electric utilities can choose from a menu of options which include Price Cap IR, Annual Indexing IR and Custom Incentive Rate-setting (Custom IR). The table above includes the information related to Price Cap IR and Custom IR only. See Appendix B2-2 to this Application for more information regarding the annual indexing option.

	Alberta Natural Gas Utilities	Alberta Electric utilities	Enbridge Gas IR plan	Ontario Electric Utilities[34] (Price cap)	Ontario Electric Utilities (Custom IR)	Energir
Off-ramps / re-openers	- 300 bps normalized ROE for two consecutive years or +/- 500 bps in one year		+/- 300 bps normalized ROE for one year	+/- 300 bps normalized ROE for one year		None
Efficiency carry-over mechanism	None		Deferred rebasing for five years	Consolidating utilities can ask for deferred rebasing of benefits for up to ten years		None
Incremental Capital Funding	TYPE 1: Funding for expenditures directly caused by applicable law related to net-zero objectives; TYPE 2: An incremental capital calculated based on capital-related revenue generated under I-X and the total notional capital-related revenue requirement		Incremental capital module (ICM) similar to the one applied to Ontario's electric utilities	ICM and Advanced capital module (ACM). Criteria: prudence, discrete projects, clearly outside the base rates and for expenditures above the materiality threshold	Not Applicable. Forecasted in the 5-year plan (exceptions may exist)	Not applicable. Projects above $4 M may need specific approval.
Energy Transition Impact	Capital tracker treatment to include projects caused by applicable laws related to net-zero objectives Option for O&M remuneration scheme		Phase 1: Reduction to proposed base capital investment; increase to equity thickness and changes to main extension test. Phase 2: TBD	Utilities can use the custom IR plan to forecast their incremental capital needs related to Energy Transition		Regulatory relief in revenue requirement to focus on other strategic proceeding aimed at addressing Energy Transition
Z-Factor	Unforeseen, outside management control, and materiality threshold (dollar value of a 40 bps change in ROE on an after tax basis)		Unforeseen events, outside management control, materiality threshold ($5.5M revenue requirement impact)	Unforeseen events, outside management control, Materiality threshold: $50K for Revenue required (RR) less than $10M; 0.5% of RR if $10M < RR =< $200M, $1M if RR > $200M		Not applicable
Y-Factor	Includes items such as AESO flow-through items, municipal fees, load balancing deferral accounts, weather deferral account, …		Includes items such as cost of gas, DSM expenses, Tax variances, LRAM, …	Includes both commodity and non-commodity related deferral accounts	Similar to the price cap plan plus as needed to track capital variances	Includes both commodity and non-commodity related deferral accounts
Service Quality Indicators	Based on AUC's Rule No.2		Scorecard system	Scorecard system		Yes

1

FortisBC draws the following high-level conclusions from the review of the above MRPs:

- There has been no significant change in the MRP/PBR plans' overall structure in the studied jurisdictions since FortisBC filed its 2020-2024 MRP Application. Changes are mainly related to specific elements of the plan and are incremental.
- With the exception of Energir's plan, all other jurisdictions have a five-year term. However, the MRP term for both Enbridge Gas and Ontario's electric utilities typically includes a one-year cost of service for establishing the going-in base rates.
- Most plans cover both O&M expenditures and capital expenditures while allowing for recovery of certain costs outside the formula as incremental capital expenditures, flow-through or exogenous cost items. Ontario's custom incentive rate-setting (Custom IR) option, however, is often used by utilities with significantly large and highly variable capital plan profiles not suitable for formulas. Therefore, the capital expenditures under these plans are often forecast and then included in the formula through a capital factor. Hydro One's Custom IR is a recent example of this and is included in the jurisdictional comparison Appendix. Energir's rate plan also excludes capital investments from formula and uses a forecast instead.
- Both revenue cap and price cap type formulas have been used by natural gas and electric utilities; however, all natural gas distributors' price cap plans include a mechanism to adjust the rates for average use variances and mitigate the demand risk (similar to FEI's revenue stabilization adjustment mechanism) which transforms their plans into a form of revenue cap in practice. Energir's plan is similar to FortisBC's plan in the sense that the formula is directly applied to the O&M expenses rather than to revenues or prices.
- All plans' formulas include a composite inflation factor consisting of both labour and non-labour price indexes. Further, the X-Factor value for the electric and natural gas utilities in Alberta, Ontario and Quebec ranges between 0 percent and 0.6 percent, inclusive of any stretch factor. All plans have some form of growth factor (explicitly for revenue per customer cap and O&M per customer indexing and implicitly embedded in the price cap plans). Further, with the exception of Energir's plan, all plans provide for recovery of 100 percent of customer growth (i.e., they do not include a discount to the growth factor).
- Most plans include some form of incremental capital funding mechanism outside the I-X formulas to accommodate utilities' capital needs for lumpy and significant capital projects during the MRP term (unless the capital is forecast).
- Canadian regulators' approaches to addressing the energy transition in revenue requirement proceedings vary. In jurisdictions such as Quebec, the energy transition solutions are largely addressed outside the revenue requirement in separate proceedings (or separate phases of the same proceeding). Indeed, the Regie specifically notes that its approved rate plan for Energir is designed to reduce the regulatory burden so that both the Regie and Energir can focus on other strategic projects/proceedings[35], most of which relate to the energy transition, such as dual-fuel energy solutions for space heating, mandatory RNG connections for new

[35] Dossier R-4076-2018, Decision D-2019-028, para 34.

customers and resource planning. In Alberta, the AUC agreed to change the criteria for capital tracker treatment to include projects directly caused by applicable laws related to net-zero objectives. Additionally, the AUC stated that utilities can file proposals for O&M remuneration schemes for projects that can delay and/or reduce the need for capital intensive system expansion projects. In Ontario, electric distributors can use the Custom IR plan to forecast their lumpy and significant capital needs. Further, the OEB's decision in phase one of EGD's 2024-2028 revenue requirement proceeding included a number of measures to address energy transition risk, such as an increase to EGD's equity thickness, a decrease to the proposed capital investment plan and changes to the main extension test for small volume customers which is under review.[36]

- All plans include safeguard mechanisms to protect the utility and ratepayers against the potential unintended consequences of MRPs (such as windfall surpluses or losses). These can be in the form of earning sharing mechanisms, off-ramps and/or re-opener mechanisms that are triggered when, for example, the variances between achieved and approved ROEs exceed a certain threshold.
- All plans include a series of service quality indicators to monitor the reliability and quality of service during the MRP term and ensure that any cost reduction is not achieved at the expense of service quality.

2.4 *STAKEHOLDER FEEDBACK*

In its efforts to develop this Rate Framework Application in a way that recognizes stakeholder interests and issues of concern, FortisBC engaged in discussion with interveners and BCUC staff as the content for this Application was being conceived and then developed. This took the form of initial informal one-on-one conversations in April 2023 and then a full workshop on November 20, 2023. The following is a summary of these activities.

Participants

FortisBC engaged with the following stakeholders through the Application development process:

- BCUC staff
- BC Municipal Energy Utilities
- BC Public Interest Advocacy Centre
- BC Sustainable Energy Association
- Commercial Energy Consumers of BC

[36] Subsequent to the OEB decision, the Ontario Minister of Energy tabled a bill, Keeping Energy Costs Down Act, 2024, which seeks to provide the Minister with powers to amend the OEB decision in a number of respects, including reversing changes to the main extension test and prescribing a separate proceeding to consider such changes. At the time of writing, the bill had reached second reading. https://www.ola.org/en/legislative-business/bills/parliament-43/session-1/bill-165.

- Industrial Customers Group
- Movement of United Professionals (MoveUP)
- Residential Consumer Intervener Association

2.4.1 April 2023 Preliminary Meetings

FortisBC representatives met with BCUC staff to gather feedback and perspective on its upcoming rate setting framework application. Specifically, FortisBC sought feedback on what has worked well with the Current MRP, what could be improved, the top issues in relation to the rate plan, and any other advice in relation to the next rate plan.

Key areas of feedback included the need to find and maintain regulatory process efficiencies. This included discussion of efficiencies flowing from a joint application between FEI and FBC as well as seeking to streamline the Annual Review process. Staff supported the need to consult with stakeholders to ensure their voices are heard. Staff also suggested that the application would benefit from clear articulation of the themes of the application, including how FortisBC has balanced the impacts of the energy transition and affordability. Finally, it was suggested that greater clarity and consistency in how capital is described would be beneficial.

FortisBC representatives also met with interveners individually in one-hour meetings to probe their thoughts on what has worked well with the Current MRP, what could be improved, the top issues facing their constituents in relation to the rate plan, and any other advice they had in relation to the next rate plan.

Common areas of feedback received from these meetings included support for regulatory efficiencies where possible while still enabling transparency given the evolving environment. There was skepticism from some interveners on whether the cost efficiencies were realized due to the Current MRP mechanisms or if they would have happened anyway under a non-incentive model. Interest was expressed in reshaping the ratemaking model to adapt to current times. Interveners wanted to see the utilities adapt as part of the energy transition but still expected affordability. A couple of interveners shared concerns around future renewable gas supply and the overall viability of the gas utility given existing and anticipated government policy direction.

2.4.2 November 2023 Workshop

On November 20, 2023, FortisBC representatives met with BCUC staff and interveners in a full day workshop held at the FortisBC Vancouver office and virtually. Topics included on the agenda for this workshop were:

- FortisBC's Operating Context
- Adapting the Framework to the Operating Context
- Proposed Service Quality Indicators

Material used by FortisBC to facilitate the discussion was provided and is included in Appendix B2-3. A summary of the feedback received and how it has been addressed in this Application is provided in Table B2-11 below.

Table B2-11: Summary of Intervener Feedback

No.	Intervener Feedback	How FortisBC Has Addressed in Application	Application Reference
EVOLVING WITH THE ENERGY TRANSITION			
1.	Adapt with the energy transition while maintaining affordability.	FortisBC proposes to address this challenge by maintaining a cost-control focus, supporting customers in reducing their energy consumption, optimizing existing infrastructure and investments, and adding new sources of revenue serving non-traditional markets. Further, FortisBC has proposed mechanisms that, over the three-year term, will provide flexibility to adapt to the changing environment, including formula-based growth capital for FEI (see item 6 below).	Section B1.4; Section B3.2; Section C3.3.1
2.	Concerns about the viability of the gas utility given existing and anticipated government policy direction.	While the long-term role for gas infrastructure is uncertain from a policy perspective, FortisBC views gas infrastructure as a critical element of the energy system in BC, meeting peak energy demand during cold weather events, providing access to scalable supplies of low carbon energy, and bringing low carbon fuels to hard-to-decarbonize sectors. Further, there are many filings that deal with the impacts of the energy transition beyond the rate setting framework. FortisBC continues to manage the impacts across all of its filings.	Section B1.4.1; Section B3.1
3.	Utilize innovation, renewable gases, gas and electric integration, and new lines of business to help keep the gas utility viable.	FEI proposes to continue the Clean Growth Innovation Fund, continue investments in clean growth initiatives, to focus on more integrated planning for gas and electric systems, and to continue to pursue growth in non-traditional markets.	Sections C2.2.3.3 and C2.3.3.2; Section C2.5; Section C5
PURSUING REGULATORY EFFICIENCIES AND TRANSPARENCY			
4.	Pursue regulatory efficiencies where possible while enabling collaboration and ensuring transparency.	FortisBC has filed a joint application between FEI and FBC given the overlap in common rate framework elements. Reviewing those elements in the same regulatory proceeding enhances the efficiency of the review process. FortisBC is also proposing to continue the Annual Review process while gaining efficiencies by removing from the scope of the Annual Review process those components of the Framework that are approved by the BCUC in this Proceeding and that remain unchanged each year.	Section B3.2; Section C1.10
5.	Comfortable with the Application incorporating both FEI and FBC.	As noted above, this Application incorporates both FEI and FBC with distinctions between the two utilities noted throughout as applicable. FortisBC believes that this approach optimizes regulatory efficiency.	Throughout Application

No.	Intervener Feedback	How FortisBC Has Addressed in Application	Application Reference
INVESTING IN SAFE, RELIABLE AND RESILIENT SERVICE			
6.	FEI will be experiencing a drop off in customer growth and this should be considered for the growth capital formula and depreciation moving forward.	FEI considers the formula approach based on unit costs and a forecast of gross customer additions with true-up for variances remains the most appropriate approach for establishing FEI's growth capital. Since this approach will continue to be dependent on the number of gross customer additions, it will also provide flexibility when establishing the amount of growth capital each year during the transitional period to lower carbon emission energy. For example, if the number of gross customer additions is reduced during the three-year term due to the energy transition, the formula approach will also reduce the amount of growth capital calculated but still enable FEI to meet the obligation to connect any new customers if requested to do so.	Section C3.3.1; Section D2
7.	Investment is needed for emergency event preparedness and cyber related risks.	FortisBC concurs and has suggested in this Application that this increases the need for investment in physical and cyber security for both FEI and FBC to maintain the safety and reliability of the Province's energy system. Additionally, the increasing frequency of extreme weather events has created additional risk to energy infrastructure and FEI and FBC must invest to ensure their systems are resilient and adaptable in response.	Section B1.6; Sections C2.2.4.3, C2.3.4.3 and C2.3.4.5; Sections C3.3.3.4 and C3.4.3.4
ADAPTING SERVICE QUALITY INDICATORS			
8.	Adapt and report on the energy transition and general support for exploring possible leading indicators to establish a means of more effectively measuring overall employee safety. Question over the need to report meter reading completion with AMI in place. (Further specific SQI feedback is noted in the SQI appendices)	FortisBC has considered all feedback received from interveners on the proposed SQIs, including proposing a new FEI category of Informational Indictors specific to the energy transition and proposing a new employee safety leading informational indicator for both FEI and FBC. FEI and FBC have proposed to rename and transition meter reading completion to an informational indicator given the implementation of advanced metering. FEI has also considered feedback on the threshold for TSF (non-emergency) and has maintained the threshold at 68 percent.	Section C6; Appendices C6-1 and C6-2

A more detailed summary of the feedback received was provided and is included in Appendix B2-3. A summary of the feedback received in the Service Quality Indicators portion of the workshop is included in Section C6.2 and in Appendices C6-1 and C6-2.

2.5 *CONCLUSION*

The Current MRP has performed well in a rapidly evolving external environment, including unprecedented pressure on rates for both gas and electric operations, driven by factors that are external to FortisBC's historical operations. These include the energy transition impacts and the impacts of the COVID-19 pandemic, which have contributed to the high inflationary environment and supply chain shortages. FEI's and FBC's total effective rate increases have tracked close to composite inflation on a cumulative basis and, when excluding rate impacts from items approved outside of the Current MRP, have tracked below the composite inflation rate.

Looking across Canada, there have been no significant changes to the structure of rate plans for gas and electric utilities that have been implemented; however, regulators have increasingly recognized the need to account for the energy transition, but have maintained consistency with the requirements of rate plans and managed many of the impacts of the energy transition outside of rate framework proceedings.

Finally, FEI and FBC have met with BCUC staff and interveners to discuss the operating context and how it shapes the rate-setting framework. The Companies took away valuable feedback, which was used to inform the design of the Rate Framework.

3. IMPLICATIONS FOR THE RATE FRAMEWORK

The purpose of this Application is to establish a flexible and efficient rate setting framework that supports FortisBC's ability to adapt to the energy transition and manage its impacts on the provision of affordable, reliable, and resilient service to customers as the Province works toward a more integrated and sustainable energy future. In developing its Rate Framework proposals, FortisBC considered how the energy transition and other key influences in its external operating environment impact the components of its revenue requirement.

FortisBC believes that its Rate Framework proposals set out in Section B3.2 below strikes a reasonable balance by providing for necessary flexibility (through annual updating of certain forecasts and costs) and incenting FortisBC to continue to control its costs. Over FortisBC's long history with PBRs and MRPs, different components of the revenue requirement have been included in the indexing approach. FortisBC continues to believe in the fundamental principles behind incentive regulation and has proposed that the majority of the Companies' O&M costs, and also the unit costs of FEI's Growth capital, continue to benefit from the discipline imposed by an indexing approach. Similarly, the majority of the Companies' capital costs remain subject to a three-year forecast, providing incentive to control costs during the term of the Rate Framework. The Rate Framework also provides for regulatory efficiency by establishing the parameters for what can and should be reviewed during each Annual Review.

While there are key differences in the challenges facing FEI and FBC, there are common rate framework solutions that can help mitigate those challenges. This joint Application proposes similar, although not identical, rate-setting frameworks that account for the different challenges facing each utility. FortisBC believes that the flexibility provided by the Rate Framework can accommodate the types of energy transition impacts that face both the gas and electric utilities.

3.1 *THE ENERGY TRANSITION IMPACTS REACH ACROSS MANY REGULATORY PROCEEDINGS*

As stated above, FortisBC is proposing a rate-setting framework that is flexible enough to accommodate the impacts of the energy transition. Detailed and iterative analyses, engagement, and regulatory policy will be needed to effectively navigate the future role of gas and electricity, and how these energy sources can work together to provide an efficient and effective energy system in BC. A key focus for FortisBC and its customers is to implement a rate-setting framework that recognizes the uncertainty inherent in the energy transition and that can incrementally adapt to the complex changes that happen primarily over the medium to long term. The energy transition will occur over time, through various policy enactments that will be reflected in key regulatory filings and proceedings. This Application is about setting a rate framework that is flexible enough to accommodate those impacts, but this rate framework is not where the majority of those determinations are made. Below, FortisBC describes the major regulatory proceedings where the energy transition impacts will be addressed, and how impacts of the decisions on these processes will be reflected through the Annual Reviews provided through the Rate Framework.

3.1.1 Long Term Resource Plans

In FortisBC's gas and electric long term resource plans (LTGRP and LTERP, respectively), the Companies provide a longer term (20 year) view of how the various energy policies and other external influences will impact the businesses. It is in these proceedings that the BCUC accepts a future planning scenario that is used to inform FortisBC's capital plans and that supports FortisBC's views of the future demand scenarios that could develop. It is in the LTGRP/LTERP proceedings where the various aspects of FEI's and FBC's responses to the energy transition are pulled together.

FEI filed its most recent LTGRP on May 9, 2022 and received a decision from the BCUC on March 20, 2024. While the 2022 LTGRP examined a range of future potential demand scenarios, including the potential for both increasing and decreasing gas demand over the next 20 years, FEI has based its capital forecasts in this Application on the Diversified Energy (Planning) (DEP) scenario. The DEP scenario envisions a high level of DSM activities, a role for some electrification of gas loads in buildings, and an important and growing role for renewable and low carbon gases to replace conventionally sourced natural gas over the next 20 years to address the transition to a decarbonized energy future. The combination of these resources is shown to meet the Province's GHG emission reductions targets in the *Clean Energy Act* and the *Climate Change Accountability Act*. The 2022 LTGRP and numerous other studies cited in the LTGRP have shown that there remains an important role for the gas system in a decarbonized energy future. While it is likely that the actual combination of resources will unfold somewhat differently than the amounts modelled in the 2022 LTGRP DEP Scenario, none of the scenarios filed differ significantly over the term of this proposed three-year Rate Framework. Finally, the various components of the Rate Framework provide sufficient flexibility to accommodate changes in the external environment, such as through the forecast/flow-through treatment of demand and of certain O&M and capital expenditures.

FBC filed its LTERP on July 4, 2021 and received a decision from the BCUC on December 21, 2022. FBC's long-term vision also aligns with a diversified energy future as the key pathway to a decarbonized energy future. The BCUC decision on the 2021 LTERP has been fully reflected in the proposals set out in this Application. FBC's next LTERP is expected to be filed in 2025, with any decision likely to be received in late 2026. Although the timing of the LTERP decision will likely occur after rates are proposed for 2027, the various components of the Rate Framework provide sufficient flexibility to accommodate changes.

3.1.2 Major Projects

FortisBC typically files separate applications for its Major Projects, which are primarily CPCNs but can include other significant projects. The decisions in these separate proceedings determine whether the projects are approved to proceed, and in some cases, can influence future levels of O&M and Sustainment capital, as well as energy demand assumptions.

A number of CPCNs were approved during the Current MRP term, and the impacts of those CPCNs were incorporated into the applicable rate-setting years through the mechanisms

approved within the Current MRP. For instance, the approval of the IGU project and the CTS TIMC project resulted in incremental O&M requirements. These incremental O&M amounts were included as forecast (flow-though) integrity O&M during the Current MRP term. These amounts will be incorporated into Base O&M for the proposed Rate Framework as discussed in Section C2.2.2.2.2.

In 2023, FEI received approval for the Advanced Metering Infrastructure (AMI) CPCN project. This project has a range of impacts on the Company during the term of the Rate Framework, as AMI will be in the process of deployment throughout the three-year period. FEI has proposed how to accommodate the deployment of the AMI project in Sections C2.2.2.2.1 (O&M) and C6.3.3 (SQIs) of this Application, demonstrating that the Rate Framework is sufficiently flexible to adapt to changes in operational circumstances. As new Major Projects are reviewed and approved during the term of the Rate Framework, such as the recently filed FBC Fruitvale Substation CPCN project, the flexibility contained within the Rate Framework will allow for the impacts to be incorporated into rates, similar to the Current MRP.

3.1.3 FEI Gas Filings

FEI files an Annual Contracting Plan (ACP) with the BCUC in the spring of each year. The ACP focuses on FEI's short- to mid-term contracting strategies for storage, supply, and pipeline transportation resources to meet the peak day, winter design, and annual load requirements for not only the upcoming gas years (November to October) but future gas years as well.[37] The ACP includes increasing amounts of renewable and low carbon gas over time.

The transition from conventional gas to renewable and low carbon gas is an important component in the overall strategic planning of the ACPs. Over the past several years, FEI has incorporated RNG supply into its gas supply portfolio and expects the amount of supply will continue to grow. In order to properly manage any adjustments to FEI's contracting strategies for conventional gas, storage, and pipelines, there are several considerations that FEI must assess. FEI monitors whether the supply is directly connected to FEI's system (on-system) or delivered to FEI's system through displacement (off-system). FEI also assesses the firm amount of supply delivered on its system, or at the regional market hubs. RNG purchases have different contractual obligations than FEI's conventional natural gas purchases. This is because contracted RNG projects can have either an annual or monthly supply requirement to FEI, or a minimum daily firm amount, whereas FEI's firm conventional natural gas purchases are for a fixed GJ/day delivery for each day of the term of the transaction. Therefore, the volumes delivered to FEI can fluctuate during the month, based on whether the RNG plant(s) are running and other market conditions. From a security of supply perspective, FEI needs to maintain a portion of conventional natural gas within the portfolio to manage the risk of any supply variability.

In the short-term, FEI anticipates that the majority of its RNG supply will be secured outside of FEI's service areas (i.e., off-system supply). Therefore, FEI will still require contracts with third parties for transportation services to deliver gas (whether conventional or RNG) to FEI's

[37] These requirements are for RS 1 to 7 and RS 46 sales service customers (Core customers).

customers. As RNG volumes continue to increase each year, FEI will monitor and make any adjustments that are required to the remainder of the gas supply portfolio through each ACP. Additionally, as FEI begins to integrate other low-carbon gas supply, it will assess annually the impact to the portfolio in each ACP.

The ACP that is accepted by the BCUC is then reflected in rates through a series of quarterly gas cost filings and periodic renewable gas supply filings.

FEI filed an Application for a Revised Renewable Gas Program in 2021 and received a decision from the BCUC on March 20, 2024. Although the decision made in that regulatory proceeding will directly impact FEI's energy transition plans, the impacts will primarily be reflected in future renewable gas plans and applications, and in commodity and midstream rates. The effects on the delivery rates will be limited to the pace of future customer attachments, the balances in certain deferral accounts, and the requirements for employees and systems to support the renewable gas program. Although these impacts can be significant, they are expected to be more impactful over a longer term than the three-year term proposed for this Rate Framework. Further, the mechanisms that FEI already has in place, and that it proposes to continue in the Rate Framework, provide flexibility to accommodate these changes. These mechanisms include annual reforecasting of customer attachments, annual updating of deferral account balances, flow through of renewable gas acquisition costs and renewable gas O&M and capital.

3.1.4 Demand Side Management (DSM)

FEI's 2024-2027 DSM Expenditures Plan was accepted on February 2, 2024, and FBC's 2023-2027 DSM Expenditures Plan was accepted on December 16, 2022. These filings are focused on energy efficiency programs, with an emphasis on cost-effective measures that contribute to the long-term success of the energy transition, including opportunities for gas system optimization such as hybrid heating. The Rate Framework allows for annual updating of the deferral accounts where the DSM Expenditures are captured (including the costs of the employees that support the programs), and the forecasting methodologies are designed to reflect changes in use rates, whether caused by DSM activities or otherwise, over time. There are no direct O&M impacts from the Companies' DSM programs.

3.1.5 Summary of Energy Transition Regulatory Impacts

FortisBC has made significant efforts over the past decade to evolve its rate-setting frameworks, as well as the projects, plans and programs in the above noted proceedings, to manage the early impacts of the energy transition. As discussed in Section B1, the impacts of the energy transition on FortisBC's gas and electric operations are growing and FortisBC must continue to evolve its rate-setting framework to help manage the impacts. While many of these impacts will ultimately have an effect on FortisBC's rates, the majority of the related projects, plans and programs are reviewed and determined outside of the Rate Framework and outside of the annual rate-setting process (i.e., Annual Reviews).

FortisBC's goal with this Rate Framework is to ensure that it continues to be flexible enough to accommodate those impacts while also providing the necessary certainty and efficiency that will help it manage the growing requirements to diversify revenue streams, invest in capacity and resiliency projects as approved, and elevate its focus on integrating gas and electric planning across the Province for an efficient and effective use of resources. The Rate Framework will also support the need to continue to secure resources and invest in necessary energy infrastructure.

The proposed three-year term may reduce the incentive properties of the Rate Framework compared to a longer term, but FortisBC has a strong track record of cost control and savings while operating under successive plans, and this will continue to be a major focus of the Companies. Additionally, to respond to rate pressures, FortisBC will continue to focus on rate smoothing approaches, and on the affordability strategies discussed in Section B1.5.

3.2 *KEY FEATURES OF THIS RATE FRAMEWORK THAT ADDRESS THE ENERGY TRANSITION*

To address the energy transition and other influences in FortisBC's operating environment, and in consideration of the existing flexibility and features of its Current MRP and stakeholder feedback received, FortisBC's key proposals for the Rate Framework are as follows:

1. A term that provides incentive to perform and the capacity to focus on key issues, while acknowledging the current level of uncertainty in the operating environment;
2. Sufficient funding to address emerging requirements and challenges;
3. Flexibility to adapt to the energy transition to manage its costs and impacts; and
4. An efficient annual rate-setting process that allows the Companies to focus on responding to the energy transition operationally and through key regulatory filings focused on the energy transition.

Below, FortisBC describes the various elements of its Rate Framework at a high level.

3.2.1 Elements Common to FEI and FBC

3.2.1.1 Term

FortisBC is proposing a three-year term for its Rate Framework, with an option to extend beyond three years subject to a review of the operating environment at that time. Three years is a shorter term compared to the Current MRP and the previous 2014-2019 PBR Plan, and it reflects the uncertainty inherent in the operating environment due to the energy transition. Three years provides a balance between a long enough time frame to find some efficiencies in the regulatory process and provide certainty on the rate mechanisms in place, while recognizing that the energy transition will have transformational impacts and that the timing and quantum of these impacts is uncertain.

The option to extend this Rate Framework beyond 2027 has the potential to provide for additional efficiencies. FortisBC believes that in three years (in 2027), further policy development will likely have occurred, with further clarity provided on what roles the gas and electric utilities play in the future, and on how gas and electric utilities can work together to accommodate the energy transition. In 2027, FortisBC will carefully review the implications of policy developments and its overall operating environment and consider the externalities present at that time. Based on these considerations, FortisBC may propose to extend the Rate Framework for one or both of the Companies. Overall, a three-year term with the possibility to extend will allow for efficiency and allow FortisBC to continue to focus on the fundamental impacts of the energy transition.

3.2.1.2 Base O&M Formula

FortisBC proposes to continue with its existing formula-based approach to Base O&M. This has provided for an efficient rate-setting process over the past decade and continues to provide incentive for FortisBC to control and prioritize spending. FEI and FBC have re-set their starting Base O&M levels considering both current actual spending levels and incremental requirements over the upcoming three years. The Companies have also reviewed the inflation factor, productivity factor and growth factor, and provide recommendations on each of these items in Section C1. The specifics of the Companies' O&M proposals are included in Section C2.

3.2.1.3 Three Year Regular Capital Forecast

In the 2020-2024 MRP Application, FortisBC had proposed to establish its Regular capital forecasts (Sustainment and Other capital for FEI; Growth, Sustainment and Other capital for FBC) for the entire five-year term. However, in the MRP Decision, the BCUC approved only the first three years of the Companies' five-year capital forecasts. The BCUC stated the following (page 131):

> …FEI and FBC face evolving operating environments and there are inherent uncertainties in the five-year forecast. Reviewing the capital forecasts in 2022 allows for a review of any significant variances between forecast and actual to date and provides an opportunity to true-up the rate-base for actual spending and to re-forecast the remaining years in the MRP term.

FortisBC considers these concerns to be just as valid today, particularly in light of potential energy transition impacts on longer term capital plans. This was a key consideration in FortisBC's three-year forecast of Regular capital expenditures, as set out in Section C3, and was a key consideration in proposing a three-year term for this Rate Framework.

3.2.1.4 Flow-through and Exogenous Items

FortisBC proposes to continue with the majority of its existing flow-through items and resulting deferral accounts. The flow-through items are discussed in Section C2.5 (O&M), Section C3.3.4 (FEI Capital) and Section C3.4.4 (FBC Capital), and a listing of the deferral accounts is provided in Appendices C4-4 and C4-5. A key category of existing flow-through items for both FEI and FBC

is Clean Growth Initiatives, and both Companies propose to continue to treat these initiatives as flow-through. Clean Growth Initiatives are vital to supporting the energy transition, but the pace at which they may scale up is uncertain and difficult to anticipate. Therefore, flow-through treatment benefits both the Companies and customers because it allows for the Companies to invest the amounts needed to support the energy transition while ensuring that customers only pay for the actual expenditures incurred. Further, by forecasting these items annually, the BCUC and interveners have the opportunity to review the forecasts in each Annual Review.

An area of significant focus in the Current MRP has been FEI's and FBC's load forecasts. In response, the Companies have provided an explanation of the load forecasts in Appendices C4-1 and C4-2 and have proposed a workshop specific to reviewing the load forecast methods in this proceeding. FortisBC proposes to continue to treat revenue (with the exception of some aspects of Other Revenue) as flow-through. This treatment ensures that annual variances between forecast and actual amounts are trued-up in the subsequent year. Therefore, should the Companies experience notable fluctuations in load in a specific year that are not captured by the forecast, these fluctuations will be captured in the Flow-through deferral account, and the forecasts will be adjusted in subsequent years to account for changes in demand, whether as a result of the energy transition or other factors.

FortisBC sees value in continuing with the existing exogenous factor criteria and thresholds as discussed in Section C1.6. This mechanism has served both customers and the Utilities well in flowing through both costs and savings that were unforeseen at the time the rate plans were approved. In particular, with the continuing occurrence of extreme weather events, it is important that the Companies have the opportunity to recover significant costs resulting from these events.

3.2.1.5 Earnings Sharing Mechanism, Efficiency Carryover Mechanism and Off-Ramp

FortisBC continues to believe that a symmetrical 50/50 earnings sharing mechanism (ESM) is the most beneficial in aligning the interests of customers and the Utilities. The ESM provides the Companies with an incentive to perform and ensures that customers are sharing in any savings achieved each year.

Given the limited time frame for the proposed Rate Framework (three years), FortisBC does not consider it necessary to include an efficiency carryover mechanism (ECM) in the proposed Rate Framework.

FortisBC proposes to continue with the existing off-ramps that were approved for the Current MRP. The off-ramps provide a safeguard to the Companies and customers, and while they have not been required thus far in the Companies' rate plan history, given the uncertainties in the timing and pace of impacts of the energy transition, FortisBC considers it worthwhile to continue the off-ramp mechanism during the term of the Rate Framework.

Further discussion of these items is provided in Sections C1.7 through C1.9.

3.2.1.6 Incremental Capital

As discussed above in Section B3.1.2, a provision to allow for the inclusion of incremental capital approved through CPCNs or other Major Project proceedings has been instrumental in having a rate setting framework that can accommodate energy transition impacts and allow for safe, reliable, and resilient energy systems. FortisBC believes this process has worked well and should be continued.

3.2.1.7 SQIs

FortisBC has reviewed its suite of SQIs for continued applicability for those metrics that are reflective of service expectations, and in consideration of providing information on its progress through the energy transition. FEI is proposing a new suite of Energy Transition informational indicators. These new indicators are described in detail in Section C6.3.4 and in Appendix C6-1.

3.2.1.8 Annual Reviews

As explained above, a key feature of the Rate Framework is to provide an efficient annual rate-setting process that allows the Companies to focus on responding to the energy transition operationally and through key regulatory filings focused on the energy transition. In Section B2.2.2.1, FortisBC discussed how the regulatory efficiency of the Annual Review process has diminished, and why an efficient rate-setting process is vital so that the Companies can focus their attention and resources on the many significant operational and regulatory processes that are and will be required for the Companies to respond to the energy transition and changes in the external environment.

FortisBC considers that the Annual Review process should be continued during the Rate Framework term. However, FortisBC considers that increased regulatory efficiency can be achieved, and has accordingly proposed some clarifications and adjustments to the process in Section C1.10.

3.2.2 Elements Specific to FEI

As explained in Section B1.4, the energy transition has specific and unique implications for FEI as compared to FBC. FEI has reviewed the features of the Current MRP and has assessed whether certain components require modification to respond to the energy transition and other external factors.

3.2.2.1 Forecast/Flow-through Items

With regard to forecast/flow-through items, as explained in Section B3.2.1.4, FEI and FBC both propose to continue treating Clean Growth Initiatives as flow-through during the Rate Framework term. This treatment is especially vital for FEI, as FEI addresses emissions and continues to develop its low carbon energy solutions, including the existing categories of renewable gas, which has expanded from just biomethane initiatives to now include hydrogen initiatives, as well as CNG and LNG fuelling and LNG production. For this Rate Framework, FEI discusses the addition of

methane emission mitigation as a new category of Clean Growth Initiatives. Please refer to Section C3.3.4.1 for further details.

3.2.2.2 Regular Growth and Sustainment Capital

In the Current MRP, unlike FBC, FEI has utilized a formula approach to Growth capital. FEI reviewed this treatment in consideration of the energy transition's expected impact on new customer additions and believes that for the three-year term of the Rate Framework, a formula approach continues to be appropriate for managing the uncertainty associated with customer connections. FEI's Growth capital needs are directly related to annual new customer attachments; therefore, a formula approach is well suited to this category of capital. Accordingly, FEI proposes to continue the formula approach and to continue with the existing method of forecasting gross customer attachments annually, with the variances between forecast and actual connections trued up and Growth capital adjusted for this true-up. This forecasting and true-up approach provides the flexibility needed to adjust Growth capital annually for changes in customer attachments, whether due to the energy transition or otherwise. FEI has an obligation to connect customers if requested to do so; this remains a valid external driver of Growth capital additions. For further discussion of Growth capital, please refer to Section C3.3.1.

FEI has taken steps to rationalize its Sustainment capital planning, while recognizing the importance of continuing to provide safe and reliable service to customers. FEI has accordingly focused on prioritizing the necessary reliability and integrity projects and programs over the three years of the Rate Framework, and on planning new load driven infrastructure with optionality to account for the scope and timing uncertainty of the energy transition from gas to electric. The specific details of FEI's capital planning are discussed in Section C3.2.

3.2.2.3 Energy Transition Informational Indicators

As referenced in Section B3.2.1.7 and described in detail in Section C6.3.4 and Appendix C6-1, FEI is proposing to add a new suite of informational indicators related to the energy transition.

3.2.2.4 Earlier Recovery of Gas System Assets

One response to the energy transition that has been discussed in other FEI regulatory proceedings and has been raised for future consideration in other jurisdictions is a change in approach to depreciation expense, from the long-established useful life approach to an economic planning horizon recovery method. This approach has the goal of reducing the potential for stranded assets over the long term. However, this change would result in an accelerated recovery of depreciation expense, which would increase rates for customers. Although this is an approach that can have some value in the future, the energy transition will be a long-term transition and will unfold over an extended time horizon; FEI firmly believes that now is not the time to accelerate depreciation and increase costs for customers.

A better approach at this time, which FEI has been pursuing to date, is to develop alternative energy products and services that leverage existing assets while also reducing emissions. The

early retirement of assets is conceptually at odds with the development of alternative products and services using those assets. It will also increase costs and crowd out investments in emissions reduction, and projects a negative signal about the future use of gas infrastructure and its ability to successfully navigate the energy transition. This would be misleading, as FEI's assets can play a critical role in the transition towards a lower carbon future. Because of this, developing alternative energy products and services that leverage existing assets while also reducing emissions is the reasonable and appropriate pathway.

Further discussion of this topic in the context of FEI's depreciation study is provided in Section D2.1.

3.2.3 Elements Specific to FBC

FBC is affected by the energy transition differently than FEI. FBC is focused on investing in capacity to accommodate increases in load, whether coming from electric vehicles or from customers moving to electricity from other fuels. In addition, the need to respond to climate impacts through investments in climate adaptation is more acute for FBC compared to FEI due to FBC's above-ground grid. As such, FBC has provided further discussion on the expected O&M and capital impacts of these influences over the coming three years in Section C2.3.4.5.3 for O&M and in Sections C3.4.1 and C3.4.2 for capital.

3.3 *CONCLUSION*

FortisBC has considered the fundamental impacts of the energy transition on its customers and gas and electric operations and concluded that it needs an efficient rate setting framework that supports its ability to adapt to the energy transition without compromising the reliability and resilience of its energy systems as it works toward a more integrated and sustainable energy future.

In developing its Rate Framework proposals, FortisBC therefore considered the significant uncertainty caused by the energy transition against a backdrop of increasing challenges related to climate impacts on energy infrastructure, physical and cyber security, aging assets, and customer affordability. To manage these impacts, FortisBC has proposed a Rate Framework that includes:

1. A term that provides incentive to perform and the capacity to focus on key issues, while acknowledging the current level of uncertainty in the operating environment;
2. Sufficient funding to address emerging requirements and challenges;
3. Flexibility to adapt to the energy transition to manage its costs and impacts; and
4. An efficient annual rate-setting process that allows the Companies to focus on responding to the energy transition operationally and through key regulatory filings focused on the energy transition.

Overall, FortisBC's Rate Framework represents a continued evolution of its approach to rate setting in the midst of a challenging external environment.

FortisBC Energy Inc. and FortisBC Inc.
Application for Approval of a Rate Setting Framework for 2025 through 2027

Section C:

PROPOSED RATE SETTING FRAMEWORK

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C: PROPOSED RATE SETTING FRAMEWORK

FortisBC's Rate Framework will be used to determine natural gas delivery rates and electricity rates over the 2025-2027 period for FEI and FBC, respectively. As discussed in Section B2 of the Application, the Current MRP has demonstrated its inherent flexibility which has helped the Companies manage the uncertainty caused by the energy transition and extreme weather events, as well as the substantial inflationary pressures impacting costs. Although inflationary pressures are expected to lessen, the risks related to the energy transition and extreme weather events remain over the proposed three-year term of the Rate Framework.

The material in Section C of this Application, along with the information contained in the referenced Appendices, provides a comprehensive description of FEI's and FBC's proposed Rate Framework for the period from 2025 to 2027:

Section C1 – Components of the Rate Framework: Sets out the components of the Rate Framework and provides a summary of each. Further details on significant components are provided in Sections C2 through C6.

Section C2 – O&M: Describes the proposed 2024 Base O&M and discusses how O&M funding, including both formula and forecast, will be determined during the term of the Rate Framework.

Section C3 – Capital Expenditures: Discusses FEI's 2024 Base Growth capital and funding over the term of the Rate Framework. It also provides FEI's and FBC's forecasts of all other capital expenditures from 2025 to 2027, and an update on anticipated Major Projects.

Section C4 – Annual Calculation of the Revenue Requirement: Discusses the items that will be included in the revenue requirement at each Annual Review, and the proposed treatment of variances from forecast for each item.

Section C5 – Innovation Funding: Describes FEI's updated proposal for innovation funding for accelerating investment in innovative technologies.

Section C6 – Service Quality Indicators: Describes FEI's and FBC's proposed suite of SQIs to monitor performance during the term of the Rate Framework, including the new Energy Transition informational indicators proposed for FEI.

Section C7 – 2025 Indicative Rates: Provides the Companies' indicative 2025 rates incorporating all of the proposals, including those set out in Section D.

1. COMPONENTS OF THE RATE FRAMEWORK

1.1 *INTRODUCTION*

This section describes the components of the Rate Framework from 2025 to 2027 for FEI and FBC. Table C1-1 below summarizes the Rate Framework components and references the section where the details can be found. Most elements of the Rate Framework are identical for the two Companies.

Table C1-1: Summary of 2025-2027 Rate Framework

Item	2025-2027 Rate Framework	Section(s)
Term	A three-year term from 2025 to 2027, with the potential to extend the Rate Framework beyond 2027.	C1.2
Inflation Index (I-Factor)	A weighted average of AWE:BC for labour costs and CPI:BC for other costs will be used to determine the I-Index. FortisBC proposes to return to a fixed labour/non-labour weighting for the term of the Rate Framework.	C1.3
Productivity Factor (X-Factor)	***FEI***: An X-Factor of 0.38 percent, consisting of 0.28 percent industry O&M partial factor productivity (PFP) and 0.10 percent stretch factor for FEI's O&M and Growth capital indexing formulas. ***FBC:*** An X-Factor of 0.20 percent, consisting of 0.20 percent industry PFP and zero percent stretch factor for FBC's O&M indexing formula.	C1.4
Growth Factor	Continue with annual forecast of customer growth for FEI's and FBC's index-based O&M and gross customer additions (GCA) for FEI's Growth capital, both with a true-up to actual when available. In addition, FortisBC is proposing to eliminate the 0.75 discount factor currently applied to the growth factor for the O&M formula.	C1.5
Controllable Expenses – O&M	Continue with an indexed (I – X) unit cost approach for O&M. A 2024 Base O&M is established. O&M will not be rebased during the term of the Rate Framework but will be subject to true-up for actual customers.	C2
Controllable Expenses – Capital	***FEI***: Continue with an indexed (I – X) unit cost approach for Growth capital. The Growth capital formula is tied to the forecast GCA with the base unit cost developed using a regression of three-year actuals and projected results. Growth capital will not be rebased during the term of the Rate Framework but will be subject to true-up for actual GCA. Three-year forecast of Regular Sustainment and Other capital. ***FBC:*** Continue with a forecast of Regular Growth, Sustainment and Other capital expenditures for the term.	C3
Forecast O&M and Capital	Continue with specific O&M and capital items being forecast each year in the Annual Review with variances captured in the Flow-through deferral account or other deferral accounts.	C2 and C3
Incremental Capital	Continue with annual forecasting of incremental capital approved through CPCNs, OICs, or other Major Project proceedings.	C3

Item	2025-2027 Rate Framework	Section(s)
Forecast Revenues and Margins	Continue with annual forecast of revenues. For FEI, variances in revenue will continue to flow to either the RSAM deferral account (for RS 1, 2, 3, and 23) or the Flow-through deferral account. For FBC, variances in both revenue and power supply costs will continue to flow to the Flow-through deferral account.	C4
Deferral Accounts	Continue the use of rate base and non-rate base deferral accounts, with any required changes proposed at each year's Annual Review. Continue the use of a single Flow-through deferral account for each utility to capture all variances that are approved with flow-through treatment, except where a separate deferral account is approved.	C4
Innovation Fund	Continue the funding of innovation for FEI. Return unused funds from the Current MRP in 2025.	C5
Service Quality Indicators (SQIs)	***FEI***: 17 SQIs (8 SQIs with a target benchmark and 9 informational indicators) are proposed as measures of customer service, employee safety and reliability, as well as new informational indicators related to the energy transition. ***FBC***: 12 SQIs (7 SQIs with a target benchmark and 5 informational measures) are proposed as measures of customer service, employee safety, and reliability.	C6
Exogenous Factors (Z-Factor)	Continue with existing criteria (including existing materiality thresholds). Cost increases or decreases for items such as legislative changes, catastrophic events, accounting changes and BCUC decisions will be flowed through in rates, subject to BCUC approval.	C1.6
Earnings Sharing Mechanism (ESM)	Continue with a 50:50 ESM between customers and the Companies for earnings above and below the allowed ROE.	C1.7
Efficiency Carryover Mechanism (ECM)	Remove the ECM from the Rate Framework.	C1.8
Off-Ramps	Continue with existing off-ramps.	C1.9
Annual Review Process	Retain the Annual Review process but with a more defined scope.	C1.10

1.2 *TERM*

As discussed in Section B3.2.1.1, FortisBC is proposing a three-year term for the Rate Framework for the years 2025 to 2027, with the potential to extend beyond 2027 if appropriate. FortisBC considers that a three-year term will provide a long enough timeframe to allow for some efficiencies in the regulatory process while being short enough that nearer term impacts from the energy transition can be accommodated. FortisBC notes a three-year term to 2027 will also be the midway point to 2030, with 2030 being a significant milestone for many climate goals set out by government.

Towards the end of the three-year term, FortisBC will review and assess the Rate Framework and submit a proposal to either extend the Rate Framework or propose a new rate-setting framework if necessary. The review will consider whether the index-based O&M (FEI and FBC)

and Growth capital (FEI) formulas are providing reasonable funding levels, whether adjustments need to be made to flow-through items and/or other components of the Rate Framework, and will assess overall whether the Rate Framework continues to be flexible enough to accommodate the impacts of the energy transition as understood at that time.

1.3 *INFLATION (I) FACTOR*

The use of an inflation or I-Factor in a rate-setting framework provides recognition that utility costs are subject to the general inflationary pressures occurring in the economy, although the specific pressures or weightings of the various inflationary influences may be different than for the economy in general. As in the Current MRP, FortisBC proposes to continue the use of a weighted composite I-Factor, consisting of the following inflation indexes: labour indexed to Statistics Canada's AWE:BC and non-labour indexed to the All-items Index for CPI:BC.[38] However, FortisBC proposes to return to fixed labour and non-labour weightings. Fixed weightings were approved for FortisBC's 2014-2019 PBR Plans and were proposed for its Current MRP.

In proposing the weightings, FortisBC reviewed the recent history (2019 to 2023) of the labour and non-labour splits that were approved during the term of the Current MRP as shown in Table C1-2 below.

Table C1-2: History of Labour and Non-labour Split for FEI and FBC

	FEI		FBC	
	Labour	Non-Labour	Labour	Non-Labour
2019	52%	48%	62%	38%
2020	51%	49%	63%	37%
2021	51%	49%	60%	40%
2022	49%	51%	57%	43%
2023	48%	52%	59%	41%
Average	50%	50%	60%	40%

FortisBC is proposing a fixed 50 percent labour weighting for FEI and a fixed 60 percent labour weighting for FBC, based on the average of the 2019 to 2023 actual labour weightings. This is a departure from past filings where the same percentages were applied to both FEI and FBC. Using the proposed weightings, the I-Factor determination for the Rate Framework is expressed as follows:

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	FEI	
	Labour	Non-Labour
2019	52%	48%
2020	52%	48%
2021	51%	49%
2022	51%	49%
2023	49%	51%
Average	51%	49%

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[38] In Orders G-164-14 for FEI and G-182-14 for FBC, the BCUC approved the use of Statistics Canada CANSIM Table 326-0020 (now 18-10-0004-01) to determine the CPI:BC and CANSIM Table 281-0063 (now 14-10-0223-01) to determine AWE:BC.

$$I_t = L\% \; x \; AWE{:}BC_{t-1} \; + N\% \; x \; CPI{:}BC_{t-1}$$

Where:
I = inflation factor
L = labour weighting
$AWE{:}BC$ = labour index
N = non-labour weighting
$CPI{:}BC$ = non-labour index
t-1 = most recent July to June values

In proposing to move back to a fixed labour and non-labour weighting approach as was approved in the 2014-2019 PBR Plans, FortisBC considered its objective of increasing regulatory efficiency during the Rate Framework against the potential for decreased accuracy of the annual labour and non-labour weightings. As explained below, FortisBC considers the benefits of regulatory efficiency outweigh the potential for decreased accuracy.

The BCUC stated in the MRP Decision that "to attain a higher degree of accuracy, the Panel finds that it is more appropriate to set the labour to non-labour ratio annually and to base it on the most recently completed year."[39] Although accuracy is a valid consideration, it should be balanced against other equally important considerations such as regulatory efficiency. As with the other components of the indexing formulas, it is only necessary for the inflation factor to be reasonable, not exact. For example, if FEI's labour weighting had been fixed at 50 percent for the term of the Current MRP, the actual labour weightings would have ranged from 2 percent higher to 2 percent lower than a fixed 50 percent. The impact would then have been that in some years (assuming that the AWE:BC increased more than CPI:BC each year, as was generally experienced during the Current MRP), FEI's formula O&M funding would have been slightly lower or slightly higher (or equal). Ultimately, however, the impact to FEI's overall O&M funding envelope would have been minor, and consistent with the intent of the formula-based approach to O&M funding, FEI would manage these annual variations through re-allocation of resources as needed. The same would also be true for FBC.

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FortisBC has observed during the Current MRP term that there may be less acceptance of the approach directed in the MRP Decision of recalculating the labour and non-labour ratios annually based on the number and types of information requests received during the Annual Reviews. While FortisBC appreciates that the intent is generally to understand how the weightings are being calculated and why they are changing annually, the requests ultimately result in additional time and effort for the Companies to prepare these responses and do not have a bearing on the approvals being sought in the Annual Reviews, because the method for calculating the weightings was established in the MRP Decision and is not subject to change during the term of the Current MRP. FortisBC therefore considers that moving back to fixed labour and non-labour weightings is appropriate and more efficient.

[39] MRP Decision, pp. 47-48.

A fixed weighting is also appropriate because of the relatively short term of the Rate Framework (three years) which limits the potential for significant variations, and because the impact of the weighting changes on a year-to-year basis on the O&M and Growth capital envelopes is not material. FortisBC also notes that the AUC[40] adopted fixed labour to non-labour ratios in the most recent PBR plans for the utilities in Alberta, even though there are a number of utilities, and each has a different weighting from year to year.

FortisBC accordingly proposes that the weightings for AWE:BC and CPI:BC rates be fixed at 50 percent labour and 50 percent non-labour for FEI, and at 60 percent labour and 40 percent non-labour for FBC for the term of the Rate Framework.

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1.4 *X-FACTOR VALUES FOR FEI'S AND FBC'S INDEXING FORMULAS*

Another feature of FEI's and FBC's indexing formulas pertains to the X-Factor values which, along with industry input price changes (the inflation factor), are two industry-specific data that are used to decouple the link between the utility's allowed costs and its actual costs.

The X-Factor, also referred to as the productivity improvement factor (PIF), is typically computed as the sum of the industry productivity growth trend and a company-specific stretch factor (if appropriate). FortisBC retained the services of Dr. Lawrence Kaufmann, an expert in the field of productivity studies, to conduct two separate productivity studies for FEI's and FBC's respective industries and recommend an appropriate, evidenced based X-Factor (including any stretch factor, if appropriate) for their indexing formulas. Based on his analysis, Dr. Kaufmann recommends the following X-Factor values for FEI and FBC:

- An X-Factor of 0.38 percent, consisting of a 0.28 percent industry O&M partial factor productivity (PFP) and a 0.10 percent stretch factor for FEI's O&M and Growth capital indexing formulas.
- An X-Factor of 0.20 percent, consisting of a 0.20 percent industry PFP and zero percent stretch factor for FBC's O&M indexing formula.

In the following sections, FortisBC discusses each of these recommendations. Dr. Kaufmann's Report (Appendix C1-1 to this Application) provides more detailed analysis and explanation of the methodology, model inputs and the results.

1.4.1 The Appropriate Measure for Estimating FortisBC's X-Factors is O&M Productivity

In the 2020-2024 MRP Application, FortisBC did not conduct a productivity study to support its proposed X-Factor. Rather, FortisBC's proposed X-Factor value was based on the Total Factor Productivity (TFP) studies conducted by experts in other North American jurisdictions. However, considering that FortisBC's indexing formulas are mainly focused on O&M expenses, the BCUC

[40] In their decision on Alberta's PBR3, the AUC's rationale for choosing a fixed ratio was to "ensure that the distribution utilities' incentives will not be influenced by the relative rates of inflation between the components in the I factor".

determined that the results of the TFP studies, which consider both O&M and capital costs, cannot be directly applied to FortisBC's formulas.[41]

In his Report, Dr. Kaufmann agrees with the BCUC and states that an O&M PFP factor, which focuses on the industry O&M productivity growth, is a more appropriate measure for calibrating FEI's and FBC's O&M formulas, as well as FEI's Growth capital formula, since FortisBC's indexing formulas overwhelmingly apply to O&M costs.

Regarding FEI's Growth capital formula, Dr. Kaufmann explains that, due to data constraints, it is not possible to calculate a Growth capital specific productivity value.

1.4.2 X-Factor Recommendation for FEI's O&M and Growth Factor Formulas

Dr. Kaufmann's Report for FEI includes the following main sections:

- An industry O&M PFP analysis for US natural gas distribution utilities; and
- A comparison of FEI's O&M unit cost with the US natural gas distribution utilities as well as an analysis of the BCUC's previous decisions and FEI's own O&M PFP to inform his proposal for an appropriate stretch factor.

Each of these items is discussed further below.

1.4.2.1 Industry O&M PFP Analysis for Natural Gas Distribution Utilities

As explained in Dr. Kaufmann's Report, the industry O&M PFP analysis for FEI is estimated based on a sample of 54 US natural gas distributors over the 2007-2022 period.

Table C1-3: O&M PFP Trend for US Natural Gas Distributors 2007-2022

Sample	Period	Customer Growth	O&M Growth	Industry Input Price	O&M Quantity Growth	O&M PFP Growth
54 US NG distributors (excluding gas cost)	2007-2022	0.67%	2.98%	2.59%	0.39%	0.28%

As shown above, the industry O&M PFP growth for the US natural gas distributors is computed at 0.28 percent which, along with the stretch factor value, is used to determine FEI's X-Factor value.

1.4.2.2 Stretch Factor Analysis

As defined in Dr. Kaufmann's Report, a stretch factor represents a commitment by the utility to achieve incremental cost performance above the industry's average productivity during the plan's term. Ordinarily, stretch factor values are set based on a regulator's best judgement informed by:

[41] MRP Decision, p. 59.

(1) a utility's relative efficiency at the outset of the plan's term; and (2) the number of times the utility has been subject to cost efficiency improvement plans.[42]

Dr. Kaufmann conducts an O&M unit cost benchmarking analysis for FEI to measure its relative efficiency and inform its stretch factor recommendation. FEI's O&M unit costs were benchmarked against the US gas distributors used to estimate O&M PFP trends. These results are presented in Table C1-4 below.

Table C1-4: FEI's O&M Unit Cost vs. US Proxy Group (2020-2022)

FEI Avg. Cost/Customer (USD)	US NG distributors Avg. Cost/Customer (USD)	Percent Difference
$257.20	$262.18	-0.2%

As demonstrated above, FEI's average O&M cost per customer is similar to the US gas distribution average. As such, Dr. Kaufmann would consider FEI to be an average cost performer.

In addition, Dr. Kaufmann estimates that FEI's own internal O&M PFP growth averaged 1.26 percent and 0.34 percent over the 2014-2022 and 2007-2022 periods, respectively. FEI's performance during the 2014-2022 period (when its O&M costs were subject to an indexing formula), greatly exceeds the industry's O&M PFP trend of 0.28 percent, and out-performs industry norms. As Dr. Kaufmann concludes, FEI has likely generated significant cost savings for customers that have since been rebased into customer rates. This experience should be taken into account when considering an appropriate stretch factor for FEI.

In conclusion, considering the BCUC's previous stretch factor determinations, FEI's own O&M PFP growth rate, and the results of the unit cost benchmarking analysis, Dr. Kaufmann recommends a 0.10 percent stretch factor which, when added to the industry O&M PFP growth of 0.28 percent, results in a 0.38 percent X-Factor recommendation for FEI.

1.4.3 X-Factor Recommendation for FBC's O&M formula

Dr. Kaufmann's Report for FBC consists of the following main sections:

- An O&M PFP analysis for both the US electric utility industry and small electric utility peer groups; and
- A comparison of FBC's O&M unit cost (excluding generation O&M) with the two US proxy groups as well as an analysis of the BCUC's previous decisions and FBC's own O&M PFP to inform his proposal for an appropriate stretch factor.

[42] As acknowledged by the BCUC in the MRP Decision, utilities that have been continuously subject to an incentive ratemaking framework may have less potential for incremental productivity gains.

1.4.3.1 Industry O&M PFP Analysis

As explained in Dr. Kaufmann's Report, while FBC is a vertically integrated electric utility (VIEU), its electricity transmission and distribution and related customer care operations account for the bulk of its O&M costs.[43] Further, generation O&M can vary significantly based on the generation type and it may not be possible to construct a sufficient industry proxy group that has similar characteristics to FBC when including generation. As such, Dr. Kaufmann determined that it would be reasonable to exclude generation O&M expenses from FBC's O&M PFP analysis used to establish an appropriate industry-based productivity factor for the Rate Framework.

To account for FBC's small size and dispersed operations, Dr. Kaufmann's analysis for FBC considered two separate samples of electric utilities. The first sample was a broad-based, 82 company sample that comprises nearly the entire US electric utility industry. This broader sample is therefore consistent with the competitive market paradigm, wherein industry-wide productivity trends are used to set productivity factors. The second sample was a sub-set of the first proxy group comprising 20 relatively small US VIEUs. The table below provides the computation of the O&M PFP growth studies of these two samples for the 2007-2022 period.

Table C1-5: O&M PFP Trend for US Electric Utility Industry 2007-2022

Sample	Period	Customer Growth	O&M Growth	Industry Input Price	O&M Quantity Growth	O&M PFP Growth
82 US Electric Utilities	2007-2022	0.91%	3.26%	2.55%	0.71%	0.20%
20 Small US VIEUs	2007-2022	0.42%	3.39%	2.55%	0.84%	-0.42%

Dr. Kaufmann concludes the O&M PFP trend that uses the entire 82 company sample is a more appropriate basis for FBC's productivity factor than the small company alternative. While FBC's cost structure may in theory be more similar to its small company peers, the differences in output growth between FBC and the small company sample are stark.[44] Given this disparity, and the theoretical and precedential support for using the largest possible sample to calibrate productivity factors, Dr. Kaufmann recommends that FBC's productivity factor be equal to the industry-wide, long-run estimate of 0.20 percent O&M PFP growth.

1.4.3.2 Stretch Factor Analysis

As explained above, ordinarily stretch factor values are not based directly on any specific calculation but are rather set based on a regulator's best judgement informed by: (1) a utility's relative cost efficiency at the outset of the plan; and (2) the number of times the utility has been consecutively subject to cost efficiency improvement plans.

To measure FBC's relative cost efficiency and inform his stretch factor recommendation, Dr. Kaufmann conducted a unit cost benchmarking analysis where FBC's O&M expense (excluding generation O&M) per customer is compared with the equivalent O&M unit cost of the sampled

[43] Over the 2007-2022 period, generation accounted for just 5.2 percent of FBC's O&M costs.
[44] FBC's average annual output growth during the 2007-2022 period is 0.9 percent higher than the small peer group.

proxy groups. As shown in the tables below, this analysis indicates that FBC is an efficient cost performer relative to both proxy groups.

Table C1-6: Electric Utility Industry O&M Unit Cost vs FBC (Excluding Generation) (2020-2022)

FBC Avg. Cost/Customer (USD)	US VIEU Avg. Cost/Customer (USD)	Percent Difference
$340.15	$523.33	-35.0%

Table C1-7: Small VIEU Sample O&M Unit Cost vs FBC (Excluding Generation) (2020-2022)

FBC Avg. Cost/Customer (USD)	US VIEU Avg. Cost/Customer (USD)	Percent Difference
$340.15	$947.88	-64.1%

In addition, Dr. Kaufmann estimates that FBC's own internal, O&M PFP growth averaged 3.68 percent and 1.08 percent over the 2014-2022 and 2007-2022 periods respectively. FBC's performance during the 2014-2022 period (when its O&M cost were subject to an indexing formula), greatly exceeds the O&M PFP trend typical of small utilities, as well as the O&M PFP trend of the larger electric utility industry. As Dr. Kaufmann concludes, this exceptional performance has almost certainly generated cost savings that have since been rebased into rates and thereby benefited customers.

In conclusion, considering the BCUC's previous stretch factor determinations, FBC's own internal O&M PFP growth rate, and the results of the unit cost benchmarking analysis, Dr. Kaufmann recommends a zero percent stretch factor which, when added to the industry O&M PFP growth of 0.20 percent, results in a 0.20 percent X-Factor recommendation for FBC.

1.5 *GROWTH FACTOR FOR FEI'S AND FBC'S INDEXING FORMULAS*

FortisBC proposes to maintain the average number of customers as the growth factor for FEI's and FBC's O&M indexing formulas and to continue to use the Gross Customer Additions (GCA) as the growth factor for FEI's Growth capital formula. Further, similar to the approach approved in the MRP Decision,[45] FortisBC proposes to continue to use a forecast with subsequent true-up mechanism for the growth factor.

FortisBC is proposing to eliminate the 0.75 discount factor currently applied to the growth factor for the O&M formulas.

FortisBC discusses the rationale for the continuation of the proposed growth factors and the forecast and true-up mechanism, as well as discontinuation of the 0.75 discount factor to the O&M formulas' growth factors, below.

[45] MRP Decision, pp. 36-37.

1.5.1 Average Number of Customers Remains the Main Cost Driver for O&M Costs

FortisBC is proposing to maintain the average number of customers as the growth factor for FEI's and FBC's O&M indexing formulas. It is widely accepted that the number of customers is one of the primary cost drivers for a utility's operations.

Experts commonly use the number of customers to measure the output trends and to calculate the productivity growth trends of utilities. This includes FortisBC's expert, Dr. Kaufmann, who uses the number of customers for his O&M productivity calculations, as shown in Appendix C1-1. As explained in Dr. Kaufmann's report, "because the Companies' indexing formulas are applied on a per customer basis, the appropriate output measure for both Companies is the number of customers."[46] Using a different growth factor in the indexing formulas would therefore require a change in the choice of the output measure used in calculating the Companies' productivity growth trends.

1.5.2 Gross Customer Additions Continues to be the Appropriate Growth Factor for FEI's Growth Capital Formula

In the MRP Decision, the BCUC agreed with FEI's reasoning that Gross Customer Additions is the primary cost driver for FEI's Growth capital, and FEI was approved to change the growth factor from service line additions to GCA:[47]

> **The Panel approves Gross Customer Additions as the primary growth factor element to be used for the FEI Growth capital formula**. As noted above, the evidence establishes a clear connection between the number of new attachments and actual Growth capital expenditures.
>
> The Panel also finds it reasonable that the increasing trend towards multi-family developments makes the use of Gross Customer Additions more reflective of costs compared to the use of service line additions because of the need for multiple meters and larger headers. This is supported by the correlation between expenditures on meters and Gross Customer Additions (0.94) being higher than service line additions (0.88).[97] This is also consistent with FortisBC's explanation that use of service line additions in the Growth capital formula in the Current PBR Plan was one of the causes of the variance between actual and formula Growth capital.
>
> Further, the Panel is persuaded by FortisBC's argument that it is the addition of customers, not the average number of customers, that drives cost. This is supported by the high correlation of FEI Growth capital with Gross Customer Additions and by the fact that the average number of customers includes

[46] Appendix C1-1, p. 9.
[47] MRP Decision, p. 30.

customers that move in and out of premises, which typically does not require capital additions.

FEI submits that the BCUC's reasoning in the excerpt above for approving the GCA as the growth factor for Growth capital continues to hold true and that GCA continues to be the appropriate growth factor for FEI's Growth capital formula.

1.5.3 Forecast and True-up Mechanism Remains Appropriate

In the 2020-2024 MRP Application, FortisBC explained that a forecast growth factor with a subsequent true-up mechanism is the appropriate approach for updating the indexing formulas as follows:

- Costs and revenues are both driven by the actual growth experienced in the year for which rates are being set. Using a forecast ensures the Companies have the necessary funds to connect customers and operate the business in the year the funds are required to be spent.
- FortisBC recognizes that by using a forecast, a forecast variance will result in either an under recovery or over recovery of costs. FortisBC's proposed forecast and true-up mechanism will adjust the Companies' O&M expenditures and FEI's Growth capital for the forecast variance and removes any concerns of forecasting bias.
- The use of a forecast growth factor is consistent with: (1) the approach under traditional cost of service ratemaking; (2) the approved approach in other jurisdictions; and (3) how FortisBC internally forecasts its costs.

In the MRP Decision, the BCUC agreed with FEI's reasoning and approved the proposed forecast and true-up mechanism:[48]

> **The Panel approves the use of forecast average number of customers and the related true-up mechanism for calculating the FEI and FBC growth factor.** The Panel notes that none of the interveners raised concerns with FortisBC's request to eliminate the use of lagged actual customer growth and agrees with its reasons for an adopting forecast/true-up approach as a preferable methodology …
>
> … **The Panel approves FortisBC's proposal to eliminate the lagged actual customer approach for FEI Growth capital used in FEI's Current PBR Plan. The Panel also approves FortisBC's proposal to use forecast Gross Customer Additions with true-up to actual amounts in each test year for the previous year's forecasts.**

[48] MRP Decision, pp. 37, 41.

FortisBC submits that the forecast and true-up mechanism has worked as anticipated and that there is no compelling reason to change the current approach.

1.5.4 Discount Factor to the Growth Factor is Not Warranted

In the 2020-2024 MRP Application and proceeding, FortisBC explained that the application of a discount factor to the growth factor used in the indexing formulas is not warranted and amounts to double counting of the effects of economies of scale on costs' growth trends since the economies of scale are already reflected in the productivity growth factors calculated as part of the TFP or PFP studies conducted by experts.

In the MRP Decision, the BCUC accepted FEI's proposal to set the growth factor for FEI's Growth capital formula at 100 percent of the GCA. However, the BCUC determined that the growth factor for the O&M formulas should be reduced by 25 percent, using a 0.75 discount factor to the growth in average number of customers. The BCUC explained its Decision as follows:[49]

> The Panel continues to support the commentary in the BCUC's Decisions on the Current PBR Plans and notes that there is a not a 1:1 relationship between fixed and variable costs. However, using FortisBC's index-based O&M formula would result in forecast O&M (including fixed and variable costs) increasing or decreasing in a 1:1 relationship with the average number of customers. FortisBC explains that a 1:1 relationship is characterized by the expectation that the per customer O&M cost increase arising from adding new customers is the same as the average O&M per customer embedded in the Base O&M. In the Panel's judgement, it is not intuitively reasonable that the O&M cost impact of adding an additional customer is 100 percent.
>
> In determining the appropriate growth factor multiplier, in addition to considering the factors noted above, the Panel is also persuaded by the CEC's argument that an increase from 50 to 100 percent when the Current PBR Plans did not result in underfunding is not warranted. Accordingly, the Panel uses its best judgement to set a 75 percent growth factor multiplier for the Proposed MRPs.
>
> Regarding FortisBC's argument that the growth factor multiplier is duplicative of the productivity factor, in the Panel's view the multiplier is an adjustment to arrive at an index-based proxy to calculate the relationship between costs and number of customers and is unrelated to the purpose of a productivity factor.

FortisBC continues to believe that applying a discount factor to the growth factor used in the indexing formulas equates to double counting the effects of economies of scale on costs' growth trends. In other words, it is incorrect to state that FortisBC's position is that the "O&M cost impact of adding an additional customer is 100 percent." Rather, FortisBC's position is that the O&M costs are already reduced by the calculated productivity factor which considers the relationship

[49] MRP Decision, p. 37.

between the growth in average number of customers and O&M costs for the industry as a whole; therefore, re-discounting this factor amounts to a clear double counting of its effect in O&M costs.

Dr. Kaufmann confirms FortisBC's views and provides a deeper analysis and explanation in his report. As explained in Dr. Kaufmann's Report (Appendix C1-1), economies of scale (or lack of a 1:1 relationship between the growth in O&M costs and average number of customers) are reflected in the productivity factor calculations, not in the growth factor. Dr. Kaufmann states:[50]

> In other words, an important element of a "consistent cost-based treatment of output growth" is recognizing that changes in output (i.e. customer numbers) do not measure or reflect "the effect of output growth on cost." Instead, "these are captured in the productivity trend."
>
> … Cost theory shows that economies of scale is one of several sources of productivity growth. A rigorous mathematical derivation of this fact is presented (along with similar findings) in Appendix Two of this report. Since economies of scale is a component of productivity change, a properly constructed productivity index will by definition capture the impact of scale economies.
>
> There is also a more commonplace explanation: claiming that scale economies are reflected in the growth factor puts the cart before the horse. The logical sequence of events is that customer growth occurs, and scale economies follow. The phenomenon instigating the change will not measure the consequences.
>
> Another way to look at this is that, in a well-designed cost recovery mechanism, the productivity factor and customer growth factor have two distinct purposes. The productivity factor is designed to capture all the factors contributing to achieved cost efficiencies. The customer growth factor has a different purpose: to scale revenues upward or downward in response to changes in the scale of output, as measured by customer growth. There should accordingly be a one-to-one relationship between the number of customers served and the value of revenues received.

Dr. Kaufmann emphasizes in particular that a discount on the growth factor would not be reasonable given his recommended productivity factors:[51]

> The Companies' proposed indexing formula uses properly constructed O&M productivity indices. This change is responsive to BCUC concerns regarding the use of TFP metrics. It will also better align the MRP formulas with the costs recovered by the formulas.
>
> In light of this more rigorous and carefully focused framework, it is also more important for other elements of the indexing formula to be properly aligned.

[50] Appendix C1-1, p. 29.
[51] Appendix C1-1, p. 30.

> Indexing logic, basic cost theory, and common sense all support the conclusion that economies of scale are captured in the O&M PFP trend and not the customer growth factor. For all components of the Companies' indexing formulas to be internally consistent, no discounts of the customer growth factor should be applied to the Companies' allowed O&M adjustment formulas. Any discount of the customer growth factor would be unwarranted and tantamount to a "double counting" of scale economies, which are in fact fully recovered in the productivity factors. Accordingly, LKC recommends that no discounts should be applied to the customer growth factors for FEI and FBC's proposed indexing formulas.

Dr. Kaufmann also noted that other experts have acknowledged that a discount on the growth factor is mathematically incorrect:[52]

> While this analytical approach may have intuitive appeal, the customer growth issue ultimately does not hinge on statistical data or tests. Instead, the appropriate value of the customer growth factor should be determined by a proper application of indexing logic and cost theory.
>
> One illustration of this point is provided in a May 2021 Electricity Journal article titled *Escalating Power Distributor O&M Revenue*. The paper was written by Dr. Mark Lowry and David Hovde. The name of the article is itself an indicator of its relevance to the Companies' MRPs, which are focused on adjusting (aka "escalating") O&M revenue.
>
> … The general framework described by Lowry and Hovde has been applied in FortisBC's MRPs. The FEI and FBC applications of this framework use customer numbers as the sole "scale escalator," or output measure, for each plan. The Companies' MRPs also use an established and approved measure of industry input price inflation. Going forward, the X-factor proposals use measures of O&M partial factor productivity trends as the basis for their productivity factors, consistent with the Lowry/Hovde model. The basic design of the Companies' proposed indexing formulas is therefore identical with the framework developed by Lowry and Hovde.
>
> However, the article does more than identify the components of an appropriate index-based mechanism for adjusting allowed O&M costs; it also explains what those components do, and do not, measure. For example, after emphasizing that "a consistent cost-based treatment of output growth should be used in the productivity research," Lowry and Hovde write (in footnote 5), that the "growth of OutputsC Utility *is not the effect of output growth on cost because economies of scale are part of this effect and these are captured in the productivity trend* (emphasis added) [Footnote omitted]."[53]

[52] Appendix C1-1, p. 28.
[53] Lowry, M.N., *op cit*.

Based on the above, FortisBC respectfully requests that the growth factor used in the O&M formulas be set at 100 percent of the growth in the average number of customers.

1.6 *EXOGENOUS (Z) FACTOR*

FortisBC proposes to retain the existing exogenous factor (Z-factor) treatment from the Current MRP for events that are non-controllable and unforeseeable in nature. Subject to BCUC approval, customers' rates will be adjusted either up or down for the cost-of-service impacts of exogenous factors that are beyond the control of the Companies. Exogenous factor treatment of such items will ensure that customers pay only for the actual costs in circumstances where FEI or FBC does not control the level of expenditures.

In general, events that would qualify for exogenous factor treatment include:

- Judicial, legislative or administrative changes, orders or directions;
- Catastrophic events;
- Bypass or similar events;
- Major seismic incident;
- Acts of war, terrorism or violence;
- Changes in GAAP, standards or policies; and
- Changes in revenue requirements due to BCUC decisions (examples include rate design issues, depreciation rate changes, changes to cost of capital).

During the Current MRP term, there were a number of events for which exogenous factor treatment was approved for FortisBC, including:

- the COVID-19 pandemic net incremental cost reductions for both FEI and FBC from 2020 to 2021;[54]
- the incremental one-time and ongoing costs for FBC related to Mandatory Reliability Standards (MRS) Assessment Report (AR) No. 13;[55] and
- the 2021 Nk'Mip Creek wildfire for FBC in 2021.[56]

In addition, in the Annual Reviews for 2023 and 2024 Delivery Rates, FEI discussed the 2021 flooding related damage and remediation costs and stated that it would apply for exogenous factor treatment once the related insurance claim had been settled. The claim has now been settled and FEI is seeking exogenous factor treatment as part of this Application. As the flooding event has previously been discussed in detail in the 2023 and 2024 Annual Reviews, the discussion in the

[54] FEI and FBC Annual Reviews for 2023 Rates Decisions and Orders G-352-22 and G-382-22.
[55] FBC Annual Review for 2022 Rates Decision and Order G-374-21.
[56] FBC Annual Review for 2022 Rates Decision and Order G-374-21.

subsection below is primarily focused on the calculation of the amount of costs that FEI is seeking recovery of.

FortisBC will continue to identify exogenous factor events in its Annual Reviews and will also continue to follow the criteria established as part of the MRP Decision for evaluating whether the impact of an event qualifies for exogenous factor treatment:[57]

1. The costs/savings must be attributable entirely to events outside the control of a prudently operated utility;
2. The costs/savings must be directly related to the exogenous event and clearly outside the base upon which the rates were originally derived;
3. The impact of the event was unforeseen;
4. The costs must be prudently incurred; and
5. The costs/savings related to each exogenous event must exceed the BCUC-defined materiality threshold.

Regarding the materiality threshold, FortisBC proposes to maintain the existing materiality thresholds of $0.500 million for FEI and $0.150 million for FBC that were directed as part of the MRP Decision.[58] The established materiality thresholds have enabled the Companies to recover costs (or return savings) for significant events without resulting in an excessive number of requests for exogenous factor treatment. As discussed above, during the Current MRP term, FEI sought exogenous factor treatment for one event and discussed the potential for a second event, and FBC sought exogenous factor treatment for three events.

1.6.1 2021 Flooding Damage and Remediation

FEI is requesting exogenous factor treatment in this Application for the recovery of the incremental costs that were not recovered through its insurance claim related to the 2021 flooding event. FEI provides the following details on the remediation costs incurred, the exogenous amount FEI is seeking recovery of, and the implications of the proposed exogenous factor on the Base O&M for the Rate Framework.

Remediation Costs Incurred to Repair the Damages

From 2021 to 2022, FEI incurred in total approximately $3.734 million of incremental O&M and capital costs and billing credits provided to customers to remediate the damages due to the floods. In 2023, insurance proceeds of $2.013 million (net of the $1 million deductible), were received from FEI's insurance provider. These amounts are detailed in the table below.

[57] MRP Decision, page 62.
[58] MRP Decision, page 65.

Table C1-8: Summary of Remediation Costs and Insurance Proceeds Received

Items	2021 to 2022	2023	2024
	costs incurred ($)	*recovered with insurance ($)*	*exogenous treatment ($)*
O&M	1,641,509	(1,576,242)	65,267
Capital	1,266,012	(1,262,947)	3,064
Bill Credits	826,135	(173,924)	n/a
Total	3,733,656	(3,013,113)	68,331
Deductible		1,000,000	1,000,000
Net insurance proceeds		(2,013,113)	1,068,331

Amount Eligible for Exogenous Factor Treatment

FEI proposes exogenous factor treatment for the total incremental costs incurred that were not recovered through insurance, as the amount exceeds the materiality threshold of $0.500 million.

As shown in Table C1-8 above, $3.013 million of the total incremental costs of $3.734 million were recovered, with a remaining unrecovered balance, excluding the bill credits,[59] of $0.068 million. Additionally, FEI had a $1 million deductible on this insurance claim that was not recovered. The sum of the unrecovered remaining balance of $0.068 million plus the $1 million deductible totals to $1.068 million and represents FEI's out-of-pocket costs related to the flood remediation and the basis for the proposed exogenous factor amount.

Subject to receiving approval as part of this Application for exogenous factor treatment, FEI will record the O&M and the cost of service impacts of the capital in the existing Flow-through deferral account in 2024, consistent with the accounting treatment used in the past for other exogenous factors, with recovery in rates in 2025.

Implications for the Rate Framework Base O&M

In 2023, to account for the receipt of the net insurance proceeds received of $2.013 million, FEI credited formula O&M, capital and revenues. Please refer to the amounts in the column labelled "2023, recovered with insurance" in Table C1-8 above for the allocation of the proceeds between the categories. The $1 million deductible was recorded as an offset in formula O&M.

As a result of the above accounting, formula O&M actuals in 2023 include a one-time credit of $0.576 million, representing the net insurance proceeds received of $1.576 million less the $1

[59] The unrecovered portion of Bill Credits ($652,211) claimed for insurance is not subject to the exogenous factor treatment and is accounted for in the Flow-through deferral account used to capture the annual variances between the actual and approved amounts for costs and revenues.

million deductible. As this is a one-time credit in the 2023 formula O&M and will not re-occur, it should not form part of the 2024 Base O&M. FEI has therefore adjusted the 2024 Base O&M for this one-time credit, as explained in Section C2.2.2.1. The adjustment is captured in the line item "Adjustment for exogenous factor and flow through items" in Table C2-1 of Section C2.2.1.

1.7 *EARNING SHARING MECHANISM*

FortisBC is proposing to continue the symmetrical 50/50 earnings sharing mechanism (ESM) under the Rate Framework. An ESM is a regulatory tool in a rate-setting plan that is designed to enhance the alignment between customer and company interests and share the risks and benefits of the plan. An ESM is normally also put in place to mitigate against unintended results of a new plan, such as excessive utility gains or losses. An ESM is typically a backward-looking sharing mechanism in which a rate adjustment is provided if the actual earnings fall below or exceed a certain threshold.

Through the ESM (which is calculated as 50 percent of the ROE variance from allowed) FortisBC will continue to have incentive during the three-year term of the proposed Rate Framework to:

- Contain annual index-based O&M expenditures to a level at or below that calculated under the gross O&M per customer amount; and
- Contain Regular capital spending[60] at or below the approved level or, in the case of FEI's Growth capital, at or below the amount set through the index-based unit cost.[61]

FortisBC will also continue to calculate the earnings sharing using the widely-accepted method of a straight-forward 50 percent of the variances from the allowed rate of return on equity as approved in the Current MRP. This method is easy to understand and provides greater transparency, maintains the simplified approach adopted in the Current MRP, and enables incentive and flexibility to implement O&M and capital plans efficiently.

1.8 *EFFICIENCY CARRY-OVER MECHANISM*

FortisBC is not proposing an efficiency carryover mechanism (ECM) for the Rate Framework.

The purpose of an ECM is to provide incentive for the utility to continue to pursue efficiency gains toward the end of a multi-year rate plan, since the amount of time remaining to achieve a return on efficiency investments becomes successively shorter. Given a more limited (three-year) term for this Rate Framework, the focus in the coming three years on managing through the energy transition, and the complexities involved in designing an ECM tailored to its specific Rate Framework elements, FortisBC does not believe that an ECM is required at this time.

[60] Regular capital refers to capital that is part of the three-year forecast and/or part of FEI Growth capital. It excludes forecast/flow-through capital and incremental capital as part of Major Projects that is subject to flow-through treatment.

[61] The ROE impact of variances in Regular capital expenditures will be reflected in variances in depreciation, interest, taxes and ROE.

FortisBC will continue to evaluate the design of any future ECM and may propose to re-instate an ECM in the future, with the goal of proposing an ECM that is both simple to understand and provides incremental incentives.

1.9 *FINANCIAL OFF-RAMP PROVISIONS*

FortisBC considered whether the existing financial off-ramp provision should be retained in the Rate Framework. The off-ramp provision under the Current MRP is triggered if earnings in any one year vary from the approved ROE by more than +/- 150 basis points (post-sharing).

FortisBC believes the likelihood of triggering an off-ramp is low, for the following reasons:

- FortisBC is proposing only a three-year term for the Rate Framework;
- Both FEI's and FBC's actual ROE (post-sharing) have been well within the +/- basis point trigger during the Current MRP term;[62] and
- The Rate Framework continues with mitigations such as flow-through treatment for Clean Growth Initiatives, revenues and power supply costs, and the continuation of the existing 50:50 ESM.

Nevertheless, FortisBC believes there is value in continuing with the existing off-ramp provision, in particular due to the potential for a more rapid acceleration in climate change policy than what is currently anticipated over the term of the Rate Framework.

1.10 *ANNUAL REVIEW PROCESS*

The Annual Review process, which provides the BCUC and interveners with an opportunity to review the Companies' performance during the prior year and understand plans for the coming year, has now been in place for both the Current MRP term and the previous PBR Plan term. The scope and process for the Annual Reviews has largely remained the same, and FortisBC considers that the Annual Reviews have provided a successful forum for the Companies to communicate, and the BCUC and interveners to review, annual performance, new or changed requirements, and successes and challenges experienced by the Companies.

Accordingly, FortisBC proposes that the structure of the Annual Review process remains the same, (i.e., that the process continues to include one round of written IRs, a workshop, and written final and reply submissions). One written round of IRs allows for the issues, particularly technical issues, to be explored in detail, with any follow-up questions occurring at the workshop. FortisBC continues to believe that the workshop is a valuable opportunity for the Companies to interact directly with the BCUC and with interveners, and that parties continue to see value in this approach. Overall, the process has provided for a more streamlined rate-setting process while

[62] The maximum post-sharing variance to date in the Current MRP (to the end of 2022) is 22 basis points for FEI and 28 basis points for FBC.

still allowing for issues to be explored and evidence gathered so that the BCUC Panel is able to make informed decisions on the approvals sought.

However, and as discussed in Section B2.2.2.1, some efficiencies within the Annual Review process have diminished, and this is particularly evident in the expanded scope and number of IRs being asked. When assessing whether and how the Annual Review process could be improved, FortisBC considered the BCUC's Final List of Efficiencies (List), which was issued on December 22, 2023 as part of the BCUC's Regulatory Efficiency Initiative process. Notably, the Annual Review process already addresses many of the items in the List, including providing an established deadline for filing the Annual Review applications, having an established format for the applications and for the regulatory process, establishing the regulatory timetable upfront, and providing some scoping of topics to be addressed by the Companies in the Annual Review applications.

The primary area where FortisBC considers that regulatory efficiency can and should be improved in the Annual Review process is in clearer scoping of topics permitted to be explored in IRs (or at the workshop). For example, the BCUC stated in its decision on FBC's Annual Review for 2020-2021 Rates:[63]

> The purpose of the Annual Review is not to unravel or revisit the MRP Decision, rather, as the BCUC stated in that decision, the Annual Review process is designed to provide the BCUC, interveners and interested parties the opportunity to review the performance of [FBC] over the prior year.

This was further confirmed by the BCUC on a number of occasions, including in the decision on FBC's Annual Review for 2022 Rates[64] and 2023 Rates:[65]

> Once an MRP is approved, it should be given the opportunity to work as intended and should not be adjusted due to annual fluctuations in certain individual components of the plan. The Panel agrees with the BCUC's statement in FBC's Annual Review for 2020-2021 Rates that adjusting individual components of the formula O&M is outside the scope of any Annual Review. The purpose of the Annual Review is not to unravel or revisit the MRP Decision but to provide the BCUC, interveners and interested parties the opportunity to review the performance of FBC over the prior year and to assess the reasonableness of proposed rates for the following test period. [*Footnote omitted*]

The BCUC Panel's findings in the Annual Review decisions quoted above are instructive. Consistent with these findings, FortisBC is seeking clearer parameters at the outset of this Rate Framework on topics that are out of scope in the Annual Reviews, thus allowing the Companies,

[63] Decision and Order G-42-21, p. 14.
[64] Decision and Order G-374-21, pp. 20-21.
[65] Decision and Order G-382-22, p. 9.

the BCUC and interveners to focus on the in-scope issues and generally improve the efficiency of the process.

FortisBC considers that the following components, once approved by the BCUC as part of the Rate Framework, should remain out of scope for the Annual Review process and not be the subject of IRs or argument during the three-year term:

- **Inflation Index (I-Factor) and Productivity Factor (X-Factor):** The approved methodology for calculating each factor as well as any chosen economic indexes for labour and non-labour.
- **Growth Factor:** The methodology for calculating the growth factor (average number of customers for O&M and gross customer additions for FEI Growth capital).
- **Demand/Load Forecast Method:** The methods used to forecast demand and load each year for FEI and FBC, as described in Section C4.2. For clarity, FortisBC considers the demand/load forecast (e.g., the drivers of each year's demand increase or decrease) is within the scope of the Annual Review process, but the methods used to develop each forecast should remain out of scope as they will not change during the term of the Rate Framework.
- **Index-based O&M (FEI and FBC) and Growth Capital (FEI):** The methodology to calculate each year's index-based O&M and Growth capital, including the use of the growth factor, should remain out of scope as it will not change during the term of the Rate Framework. Additionally, requests for detailed comparisons of actual versus formula components of the index-based O&M should be out of scope in the Annual Reviews.
- **Forecast Capital:** For Regular capital (i.e., three-year Growth capital for FBC, and three-year Sustainment and Other capital for both FEI and FBC as discussed in Section C3), once the total amount is approved as part of this Application, it should not be subject to further review. Requests for detailed comparisons of actual versus approved forecast components of the approved Regular capital expenditures should be out of scope in the Annual Reviews.
- **Major Projects or Other Approved Projects or Initiatives:** Projects or Initiatives that are approved by the BCUC through a CPCN or other separate application process, or by government OIC should not be subject to review again during the Annual Review process.
- **FEI Biomethane Program and FBC RS 96 EV DCFC Service:** The cost and revenues that are forecast each year are within the scope of the Annual Review process; however, the merits of the program, the program design, and the rate design as approved by the BCUC through other proceedings should be out of scope of the Annual Review process.

1.11 *CONCLUSION*

To address the energy transition and other influences in FortisBC's operating environment, and in consideration of the existing flexibility and features of its Current MRP and stakeholder feedback received, FortisBC's key proposals for the Rate Framework are as follows:

1. A term that provides incentive to perform and the capacity to focus on key issues, while acknowledging the current level of uncertainty in the operating environment;
2. Sufficient funding to address emerging requirements and challenges;
3. Flexibility to adapt to the energy transition to manage its costs and impacts; and
4. An efficient annual rate-setting process that allows the Companies to focus on responding to the energy transition operationally and through key regulatory filings focused on the energy transition.

FortisBC has reviewed the elements of its Current MRP and retained those that have worked well. In recognition of the themes noted above, FortisBC has proposed:

- A shorter (three-year) term for its Rate Framework.
- Continuation of the I-Factor, but with the labour and non-labour weightings fixed for the three-year term.
- Returning O&M savings to customers and a continuation of FortisBC's cost control focus through prioritization of spending and a unit cost approach to O&M and FEI Growth capital, while proposing incremental O&M funding for key initiatives.
- Providing an opportunity for a detailed review of capital forecasts, Base O&M, and productivity factors in this proceeding.
- Maintaining flow-through treatment for key elements such as Clean Growth Initiatives.
- Continued funding for FEI's Clean Growth Innovation Fund.
- Annual reporting on energy transition informational indicators for FEI.
- Continuation of the exogenous factor treatment, the 50:50 ESM, and the financial off-ramp provisions.
- Continuation of the Annual Review process, providing an opportunity for discussion and review of the Companies' annual revenue requirements.

2. OPERATIONS AND MAINTENANCE (O&M)

2.1 INTRODUCTION TO O&M

Under the Rate Framework, the amount to be included in rates for FortisBC's O&M expenses will continue to be determined by an index-based formula, supplemented by annual forecasts for categories of costs that are appropriately not subject to a formula. Together, the proposed formula and forecast O&M reflect FortisBC's best estimate of what will be needed to meet the challenges and requirements that will arise over the 2025 to 2027 Rate Framework term. This includes the O&M required to address the impacts of the energy transition and other new requirements, while continuing to meet service quality and reliability requirements, which is a key focus for FortisBC.

The majority of FortisBC's O&M expenses will be determined by an indexed-based formula, which uses an O&M per customer amount adjusted for customer growth and inflation less an approved productivity improvement factor. The starting point for determining the O&M per customer amount is the 2024 Base O&M, which is the adjusted actual O&M expenditures for 2023 expressed over the average number of customers for 2023, escalated by the approved formula indexing factors for 2024, and includes expected spending for 2024 and incremental funding proposed for the term of the Rate Framework. The process for determining FEI's and FBC's 2024 Base O&M and the proposed adjustments are described in Sections C2.2 and C2.3, respectively. Over the term of the Rate Framework, the 2024 Base O&M will be escalated by the approved customer growth and inflation net of the productivity improvement factor[66] as described in Section C2.4.

In addition to the index-based formula O&M, some items for each of FEI and FBC are forecast on an annual basis, and the variances between forecast and actual amounts are trued up through the Flow-through deferral account or through other deferral accounts. FortisBC's forecast O&M is discussed in Section C2.5.

Overall, FortisBC's O&M proposals reflect the Companies' continued focus on efficiency, including the optimization and prioritization of available resources, while also responding to the changes in the operating environment. Please refer to Appendices C2-1 through C2-3 for the details of the actual O&M by department during the Current MRP term.

2.2 FEI 2024 BASE O&M

2.2.1 FEI 2024 Base O&M Calculation

FEI established the 2024 Base O&M for the Rate Framework using the same method that it used to establish the 2019 Base O&M in the Current MRP, which was approved by the MRP Decision and Order G-165-20.

[66] The approved 2025 growth and inflation factors will be determined in a separate proceeding to set 2025 rates. The approved X-Factor will be determined in this proceeding.

Consistent with past practice, FEI has used 2023 Actual expenditures (2023 Approved Base O&M less savings) as the starting point for the 2024 O&M Base, as 2023 is the latest year for which actual expenditures are available, and therefore, the most recent historical representation of the level of O&M funding required to operate FEI's system safely and reliably and to maintain its overall service quality level.

By starting with the 2023 Actual expenditures, the savings achieved in 2023 (i.e., $4.322 million) are accounted for in the calculation of the 2024 Base O&M. With the starting point (i.e., 2023 Actuals) established, the 2024 Base O&M is then developed by incorporating various adjustments, including the removal or addition of exogenous and flow-through items, application of the 2024 formula inflator, the inclusion of amounts to reflect the new activities that are occurring in 2024 that would not be reflected in the 2023 Actual amounts, and incremental net funding which FEI requires during the Rate Framework term.

The process to calculate the 2024 Base O&M is therefore as follows:

1. Start with 2023 Actual Base O&M, which is the 2023 Approved Base O&M reduced by the 2023 savings achieved.

2. Adjust for previously approved exogenous factors and items currently in formula O&M that will be re-classified as Forecast (flow-through) O&M during the term of the Rate Framework. This adjustment is required to align the 2023 Actual Base O&M with the scope of the formula O&M for the term of the Rate Framework.

3. Multiply by the 2024 formula inflator[67] as approved in the Annual Review for 2024 Delivery Rates. This adjustment is required to state the 2023 Actual Base O&M in 2024 dollars.

4. Add amounts for required spending that will begin in 2024. As FEI started with 2023 Actual expenditures, this adjustment is required to derive a projection of FEI's 2024 Base O&M requirements.

5. Add net incremental funding required beginning in 2025 and over the term of the Rate Framework. This is the final adjustment, which increases the projected 2024 Base O&M to the amount that will be required over the term of the Rate Framework, but stated in 2024 dollars.

Table C2-1 shows how the 2024 Base O&M is calculated using the above adjustments. Each adjustment is discussed in the sections that follow.

[67] 2024 Formula inflator includes inflation less productivity, and customer growth.

Table C2-1: FEI 2024 Base O&M ($ millions)

2023 Approved Base O&M	299.302
2023 Savings - Base O&M	(4.322)
2023 Actual Base O&M	**294.980**
Adjustment for exogenous factor and flow through items (in 2023 dollars)	(18.007)
2024 Base O&M (in 2023 dollars)	**276.973**
2024 Inflator	1.0443
2024 Base O&M (in 2024 dollars)	**289.243**
Adjustments for Required 2024 Spending (in 2024 dollars)	3.232
2024 Projected Base O&M	**292.475**
Net incremental funding for Rate Framework (in 2024 dollars)	9.652
2024 Base O&M for Rate Framework	**302.127**

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2.2.2 Adjustments for Exogenous Factor and Flow-through Items

As discussed below, there is one exogenous factor adjustment required for 2021 flooding and remediation activities, and there are two adjustments proposed related to flow-through expenditures.

2.2.2.1 Exogenous Factor

It is necessary to make an adjustment of $0.576 million to add back a one-time credit recorded in the 2023 Actual formula O&M related to the 2021 flooding and remediation exogenous factor event. Please refer to Section C1.6.1 for details of this exogenous factor event and the calculation of the one-time credit.

2.2.2.2 Flow-Through Items

In addition to the exogenous factor discussed above, there are two flow-through adjustments included in the "Adjustments for exogenous factor and flow through items" line in Table C2-1 above. The first adjustment is to remove the O&M costs that will be impacted by FEI's Advanced Metering Infrastructure (AMI) project from formula O&M, and the second adjustment is to include the O&M costs for the Inland Gas Upgrade (IGU) and Coastal Transmission System (CTS) Transmission Integrity Management Capabilities (TIMC) projects in formula O&M.

2.2.2.2.1 ADVANCED METERING INFRASTRUCTURE PROJECT

In response to the BCUC's approval of FEI's AMI Project CPCN Application in May 2023,[68] FEI is proposing to reclassify certain costs currently in formula O&M to forecast (flow-through) O&M during the Rate Framework term. The reason for the proposed reclassification is that FEI will be in the process of deploying AMI during this period and the related O&M costs currently included

[68] Decision and Order C-2-23 dated May 15, 2023.

in the formula are expected to decline as manual metering reading activities decrease. To properly track and report on the annual costs and savings, FEI proposes to forecast these costs in each Annual Review and provide a discussion of its expectations for the costs for the coming year, with variances between forecast and actual costs recorded in the Flow-through deferral account and returned to or recovered from customers in subsequent years. This treatment will result in customers paying only the actual costs incurred, which is consistent with the approved treatment of CPCN expenditures.

This treatment was discussed in the response to BCUC IR1 20.2 in the FEI AMI Project CPCN proceeding, provided below for reference.

BCUC IR1 20.2

Please discuss how the O&M savings from the proposed AMI project will be treated under FEI's current Multi-Year Rate (MRP) Plan and whether the financial analyses account for this treatment.

Response:

Consistent with the BCUC's past recommendation to FEI, "if capital associated with a particular CPCN is excluded from the formula, the CPCN review of that project should include an assessment by the Commission of any potential impact of the project on O&M. If appropriate, an adjustment to the formula based O&M spending envelope should then be made."

FEI considers that, if approved, the net O&M impact of the AMI Project warrants an adjustment to the formula O&M. FEI plans to adjust the Base O&M unit cost under the formula O&M to remove the existing meter reading costs and forecast the new AMI O&M costs as flow-through O&M costs/savings until the end of the MRP term (2024). FEI will provide the amounts for this adjustment (and for any regular capital expenditure changes) in the Annual Review following approval of this CPCN.

Post MRP, the O&M treatment for the AMI O&M will depend on the regulatory framework at that time.

In order to treat O&M costs impacted by the AMI project as a flow-through item, FEI has removed the 2023 Actual Meter Installation, Meter Reading, Operations, Customer Service and Meter Shop O&M costs from the Base O&M unit cost.[69]

[69] Formula O&M costs expected to be impacted by the AMI project were outlined in Section 6.2.2 (page 105) of the FEI AMI Project CPCN Application.

Table C2-2: Adjustments to FEI Base O&M for Approved AMI Project[70]

Item	2023 Actuals ($ millions)
Meter Installation O&M	0.733
Meter Reading O&M	15.142
Operations O&M	2.122
Customer Service O&M	1.480
Meter Shop O&M	0.306
Total Gross O&M	**19.783**

The following is a brief description of each of the O&M items noted in the table above:

- Meter Installation O&M: This is the portion of meter installation costs currently recorded in O&M. The majority of meter installation costs are capitalized and included in Sustainment capital.
- Meter Reading O&M: This consists of the manual costs of reading meters and the cellular costs for current large commercial and industrial meters.
- Operations O&M: This is the cost for activities completed by field crews that are impacted by the AMI project, specifically meter trouble calls, meter reads, meter identifications, disconnects, unlocks, cathodic protection data gathering, and odour measurement.
- Customer Service O&M: This is the cost for the customer service activities impacted, include billing investigation and exceptions, meter reading coordinator workload, vacant premises processing, and meter switching identification and validation.
- Meter Shop O&M: This is the cost for activities related to the volume of meter exchanges and specifically, the meter sampling recall program. FEI will temporarily halt the meter sampling program during AMI deployment. While the program will resume after deployment, there will be a significant decrease in the volume of meters included in the sample as a result of the entire meter fleet being replaced.

Treating these O&M costs as forecast (flow-through) O&M during the AMI project implementation recognizes the uncertainties in the deployment schedule, and ultimately enables the O&M savings caused by the AMI project to be fully passed on to customers.

[70] The numbers presented in this table are on a Gross O&M basis, instead of Net O&M after capitalized overheads, as presented in the AMI Project CPCN Application.

2.2.2.2.2 INCREMENTAL INTEGRITY ACTIVITIES RELATED TO THE IGU AND CTS TIMC PROJECTS

During the Current MRP term (and subsequent to the establishment of the 2019 Base O&M for the Current MRP term), the BCUC granted CPCNs for the IGU project[71] and the CTS TIMC project.[72]

Consistent with the treatment approved in the MRP Decision[73] for incremental expenditures which occur as a result of CPCN projects during the term of the Current MRP, FEI applied for flow-through treatment of incremental O&M expenditures resulting from the IGU and CTS TIMC projects in the Annual Review for 2023 Delivery Rates. These incremental O&M expenditures, forecast to be $0.300 million for the IGU project and $0.700 million for the CTS TIMC project, were approved to be treated as flow-through O&M as part of the Annual Review for 2023 Delivery Rates Decision and Order G-352-22.

As FEI is now establishing the 2024 Base O&M for the Rate Framework, FEI proposes to re-classify the incremental IGU and CTS TIMC project O&M expenses from flow-through to formula.

In both the 2023 and 2024 Annual Reviews, FEI forecast $0.300 million for incremental O&M resources associated with the IGU project. FEI considers $0.300 million to be an appropriate amount to add to 2024 Base O&M. The costs, as explained in the 2023 and 2024 Annual Reviews, are for engineering analysis of In Line Inspection (ILI) data as well as planning and implementing operational responses, such as identifying future integrity digs or other monitoring activities. The 2023 Actual O&M spending was consistent with the 2023 Approved amount of $0.300 million.

In both the 2023 and 2024 Annual Reviews, FEI forecast $0.700 million for incremental resources associated with the CTS TIMC project. In assessing its resourcing needs starting in 2025 (i.e., the start of the Rate Framework), FEI considers $0.900 million to be an appropriate amount to add to 2024 Base O&M. With the additional $0.200 million, FEI will be hiring a fourth senior technical resource from approximately mid-2024 onward. This resource is associated primarily with incremental ILI analysis activities. The CTS TIMC project resources are similarly associated with incremental ILI activities, as well as performing Quantitative Risk Assessments (QRAs). The 2023 Actual O&M spending was consistent with the 2023 Approved amount of $0.700 million.

For the incremental O&M expenditures associated with the recently approved[74] Interior Transmission System (ITS) TIMC project, FEI is currently in the process of evaluating requirements and may request incremental O&M funding at a later date through the Flow-through mechanism, similar to the approach in the Current MRP for the IGU and CTS TIMC projects.

2.2.3 Adjustments for Required 2024 Spending

Since FEI used 2023 Actual expenditures as the starting point for determining its 2024 Base O&M, any new O&M expenditures that will begin in 2024 are not yet reflected in the Base O&M and

[71] Approved by Order G-12-20.
[72] Approved by Order C-3-22.
[73] MRP Decision, pp. 132-133.
[74] Approved by Order C-1-24 on January 15, 2024.

therefore need to be added. There are four items, totalling to $3.232 million, that will commence in 2024 and are not reflected in 2023 Actual expenditures. These are: (1) new facility lease costs of $1.450 million; (2) incremental costs to support LNG Operations of $0.600 million; (3) incremental costs to support the Long-Term Gas Resource Plan (LTGRP) of $0.382 million; and (4) incremental costs for decarbonization and sustainability of $0.800 million.

2.2.3.1 New Facility Lease Costs

As part of the Kelowna Space Project that was reviewed in detail in FEI's and FBC's Annual Reviews for 2023 Rates, FortisBC will be occupying new facilities in the Kelowna region to meet its space capacity needs starting in 2024. In the 2023 Annual Reviews, FEI and FBC received approval for updated Other capital expenditure forecasts for 2023 and 2024, including capital expenditures for the Kelowna Space Project.[75] As part of this project, both FEI's and FBC's Shared Services Departments (Support Services) located in Kelowna relocated to a new leased office facility in early 2024. The incremental leasing (O&M) cost for the site to be added to Base O&M is $0.900 million, shared between FEI and FBC based on the number of employees for each Company. FEI's allocation is approximately $0.600 million.

Additionally, FEI has entered into a lease for a new contact centre facility in Prince George and is in the process of relocating its employees to this new facility. The incremental leasing (O&M) cost to be added to Base O&M is $0.850 million. FEI is currently evaluating options for the existing facility, including selling or leasing the property.

These two items total to $1.450 million in 2024 dollars and have been added to the 2024 Base O&M as shown in Table C2-1 above.

2.2.3.2 LNG Operations

Additional costs are required for operational support at both the Tilbury and Mt. Hayes facilities in 2024. At Mt. Hayes, two operator positions are being added to ensure working alone requirements are met for emergency situations as well as to provide adequate staffing for increased liquefaction requirements experienced at the facility over the past five years. Two operator positions are also required at Tilbury to ensure full vacation and sick coverage and full 24/7 coverage for the operation of that facility. The total cost of these four positions is $0.600 million.

2.2.3.3 Long-Term Resource Planning

Long-term resource planning is a critical function for FortisBC as it assesses the future energy requirements of customers and options to meet them over the long-term, providing the context and framework for future regulatory applications, including CPCNs. The requirement to submit long-term resource plans to the BCUC is set out in section 44.1 of the UCA. During the ongoing energy transition and the rapidly changing external environment, FortisBC's resource planning activities are becoming less cyclical and more ongoing, with long-term resource plans being

[75] Approved by Orders G-352-22 (FEI) and G-382-22 (FBC).

developed and filed with the BCUC on a more frequent basis. With new sources of supply, such as RNG and hydrogen, and less certainty in future gas demand, resource planning has increased in complexity.

The BCUC recently issued its decision on FEI's 2022 LTGRP.[76] As part of the decision, the BCUC directed FEI to address a number of matters in the next LTGRP and to undertake a variety of detailed analyses, including making changes to its modelling. Further, the BCUC directed FEI to file its next LTGRP on or before March 31, 2026 which, given the time needed to develop and consult on the plan, means that FEI must commence work immediately.

In consideration of the recent decision on FEI's 2022 LTGRP, the increasing complexity of resource planning for both gas and electric utilities, and the need to continue to advance the integration of gas and electric resource plans, the Companies have identified an immediate need for three additional positions in 2024 to support their long-term resource planning activities. The new roles will provide analysis and research and manage internal and external stakeholder engagement. Examples of these activities include:

- Analysis related to and forecasting of load duration curves;
- Integrating renewable gases, including hydrogen, into the supply portfolio;
- Analysis related to an integrated (i.e., diversified) gas and electric system;
- Increasing stakeholder and Indigenous engagement related to resource planning; and
- More collaboration with BC Hydro on load forecasting and scenarios.

The total cost of these three positions, including supporting costs, is $0.552 million, with the costs being allocated approximately two-thirds to FEI and one-third to FBC (FEI's share of the costs is equal to $0.382 million).

2.2.3.4 Decarbonization and Sustainability

To comply with growing requirements related to GHG emissions and sustainability reporting and disclosures, FortisBC created the Decarbonization and Sustainability department in Q4 2023. Policy makers, regulators, customers, capital markets, and other key stakeholders have broadened their requirements for reporting, compliance and disclosure of FortisBC's progress towards decarbonization and other sustainability goals. The legal and reputational risks associated with compliance are also growing, and FortisBC, like many other companies, is responding by developing frameworks to advance sustainable practices and report on progress towards sustainability commitments, which requires analytical resources, systems, and controls.

For example, BC Energy Regulator (BCER) methane reporting requires increased measurement and reporting with documented leak detection and repair (LDAR) programs. In addition, GHG quantification for reporting has become more complex, with less reliance on asset-based emission factors and an increasing requirement for measurement. There are also reporting requirements

[76] Decision and Order G-78-24 dated March 20, 2024.

associated with three carbon trading systems that FEI is expecting to report under, including the BC Low Carbon Fuels Standard, Environment and Climate Change Canada's Clean Fuel Regulation, and the BC Output Based Pricing System.

In addition, Canadian regulators have enhanced the requirements for environmental disclosure related to GHG emissions and climate risk. Guidance for Environmental, Social, and Governance (ESG) reporting continues to evolve with a shift away from voluntary reporting to proposed required reporting from regulators and standard setters globally, including:

- Proposed National Instrument 51-107, Disclosure of Climate-related Matters by the Canadian Securities Administrators (CSA);
- Proposed Rule Release No. 33-11042, The Enhancement and Standardization of Climate-Related Disclosures for Investors by the Securities Exchange Commission (SEC); and
- General Requirements for Disclosure of Sustainability-related Financial Information and Climate-related Disclosures by the Canadian Sustainability Standards Board (CSSB) through the recently published exposure drafts of CSDS 1 and 2. While the standards will be voluntary, they will inform Canadian regulators in deciding on mandatory rules for sustainability and climate-related disclosure. The CSSB is suggesting that its standards apply on or after January 1, 2025.

Consistent with the increased need for data accumulation, analysis, validation, verification, and controls to support climate-related disclosures, FEI requires additional resources to administer and support its participation.

To support these reporting and compliance requirements, FEI requires $0.800 million starting in 2024 for two new positions, as well as costs related to membership dues, external audit fees and consulting costs.

2.2.4 Net Incremental Funding for the Term of the Rate Framework

To address key issues and changes in its operating environment, FEI requires net incremental O&M funding to be added to its 2024 Base O&M. The following table and discussion describe the net incremental O&M funding required over the term of the Rate Framework, organized by the respective business drivers.

Table C2-3: FEI Net Incremental Funding for the Term of the Rate Framework

Business Driver	$ millions
Government, Indigenous and Community Engagement	2.499
Environment and Sustainability	1.800
Corporate Security	1.607
Technology	2.946
System Operations and Adaptation	0.800
Total	**9.652**

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2.2.4.1 Government, Indigenous and Community Engagement

As discussed in Section B1 and further below, there continue to be substantial shifts within the policy environment that are significantly influencing FortisBC and its customers, particularly now that policies are reaching implementation and are affecting FortisBC's operations. At the same time, requirements for Indigenous engagement are increasing and becoming more complex, requiring additional resources and funding to build and maintain relationships.

Table C2-4 below provides the net incremental funding requests for this area, followed by a discussion and rationale for the requests. For context, FEI has also provided the historical actual expenditures since the start of the Current MRP and the projected base funding for 2024.

Table C2-4: FEI Government, Indigenous and Community Engagement Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Government Relations and Public Policy	2.041	2.202	2.246	2.510	2.621	0.234
Community and Indigenous Relations	4.624	4.279	4.810	5.455	5.697	1.990
Customer Engagement	6.878	5.730	6.424	6.942	7.250	0.275
Total	**13.543**	**12.211**	**13.480**	**14.907**	**15.567**	**2.499**

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Each of the three identified areas are discussed further below.

2.2.4.1.1 GOVERNMENT RELATIONS AND PUBLIC POLICY

Climate policy at the local, Indigenous, provincial and federal levels of government are both a significant challenge and opportunity for FortisBC. Since the beginning of the Current MRP, FortisBC has faced a rapidly evolving policy environment, significantly influenced by government responses to climate change. These policy changes, aimed at reducing GHG emissions and promoting cleaner energy solutions, have created a challenging and complex operating landscape for utilities. FortisBC must navigate a combination of government climate plans, targets, legislation, and regulation to enable its Clean Growth Pathway. Examples of government policy initiatives are highlighted in Section B1. These policies collectively demand an increase in FortisBC's efforts to contribute to policy development, advocate for positive policy outcomes for customers, and support the implementation of new policies.

To support policy development and advocate on behalf of customers, FortisBC is challenged to undertake increased analysis to identify positive policy outcomes, respond to consultation requests at various levels of government and engage in detailed policy development with government staff. For example, in 2020, the Companies helped develop the analysis and related

Pathways for British Columbia to Achieve its GHG Reduction Goals report (Pathways Report)[77] to inform optimal ways to achieve government GHG and economic targets. The Companies then used the Pathways Report to guide their participation in government policy discussions on behalf of customers.

Accordingly, FortisBC is requesting new funding of $0.300 million, which will be allocated between FEI ($0.234 million) and FBC ($0.066 million). The new funding consists of two new positions. These positions will be responsible for conducting analyses to identify policy outcomes and ensuring new or amended policies align with FortisBC's objectives to provide safe, affordable, reliable, and resilient service while also supporting provincial GHG reduction targets.

2.2.4.1.2 COMMUNITY AND INDIGENOUS RELATIONS

Table C2-5 below provides the breakdown of the funding request for Community and Indigenous Relations.

Table C2-5: Breakdown of Community and Indigenous Relations Net Incremental Funding ($ millions)

Breakdown of Net Incremental Funding	Net Incremental Funding
Community Engagement	0.480
Community Investment	0.250
Total Community	**0.730**
Indigenous Relations Engagement	0.560
Advancing Reconciliation	0.700
Total Indigenous	**1.260**

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Community Engagement and Investment

Community Engagement

In addition to the resources identified above for engagement with federal and provincial governments, FEI requires incremental resources within its Community Relations team to support the engagement required for capital projects, ongoing operations, and the implementation of climate policy at the local level.

Increasingly restrictive municipal climate policies, uncertainty around FEI's role in supporting provincial and municipal decarbonization goals, and a political environment that favours electrification, are just a few of the challenges in FEI's municipal operating environment.

[77] https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/guidehouse-report.pdf.

To ensure FEI's customers' needs are heard and to support an orderly transition to a lower carbon future, there is a need to engage in systematic, structured, and frequent dialogue at multiple levels within a municipality, including elected officials, senior city staff, and departmental leads (planning, permitting, etc.). For example, with the increasing number of municipalities implementing stringent climate policies, particularly in the Metro Vancouver Regional District and Vancouver Island areas (where a significant portion of FEI's customers reside), dedicated resources are required for one-on-one engagement to address the challenges of the accelerated adoption of polices such as the Zero Carbon Step Code. A low level of awareness around energy implications and solutions requires multiple iterations of engagement.

Additionally, an increasing number of organized voices opposing low carbon gaseous energy solutions requires continued engagement in the community with a broad range of stakeholders, including chambers, boards of trade, and business associations. Increased effort is required to ensure that the interests of gas customers are raised and considered.

Other priorities in the next few years include renegotiation of operating agreements that will be expiring with municipalities in the Interior, and building capacity to field requests for new or updated operating agreements in the Lower Mainland. Over the term of the Current MRP, FEI renegotiated an average of one to two Interior operating agreements per year. FEI now has 14 operating agreements coming due for renewal at approximately the same time, and will see a significant increase in negotiation activity over the upcoming three years.

Further, engagement with municipalities around FEI's operations and sustainment work has increased significantly over the past few years and there is increased need for the Community Relations team to be involved to help coordinate and provide resolution for high-risk operations and sustainment work.

The total $0.480 million requirement is for three Community Relations/Public Policy Manager positions focused on Municipal and Climate Policy, along with supporting costs (non-labour) to cover increased associated travel and administration.

Community Investment

Increased funding is required to expand the Community Investment program for the communities that FortisBC serves and operates in. Creating community partnerships improves both the ability to work in these communities and the effectiveness of those activities. These investments also improve the pride that FortisBC employees take in their work and help to attract and retain top talent while maintaining the trust that customers have in FortisBC's business through knowing that the Companies are actively engaged with the communities they serve. The Companies invest in four key areas to help contribute to the well-being of BC's communities:

- **Safety:** these are projects that promote natural gas and electrical safety, personal safety and accident avoidance;
- **Education:** these are projects that promote natural gas and electrical trades, literacy and leadership;

- **Indigenous Initiatives:** these are projects that meet the unique needs of Indigenous organizations or communities; and
- **Environment:** these are projects that directly benefit the environment.

Through this program, FortisBC currently provides $1.100 million in donation funding to support grassroots initiatives to more than 126 municipalities and regional districts and 58 First Nations communities, of which $0.750 million is allocated to FEI and the remaining $0.350 million is allocated to FBC. Consistent with FortisBC's efforts to increase engagement with local and Indigenous communities across the Province, FortisBC has experienced an increase in funding requests. Funding requests from Indigenous communities in particular have increased, with this segment making up nearly 30 percent of the overall Community Investment spending in 2023.

Along with these grassroots initiatives, the Community Investment program also provides funding for business development such as conferences, forums and workshops. These include conferences for local governments, Indigenous economic development, climate change and Net Zero collaboration, and local chambers. There has been an increase in these business development requests to connect with local politicians and business leaders, which accounts for approximately 25 percent of the overall Community Investment spending.

FEI requires incremental funding of $0.250 million to extend the support for the communities it serves. The increase to FBC's funding amount is discussed in Section C2.3.4.1.2.

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Indigenous Relations and Reconciliation

Indigenous Relations and Reconciliation is an increasingly predominant activity and continues to require enhanced engagement, relationship building, capacity support, economic inclusion and community investment.

There have been significant changes in the policy landscape as it relates to Indigenous rights and reconciliation in recent years. This includes policy changes, legal decisions, and discoveries in communities – all of which have increased the need for and expectations around engagement with Indigenous Nations since the filing of the 2020-2024 MRP Application. In November 2019 and June 2021 respectively, the Province and Government of Canada enacted laws to affirm the application of the UN Declaration for the Rights of Indigenous Peoples (the Declaration) to provincial and federal laws.[78] Both levels of government have also developed action plans to implement the Declaration and align legislation with their respective Declaration Acts. The Declaration is a foundational document which provides a framework for reconciliation and cooperative relations founded on principles of justice, democracy, and human rights. The adoption of the Declaration, both federally and provincially, marked a significant step towards reconciliation and has significant impacts on FortisBC.

[78] Declaration on the Rights of Indigenous Peoples Act, SBC 2019 c. 44 and United Nations Declaration on the Rights of Indigenous Peoples Act, SC 2021 c. 14.

In 2019, a new British Columbia *Environmental Assessment Act* (EAA) came into force, which introduced changes to the environmental assessment process to incorporate the concept of Free, Prior and Informed Consent (FPIC) and significantly broadens engagement requirements. The increased engagement requirements in the new EAA include a focus on seeking consensus and consent of Indigenous communities at stages throughout the process, (as well as a risk of litigation in the absence of consent), and also offers a mechanism for Indigenous Nations to opt into the EAA process, which can increase the number of Nations requiring engagement.

In response to the increased need for engagement and consensus seeking regarding FortisBC's operations, FortisBC must continue to enhance its engagement practices with Indigenous communities. This involves learning the Indigenous communities' protocols, governance structures, and community engagement systems. FortisBC is committed to learning and working with communities so that operations and project development on traditional territories is undertaken in a way that respects Indigenous rights and title. As more and more proponents and companies approach Indigenous communities to engage, many communities are facing capacity constraints and competing priorities, which can create delays for timelines to review and work through issues.

There have been several recent decisions which are shaping the legal landscape with respect to the rights and claims of Indigenous nations in BC. In June 2021, the BC Supreme Court found that the cumulative impacts of industrial development in Treaty 8 territory infringed the Blueberry River First Nation's treaty rights. This decision required the Province to establish mechanisms to assess and manage cumulative impacts of industrial development. In the February 2024 case of *Thomas and Saik'uz First Nation v. Rio Tinto Alcan Inc.*, the BC Court of Appeal confirmed that Indigenous nations have the ability to pursue tort claims against private parties based on impacts to proven Aboriginal rights when those Aboriginal rights are sufficiently connected to lands relied on by Indigenous nations. In order to establish such a claim against a private party, Indigenous nations must first establish their Aboriginal rights against the Crown, and where a private party's conduct has been statutorily authorized, this can be a full defence against the claim. Importantly, this decision confirms a broader set of circumstances in which Indigenous nations may seek to bring claims against private parties, including owners of new energy projects and existing facilities, based on impacts to Aboriginal rights and title.

Furthermore, Indigenous communities increasingly expect that Indigenous-led policy documents are considered and actioned, including the Truth and Reconciliation Commission's (TRC's) Calls to Action and the National Inquiry into Missing and Murdered Indigenous Women and Girls. The former outlines the impact of the Residential School System in Canada and provides recommendations (calls to action) for government and the private sector. The recent discoveries of remains at former Residential School sites in British Columbia and across Canada in the last two years have put a bigger spotlight on this period of Canadian history, and the action that is needed and expected from communities. Further, Indigenous communities are increasingly interested in participating in discussions regarding energy planning and have greater expectations for economic opportunities – including supply chain, workforce development and hiring, and partnership opportunities.

In light of the above changes in the Indigenous relations and reconciliation landscape and the law, engagement with Indigenous communities has become an important and growing component of FortisBC's business, requiring additional staff and resources. Furthermore, engagement is increasingly an ongoing process that takes place over an extended, multi-year period. Maintaining positive relationships and continuing to build relationships with Indigenous leaders involves a focus on listening as well as demonstrating community benefit from FortisBC operations and/or projects, such as through employment, training, and business opportunities. Much of FEI's infrastructure was developed and constructed when laws around consultation and engagement with Indigenous communities were different than they are today. This creates some unique challenges and requires increased engagement with Indigenous communities, particularly where resolving historical grievances is part of moving new projects forward. For example, FEI is working with the Okanagan Indian Band to modernize a right of way agreement through reserve lands that have been in place since the 1950s. This requires enhanced engagement and will impact all future projects.

FortisBC's increasing focus on renewing and strengthening its relationships with Indigenous peoples, communities, and Nations is consistent with the increased commitment at the provincial and federal levels. The Company recently achieved Progressive Aboriginal Relations (PAR) Silver Certification and will continue to enhance its engagement practices, including advancing Indigenous inclusion and committing additional staff and resources to building capacity in Indigenous communities. This will assist in gaining vital support for required projects. Maintaining and building positive relationships is key to securing broad support for FortisBC's future projects, business operations and commitment to the PAR Certification.

The following section outlines the initiatives and resources required by FEI to meet the expectations of Indigenous communities and to continue to enhance engagement, Truth and Reconciliation efforts, and capacity building.

Indigenous Relations Engagement

To support enhanced engagement activities, as described above, FEI's Community and Indigenous relations department requires net incremental funding of $0.560 million for four new Community & Indigenous Relations/Initiatives Manager positions. These roles will support key activities related to engagement, Indigenous initiatives, and advancing reconciliation efforts. Building relationships takes time and resources. This can only be done with human capacity to build authentic and meaningful relationships with Indigenous communities.

Advancing Reconciliation

In addition to the resources required to implement enhanced engagement activities, there are several initiatives that need additional funding to support Truth and Reconciliation efforts. FEI requires $0.700 million for initiatives and administration associated with the following:

- Advancement of Indigenous agreements for operational certainty and building mutually beneficial relationships.

- Advancement of relations with key Indigenous organizations, including working with Indigenous consultants to continue to support many internal and external initiatives such as Indigenous awareness training, communications, engagement strategies, and archaeological and environmental assessments.
- Implementing FortisBC's socio-economic impact program that strives for an inclusive process, and further develop mechanisms to support Indigenous-owned businesses in becoming suppliers, contractors, and business partners on FortisBC's projects.
- Further developing and implementing Indigenous procurement supply chain initiatives to reduce barriers for Indigenous businesses to access opportunities, including networking opportunities such as business-to-business career fairs and supply chain workshops.
- Engagement on the role of the gas system in decarbonization and advancement of renewable gas partnership opportunities with First Nations.
- Supporting Indigenous Initiatives such as Indigenous Awareness training for employees that are an important part of TRC's Call to Action 92 for advancing reconciliation, as well as participating in cultural events and celebrating and honouring Indigenous days of significance broadly across the organization.

2.2.4.1.3 CUSTOMER ENGAGEMENT

FEI proposes to increase its communication resources starting in 2025 to support the increasing need and expectations that customers, and the public, have around receiving the information they need when they need it, which can occur in several ways (from in person to written or digital).

The incremental funding of $0.275 million is requested for two positions, an Events and Outreach position and a Digital Content Designer.

FEI requires an additional Events and Outreach position to ensure it can meet the increased expectations of the public to actively engage with them in person in their community. The public and customers interact with FEI on several areas of interest, including questions about rates, energy safety, energy efficiency programs and curiosity about how the energy transition may impact them. These opportunities are convenient for customers and provide an additional channel for contact with the organization.

FEI requires a Digital Content Designer to ensure that it delivers digital content that is easy for customers to find and understand. This position responds to customers increasingly seeking information in a "digital first" way.

2.2.4.2 Environment and Sustainability

Table C2-6 below provides the actual expenditures for environment and sustainability from 2020 to 2023, the projected base funding for 2024, and the net incremental funding to be added to the 2024 Base O&M.

Table C2-6: FEI Environment and Sustainability Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Environment and Sustainability	1.955	2.300	2.697	2.910	3.839	1.800
Total	1.955	2.300	2.697	2.910	3.839	1.800

As discussed in Section C2.2.3.4 above, FortisBC's Decarbonization and Sustainability department was created in response to increased reporting and compliance requirements related to GHG emissions and sustainability, which are driving the need to add additional resources, both in 2024 and 2025. In addition, environmental and archaeological regulatory requirements continue to increase through new legislation or through changes to existing legislation.

There are numerous environmental and archaeological regulatory requirements and risks associated with FortisBC's operations, and a multitude of federal, provincial, regional, and municipal permits and approvals that are typically required. FortisBC's work involves development in urban, rural, and natural areas with potential environmental impacts on watercourses, sensitive ecosystems (including riparian areas), at risk species, agricultural areas, and archaeological sites which need to be adequately assessed and managed. There are often significant regulatory triggers under the *Fisheries Act*, *Species at Risk Act*, *Water Sustainability Act*, *Environmental Management Act*, *Declaration on the Rights of Indigenous Peoples Act (DRIPA)*, and *Heritage Conservation Act* (HCA). The federal and provincial regulatory requirements are anticipated to continue to increase over the next five years with recent new and pending regulatory requirements.

Furthermore, changes to the Contaminated Sites Regulation (CSR) under the *Environmental Management Act* in 2021 and 2023 have triggered more Stage 1 & 2 Preliminary Site Investigations (PSIs) requiring significant environmental support. Any municipal permit required for a site with commercial/industrial activities (Schedule 2 activities) can trigger full PSIs unless an exemption applies. In addition, as of March 2023, soil relocation (>30m^3) from Schedule 2 sites also triggers PSIs and soil receiving sites are requiring environmental data from all sites (including roadways), regardless of any Schedule 2 activity. The PSIs and soil testing require significant environmental support for the duration of the work, from initial screening, managing consultants, reviewing reports, and providing direction to business units for a multitude of activities ranging from day-to-day service installations to multi-year main extensions.

Ongoing process improvements at FortisBC's facilities are required to ensure proper storage and disposal of hazardous and non-hazardous waste (including soils), such as improved waste categorization and segregation practices and increased waste pick-ups to avoid accumulation and meet increasing regulatory requirements.

New requirements are also proposed to come into force in 2024 under the *Transportation of Dangerous Goods Act* (TDGA) and associated regulations related to the creation of a job specific

TDGA training course and registration of all sites with dangerous goods. FortisBC must ensure training is developed to comply with the new requirements and support Operations with the logistics of dangerous goods movement to ensure that all affected sites are registered.

The implementation of DRIPA has resulted in increased regulatory requirements for Indigenous review and consultation. As many of the concerns expressed by Indigenous communities are related to the protection of environmental and archaeological resources, an increased workload will result to ensure Indigenous communities' concerns are addressed through project planning, assessment, permitting and execution. For example, the HCA is currently being revised to incorporate the UNDRIP/DRIPA principles. FortisBC anticipates increased assessment and permitting requirements for heritage/archaeological resource management. It is anticipated that changes to the HCA will be passed into legislation in the Fall of 2024.

FEI requires net incremental funding for environment and sustainability of $1.800 million related to the following areas:

- Increased scope/scale of activities/projects requiring environmental review and environmental management during implementation;
- Increased regulatory/compliance requirements;
- Increased GHG management and reporting requirements;
- Increased carbon accounting and management;
- Archaeological permitting costs;
- Increased environmental (non-regulatory) reporting; and
- Increased consulting costs for environmental risk management.

Of the total $1.800 million required, $0.700 million is estimated for ongoing requirements, with the remaining $1.100 million estimated to be attributable to implementing new codes and regulations required or anticipated in the following areas:

- Labour: Environmental Program Lead (Contaminated Sites Regulation) to support increased requirements/activities;
- Labour: Environmental Program Lead (Transportation of Dangerous Goods/Hazardous Waste Regulation) to support increased requirements/activities;
- Labour: Archaeologist to support increased requirements/activities;
- Labour: Carbon Accounting Lead (GHG) to support new compliance reporting requirements;
- Labour: Carbon Accounting Technician (GHG) to support new compliance reporting requirements;

- Labour: Additional Sustainability Program Manager to support increased sustainability reporting;
- Non-labour: Increased archaeology permits/compliance costs;
- Non-labour: Increased Contaminated Sites Regulation compliance costs/consulting; and
- Non-labour: Increased GHG emissions/carbon accounting costs.

FBC's funding request in this area is discussed in Section C2.3.4.2.

2.2.4.3 Corporate Security

The Corporate Security department manages cybersecurity, physical security, business continuity programs, and emergency management programs for all of FortisBC's business areas. The group is responsible for the security of corporate and operational technologies and assets, the development and maintenance of business continuity plans, and the development, maintenance and exercising of emergency management and response plans.

FortisBC is investing more in cybersecurity, physical security, business continuity and emergency management to manage the increasing and evolving risks. FortisBC requires additional resources to deploy and sustain technologies that detect and mitigate the growing cyber and physical threats, enable swift response to security incidents, improve the security of FortisBC's assets, and enhance emergency response and business continuity capabilities to respond to increasing climate related events.

Table C2-7 below provides FEI's actual expenditures for corporate security and business continuity from 2020 to 2023, the projected base funding for 2024, and the net incremental funding to be added to the 2024 Base O&M. FBC's funding request in this area is discussed in Section C2.3.4.3.

Table C2-7: FEI Corporate Security Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Corporate Security	3.640	3.055	3.465	4.068	4.248	1.607
Total	3.640	3.055	3.465	4.068	4.248	1.607

Additional cybersecurity resources are required to enhance FortisBC's ability to discover and monitor for security threats, perform threat hunting (i.e., the practice of searching for cyber threats that may have evaded detection tools), and expand the cybersecurity operations centre to enable additional alert monitoring and threat responses, and to improve visibility and coordination between information systems, operation technology and cybersecurity. Cyber threats have changed and become more sophisticated. Phishing scams are on the rise, not just online but also through texts and voice calls. These scams may aim to access customer funds or information by

impersonating FortisBC. Additional security efforts are needed to protect customers and employees from these evolving threats.

The net incremental funding for physical security is for additional resources needed to enhance FortisBC's security operations and expand its security operations centre. These funds will enable additional monitoring of alerts, allow for improved responses to security events, and will provide resources for additional physical security audits and assessments. Further, the additional funding will support the continued standardization of physical security practices and equipment across FortisBC.

Additional resources for Emergency Management are primarily required in response to the increase in climate related events that have been experienced over the past five years. There have been more demands on the emergency operations centre (EOC) and the team that operates it. This requires additional training and resources to ensure FortisBC can continue to respond to emergency events of any kind.

Net incremental funding required for FortisBC (FEI and FBC) is approximately $2.060 million. This is comprised of $0.420 million for three positions: one cybersecurity analyst, one physical security advisor, and one Emergency Program manager, with the remaining costs of $1.640 million for external contracted services across cybersecurity, physical security, and emergency management.

The total funding of $2.060 million will be allocated between FEI and FBC using the approximate number of employees as the cost driver, which results in a 78 percent allocation to FEI and a 22 percent allocation to FBC. FEI's and FBC's allocations are therefore $1.607 million and $0.453 million, respectively.

2.2.4.4 Technology

Technology services are responsible for identifying, designing, operating, and maintaining technology solutions to improve the delivery of service. Information Systems (IS) enable FortisBC's operations to provide responsive, secure, and simple access to information anywhere at any time. IS applications and delivery services manage the application portfolio and project delivery and execution, along with providing quality assurance of the systems landscape. IS enterprise and technology services manage IS business planning, enterprise and technology services, and enterprise data and analytics practices.

Table C2-8 below provides the actual expenditures for FEI software licensing fees and patching from 2020 to 2023, the projected base funding for 2024, and the net incremental funding to be added to the Base O&M. FBC's funding request in this area is discussed in Section C2.3.4.4.

Table C2-8: FEI Technology Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Software Licensing Fees	6.213	6.816	7.699	9.059	9.460	1.600
Patching[79]	-	-	-	-	-	1.346
Total	6.213	6.816	7.699	9.059	9.460	2.946

2.2.4.4.1 SOFTWARE LICENSING FEES

A software licensing fee is charged for the right to use, or maintain a copy of, software for operating and maintaining technology solutions in FortisBC's IS application portfolio.

Additional software licensing fees are needed for new systems software, along with renewal of existing software licenses, and for new licenses to support the addition of new users or expanded use of existing software. As older systems are replaced, the ongoing licensing costs of the new systems can be double or triple that of the older systems due to higher costs for the software.

Another contributing factor to the higher forecast of software licensing fees is that for the renewal and purchase of software, the trend in ownership of software application solution(s) is moving away from the current "on-premises" model to a different model of SaaS (Software as a service – Cloud). Some vendors are withdrawing the option of an "on-premise" solution that FortisBC currently owns, necessitating the transition to SaaS. As SaaS is a different ownership and support model, its ongoing costs are higher than the traditional "on-premise" model. On-premise licensing typically involves a higher initial capital cost with a lower O&M cost for ongoing maintenance licenses. This expected trend towards SaaS is forecast to increase software licensing costs for FortisBC.

For these reasons, FEI requires net incremental funding of $1.600 million. This estimate for the 2025 to 2027 timeframe is based on the current project list and incorporates recent pricing information available. The pricing information used includes actual licensing costs over the last four years as a guide (i.e., SaaS, on-premise) and/or recent budgetary estimates provided by vendors to determine the required licensing costs. Software support agreements currently have a one-to-three-year term, and most software agreements have been renewed during the Current MRP term, providing recent pricing information for forecasting costs for the Rate Framework. For renewal of software licenses that came due in 2023, FortisBC experienced annual increases in the 5 to 10 percent range. FortisBC is expecting this trend to continue for software license fees that come due during the period of the Rate Framework.

[79] No historical O&M expenditures are shown for years prior to 2024 as the costs were capitalized through the current managed service agreement and spread amongst the existing employee resources. There are currently no dedicated resources to patch systems.

2.2.4.4.2 PATCHING

Security patch management is the process of applying updates to hardware and software to fix security vulnerabilities. Patching is a key aspect of cybersecurity and information technology maintenance as it helps prevent attackers from exploiting known flaws in software or devices which could lead to the compromise of system reliability, including data integrity, confidentiality, or availability.

In recent years, both FEI and FBC have increased their expenditures for cybersecurity as the Companies respond to evolving cyber risks. Further increased sophistication in cyber threats has forced hardware and software companies to release updated code and operating system patches to counteract these threats. An increased frequency of these updates requires FortisBC to increase the cadence of the patch review and deployment process.

In addition to increased frequency, FortisBC's patch process must increase in scope to include all critical and non-critical applications. This includes review and assessment of available patches, testing, and deployment.

The frequency of off-cycle and zero-day[80] patches from hardware and software vendors has also increased and FortisBC needs to apply these patches to remediate the serious vulnerabilities that cannot wait for the next scheduled patch implementation cycle. Security patch management is completed by IS personnel with third party support.

FortisBC has a robust patching process to mitigate risk in the current threat landscape; however, patching must increase in frequency in response to expanded cybersecurity demands due to the increase in sophistication and frequency of cyber threats, which is broadening the threat landscape. FortisBC pushes patches to end-points via automation, but critical servers are patched manually. This involves extensive testing to ensure the systems perform as expected when returning to service.

FEI has over 300 applications, 5,200 end-points (computers and mobile devices), 1,100 servers, and 550 appliances.

FEI requires net incremental O&M funding of $1.346 million to support an increased cadence for security patching of hardware and software. This net incremental funding is comprised of $0.596 million, which is the non-capitalized portion of 12 technical and 2 management employees, and $0.750 million for managed services.[81] The total patch management program of $4.935 million is split between O&M and capital work, with the majority being capital. The associated increase in capital expenditures is discussed in Section C3.3.3.4.

FBC's O&M funding request in this area is discussed in Section C2.3.4.4 and the associated increase in capital expenditures is discussed in Section C3.4.3.4.

[80] An off-cycle and zero-day patch is a security fix that is released by a vendor outside of their regular patch release schedule and is required to be applied to address a recently discovered vulnerability to reduce risk of exploitation.
[81] A managed service is the practice of allowing a third-party company to support information technology operations.

2.2.4.5 System Operations and Adaptation

FortisBC's operations are focused on meeting customer expectations by improving processes that positively impact the efficiency and effectiveness of work completed. Table C2-9 below is a summary of the proposed funding requests. FEI's historical actual expenditures since the beginning of the Current MRP are provided for context along with the projected base funding for 2024. The net incremental funding represents the additional funds to be added to FEI's 2024 Base O&M.

Table C2-9: FEI System Operations and Adaptation Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Operate and Maintain LNG Plants	11.889	13.117	14.013	13.385	14.578	0.400
Workforce Development	8.148	8.628	8.501	8.879	9.272	0.400
Total	20.037	21.745	22.514	22.264	23.850	0.800

2.2.4.5.1 OPERATE AND MAINTAIN LNG PLANTS

In the Current MRP, FEI's LNG O&M costs are allocated between formula and forecast (flow-through) O&M based on whether they are fixed or variable costs. The portion of the total O&M costs allocated to formula O&M represents the fixed costs to operate the LNG plants, regardless of use. The remaining portion of total O&M costs are treated as flow-through outside the formula O&M. These costs represent the variable costs for the production of LNG (the liquefaction of natural gas, the dispensing of LNG and the handling and loading of tankers with LNG, etc.) where the costs fluctuate and are dependent on sales volumes. Accounting for these costs as forecast (flow-through) recognizes that these costs are dependent on sales volumes which are difficult to predict.

Table C2-9 above provides the combined recent historical expenditures to operate and maintain the Tilbury Base Plant, the T1A facility, and the Mt. Hayes facility. FEI requires additional resources to undertake incremental activities required to operate the facilities safely and reliably to meet ongoing operational and regulatory requirements as well as address incremental costs associated with higher run times at the Mt. Hayes facility.

Net incremental funding of $0.400 million is required for the following reasons:

- FEI plans to add a warehouse position to manage the flow of spare parts and consumables required for the ongoing operation of the Tilbury 1A facility.
- FEI requires funding to manage ongoing maintenance requirements over the term of the Rate Framework, including regulatory requirements to complete pressure safety valve

(PSV) recertifications, funding for increased material and facility costs related to increased Mt. Hayes production, and work to complete major equipment maintenance.

2.2.4.5.2 WORKFORCE DEVELOPMENT

As operational needs and the demographics of the workforce evolve, it is necessary to support the business by recruiting talent as well as investing in current employees to prepare for the future while continuing to address immediate business needs. The evolution of workforce skills and capabilities is also required to keep up with the evolving energy landscape, and to focus on emerging areas such as Indigenous employment contracts, diversity, equity and inclusion (DEI), and expectations of the labour market.

The $0.400 million net incremental funding provides for three additional positions focused on recruitment, corporate employee skills, and competencies development for all employees. Of the three positions, two are for recruitment and corporate employee training/development program(s), with the remaining position for supporting multi-year employment contracts with Indigenous communities.

The two positions for recruitment and employee training and development are required to provide support for the projected retirements over the upcoming three years. Since 2020, there has been a steady increase in total attrition, particularly regarding retirements and voluntary terminations. There has been increased turnover of voluntary exits from 2.9 percent in 2020 to 8 percent in 2023, as well as increased retirements from 2.0 percent in 2020 to 3.1 percent in 2023 which requires knowledge transfer to build up successors. Additionally, the two positions will support the increasing volume of recruitment and employee movements. Recruitment volumes have steadily increased since 2018, increasing by 25 percent as of 2023 compared to when the Current MRP was developed. Recruitments include new jobs and replacements. Although new jobs remained consistent over the Current MRP term, replacements increased by 29 percent, while the staffing for Talent Acquisition has remained the same over the Current MRP term. Current Talent Acquisition staffing levels restrict FortisBC's ability to be proactive, build relationships with educational institutions, Indigenous communities, employment and immigration service providers, and limit capacity to proactively engage hiring managers, external agencies, and resources to attract candidates. Furthermore, FortisBC is modernizing its tools and platforms to support future workforce development and growth. These tool modernization activities require additional resources.

The remaining position is to support multi-year employment contracts with Indigenous nations to strengthen partnerships with Indigenous communities. Programs will be established to meet PAR targets through a proactive implementation plan to engage underrepresented groups with respect to career opportunities at FortisBC. Examples include creating a summer student program, job shadowing, site tours, and an Indigenous Management Training program.

2.3 *FBC 2024 BASE O&M*

2.3.1 FBC 2024 Base O&M Calculation

FBC established the 2024 Base O&M for the Rate Framework using the same method that it used to establish the 2019 Base O&M in the Current MRP, which was approved by the MRP Decision and Order G-166-20.

Consistent with past practice, FBC has used 2023 Actual expenditures (2023 Approved Base O&M less savings) as the starting point for the 2024 Base O&M, as 2023 is the latest year for which actual expenditures are available, and therefore, the most recent historical representation of the level of O&M funding required to operate FBC's system safely and reliably and to maintain its overall service quality level.

By starting with the 2023 Actual expenditures, the savings achieved in 2023 (i.e., $4.235 million) are accounted for in the calculation of the 2024 Base O&M. With the starting point (i.e., 2023 Actuals) established, the 2024 Base O&M is then developed by incorporating various adjustments, including the addition of a previously approved exogenous item, application of the 2024 formula inflator, the inclusion of amounts to reflect the new activities that are occurring in 2024 that would not be reflected in the 2023 Actual amounts, and incremental net funding which FBC requires during the Rate Framework term.

The process to calculate the 2024 Base O&M is therefore as follows:

1. Start with the 2023 Actual Base O&M, which is the 2023 Approved Base O&M reduced by the 2023 savings achieved.

2. Adjust for a previously approved exogenous factor. This adjustment is required to align the 2023 Actual Base O&M with the scope of the formula O&M for the term of the Rate Framework.

3. Multiply by the 2024 formula inflator[82] as approved in the Annual Review for 2024 Rates. This adjustment is required to state the 2023 Actual Base O&M in 2024 dollars.

4. Add amounts for required spending that will begin in 2024. As FBC started with 2023 Actual expenditures, this adjustment is required to derive a projection of FBC's 2024 Base O&M requirements.

5. Add net incremental funding required beginning in 2025 and over the term of the Rate Framework. This is the final adjustment, which increases the projected 2024 Base O&M to the amount that will be required over the term of the Rate Framework, but stated in 2024 dollars.

[82] 2024 Formula inflator includes inflation less productivity, and customer growth.

Table C2-10 shows how the 2024 Base O&M is calculated using the above adjustments. Each adjustment is discussed in the sections that follow.

Table C2-10: FBC 2024 Base O&M ($ millions)

2023 Approved Base O&M	70.318
2023 Savings - Base O&M	(4.235)
2023 Actual Base O&M	**66.083**
Adjustment for exogenous factor (in 2023 dollars)	0.585
2024 Base O&M (in 2023 dollars)	**66.668**
2024 Inflator	1.0356
2024 Base O&M (in 2024 dollars)	**69.043**
Adjustments for Required 2024 Spending (in 2024 dollars)	1.670
2024 Projected Base O&M	**70.713**
Net incremental funding for Rate Framework (in 2024 dollars)	5.556
2024 Base O&M for Rate Framework	**76.269**

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2.3.2 Adjustment for Exogenous Factor

FBC has adjusted the 2023 Actual Base O&M to incorporate the ongoing O&M associated with a previously approved exogenous factor.

2.3.2.1 Mandatory Reliability Standards (MRS) Assessment Report (AR) 13

As part of the Annual Review for 2022 Rates Decision,[83] the BCUC approved exogenous factor treatment for FBC's incremental costs of MRS compliance associated with MRS AR 13, as these costs were not included in the Current MRP's Base O&M. As explained in the Annual Review for 2024 Rates Application,[84] FBC projects $0.585 million of O&M spending in 2024, which is consistent with the 2023 Projected amount and is the amount of O&M that is expected to be incurred annually to maintain compliance with AR 13. This spending is related to ongoing efforts to maintain procedures and processes, hardware and software that address supply chain risk assessments, ongoing licensing and maintenance of the hardware and software, and the documentation to maintain compliance with AR 13. As these costs will continue through the term of the Rate Framework, they are included as an adjustment to the Base O&M for the purpose of setting the 2024 Base O&M. This treatment is consistent with how FBC incorporated exogenous factor impacts into Base O&M when establishing the 2019 Base O&M in the Current MRP.

2.3.3 Adjustments for Required 2024 Spending

Since FBC used 2023 Actual expenditures as the starting point for determining its 2024 Base O&M, any new O&M expenditures that will begin in 2024 are not yet reflected in the Base O&M

[83] Decision and Order G-374-21, p. 21.
[84] Section 6.3.5, p. 52.

and therefore need to be added. There are three items, totalling to $1.670 million, that will commence in 2024 and are not reflected in 2023 Actual expenditures. These items are new facility lease costs of $0.300 million, incremental costs to support the Long-Term Electric Resource Plan (LTERP) of $0.170 million, and incremental costs to support the power supply function and development of supply resource options of $1.200 million.

2.3.3.1 New Facility Lease Costs

As part of the Kelowna Space Project that was reviewed in detail in FEI's and FBC's Annual Reviews for 2023 Rates, FortisBC will be occupying new facilities in the Kelowna region to meet its space capacity needs starting in 2024. In the 2023 Annual Reviews, FEI and FBC received approval for updated Other capital expenditure forecasts for 2023 and 2024, including capital expenditures for the Kelowna Space Project.[85] As part of this project, both FEI's and FBC's Shared Services Departments (Support Services) located in Kelowna relocated to a new office lease facility in early 2024. The incremental leasing (O&M) cost for the site to be added to Base O&M is $0.900 million, shared between FEI and FBC based on the number of employees for each Company. FBC's allocation is approximately $0.300 million.

2.3.3.2 Long-Term Resource Planning

Long-term resource planning is a critical function for FortisBC as it assesses the future energy requirements of customers and options to meet them over the long-term, providing the context and framework for future regulatory applications, including CPCNs. The requirement to submit long-term resource plans to the BCUC is set out in section 44.1 of the UCA. During the ongoing energy transition and the rapidly changing external environment, FortisBC's resource planning activities are becoming less cyclical and more ongoing, with long-term resource plans being developed and filed with the BCUC on a more frequent basis. With new sources of supply such as wind and solar, and new types of customer demand such as EV charging and hydrogen production, resource planning has increased in complexity.

The Companies are staffing three additional positions in 2024 to support the increasing frequency and complexity of resource planning as well as the need to continue advancing the integration of gas and electric resource planning. The new roles will provide analysis and research and will manage internal and external stakeholder engagement. Examples of these activities include:

- Assessment of resiliency for resource portfolios in future resource plans;
- Regional load forecasting, and transmission and distribution (T&D) impacts analysis;
- Analysis related to an integrated (i.e., diversified) gas and electric system;
- Increasing stakeholder and Indigenous engagement related to resource planning; and
- More collaboration with BC Hydro on load forecasting and scenarios.

[85] Approved by Orders G-352-22 (FEI) and G-382-22 (FBC).

The total cost of these three positions, including supporting costs, is $0.552 million, with the costs being allocated approximately two-thirds to FEI and one-third to FBC. FBC's share of the costs is therefore $0.170 million.

2.3.3.3 Power Supply and Development of Supply Resource Options

As highlighted at the Annual Review for 2024 Rates workshop, the power supply market is changing and has become more complex and dynamic as the region experiences higher wholesale prices and tighter market conditions. The region is impacted by several factors, including policy and customer-driven demand increases, impacts of climate change on traditional supply resources (e.g., multi-year drought impacts on hydro-electric resources), and a shift towards renewable energy generation. Amidst this changing environment, FBC continues to optimize its costs and ensure security of supply through its management of the power supply portfolio. However, with the added complexity, FBC is adding resources to manage and optimize its power supply portfolio.

In addition to the changing power supply market, FBC must also begin development of new power supply resources. Further to the BCUC Decision and Order G-380-22 regarding FBC's 2021 LTERP (2021 LTERP Decision), FBC is exploring the development of supply side opportunities. In the 2021 LTERP Decision (page 47), the Panel noted the need for FBC to make progress on developing new resources:

> FBC notes that it may take some time to fully define the available resources, particularly given the long development timelines of major projects in BC. The Panel disagrees with ICG that FBC should be limited in its ability to move forward on development plans for new resources. It is not clear to this Panel how FBC could make meaningful progress on the development of new resources without pursuing the predevelopment activities and consultation needed to advance these new initiatives.

FBC has initiated planning and pre-development activities within its service territory as it seeks to optimize the energy resources and infrastructure.

To support the management of its power supply portfolio and the development of new supply side resources, four additional positions, as well as funding for external consultants are being added in 2024 at a total cost of $1.200 million. These expenditures will support the following activities:

- Ongoing power supply portfolio management and optimization;
- Enhanced modelling and data analytics to determine electric supply resources and what those new electric resources will be;
- Pre-project planning related to a number of new electric generation opportunities; and
- Contract design to update the Canal Plant Agreement and related agreements as well as other power supply contracts to account for new electric generation resources.

This work is critical to both identify and further explore the best resource options as well as to develop the new framework under which FBC operations will be coordinated with BC Hydro, as the existing framework does not cover additional FBC generation resources not envisioned in the Canal Plant Agreement. As noted above, this work is aligned with the 2021 LTERP.

2.3.4 Net Incremental Funding for the Term of the Rate Framework

To address key issues and changes in its operating environment, FBC requires net incremental O&M funding to be added to its 2024 Base O&M. The following table and discussion describe the net incremental O&M funding required over the term of the Rate Framework, organized by the respective business drivers.

Table C2-11: FBC Net Incremental Funding for the Term of the Rate Framework

Business Driver	$ millions
Government, Indigenous and Community Engagement	1.231
Environment and Sustainability	0.500
Corporate Security	0.453
Technology	1.099
System Operations and Adaptation	2.273
Total	**5.556**

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2.3.4.1 Government, Indigenous and Community Engagement

As discussed in Section B1 and further below, there continues to be substantial shifts within the policy environment that are significantly influencing FortisBC and its customers, particularly now that policies are reaching implementation and are affecting FortisBC's operations. At the same time, requirements for Indigenous engagement are increasing and becoming more complex, requiring additional resources and funding to build and maintain relationships.

Table C2-12 below provides the related net incremental funding requests for this area, followed by a discussion and rationale for the requests. For context, FBC has also provided the historical expenditures since the start of the Current MRP and the projected base funding for 2024.

Table C2-12: FBC Government, Indigenous and Community Engagement Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Government Relations and Public Policy[86]	-	-	-	-	-	0.066
Community and Indigenous Relations	0.501	0.468	0.652	0.654	0.677	1.015
Customer Engagement	1.227	1.065	1.045	0.991	1.027	0.150
Total	1.728	1.533	1.697	1.645	1.704	1.231

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Each of these three areas is discussed further below.

2.3.4.1.1 GOVERNMENT RELATIONS AND PUBLIC POLICY

As discussed in Section B1.4.2, policies are increasingly promoting the use of electricity, including in home heating, light duty transportation and industrial processes. FBC is focused on keeping pace with the growing demand for electricity in a constantly evolving operating environment and requires additional resources to engage with government on policy development impacting the electric system. For example, on February 15, 2024, the Province deposited Order in Council (OIC) No. 60 which amended the *Clean Energy Act* (CEA). The CEA now includes an objective to, by 2030, ensure that 100 percent of the electricity generated in British Columbia and supplied to the integrated grid is generated from clean or renewable resources, and to ensure that the infrastructure necessary to transmit that electricity is built. FBC will need to engage with government regarding how this objective is defined, including on the compliance pathways and technologies that are considered "clean". Further, FBC expects to engage with government on behalf of its customers to promote public policies related to the decarbonization of buildings that minimize impacts on peak demand in its service territory.

Please refer to Section C2.2.4.1.1 for a discussion of FortisBC's Government Relations and Public Policy requirements. FBC's share of the net incremental funding of $0.300 million for the two new positions described in that section is $0.066 million.

2.3.4.1.2 COMMUNITY AND INDIGENOUS RELATIONS

Table C2-13 below provides the breakdown of the funding request for Community and Indigenous Relations.

[86] Historically, FBC has engaged with government periodically on public policy matters. These engagements occurred infrequently and were supported by other departments within the Company, as applicable. Funding is required to support the increased and more frequent need for engagement.

Table C2-13: Breakdown of Community and Indigenous Relations Net Incremental Funding ($ millions)

Breakdown of Net Incremental Funding	Net Incremental Funding
Community Investment	0.125
Total Community	**0.125**
Indigenous Relations Engagement	0.580
Advancing Reconciliation	0.310
Total Indigenous	**0.890**

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Community Investment

Please refer to the Section C2.2.4.1.2 for details of FortisBC's community investment program. Similar to the need identified for FEI, FBC requires new community investment funding of $0.125 million to support to the communities that FBC serves and operates in.

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Indigenous Relations and Reconciliation

Please refer to Section C2.2.4.1.2 for details of some of the significant changes in the public policy landscape regarding Indigenous rights and reconciliation over the last few years.

Similar to FEI, FBC is increasing its focus on strengthening relationships with Indigenous peoples, communities, and First Nations consistent with an increased commitment for engagement and consensus seeking at the provincial and federal levels. Much of FBC infrastructure was developed and constructed in the earlier part of the 20th century when laws around consultation and engagement with Indigenous communities were different than they are today. This creates some unique challenges and requires increased engagement with Indigenous communities, particularly where resolving historical grievances is part of moving new projects forward. For example, before the FBC Oliver office and substation were built, the land used was removed from the Osoyoos Indian Band Indian (OIB) Reserve No. 1, which the OIB is seeking to be returned. These challenges require enhanced engagement and will impact future projects.

Indigenous Relations Engagement

To support enhanced engagement activities, FBC requires net incremental funding of $0.580 million, which is comprised of $0.480 million for three new Community & Indigenous/Initiatives Relations Manager positions and $0.100 million in non-labour costs. These roles will support key activities related to engagement, Indigenous initiatives and advancing reconciliation efforts, including, among other activities:

- Supporting engagement related to FBC's infrastructure growth; and
- Supporting engagement related to the replacement or upgrade of aging assets.

Building relationships takes time and resources. This can only be done with human capacity to build authentic and meaningful relationships with Indigenous communities.

Advancing Reconciliation

In addition to the resources required to implement enhanced engagement activities, there are several initiatives that need additional funding to support Truth and Reconciliation efforts. FBC estimates $0.310 million is required to advance the initiatives described in Section C2.2.4.1.2.

2.3.4.1.3 CUSTOMER ENGAGEMENT

FBC is requesting funding of $0.150 million for an additional Communications Manager to complement the existing two positions and meet growing daily communications needs from customers and the public. This position will manage media relations, customer and public communications related to issues management (i.e., wildfires, public safety, vegetation management, etc.), and increased communications support for community and Indigenous relations initiatives.

2.3.4.2 Environment and Sustainability

Table C2-14 below provides FBC's actual expenditures for environment and sustainability from 2020 to 2023, the projected base funding for 2024, and the net incremental funding to be added to the 2024 Base O&M.

Table C2-14: FBC Environment and Sustainability Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Environment and Sustainability	0.283	0.238	0.596	0.732	0.758	0.500
Total	0.283	0.238	0.596	0.732	0.758	0.500

Environmental and archaeological regulatory requirements continue to increase through new legislation or through changes to existing legislation for both FEI and FBC. FBC is required to comply with the environmental, archaeological, and regulatory requirements and sustainability reporting that are applicable to FEI. Please refer to Section C2.2.4.2 for a description of these increasing requirements.

Furthermore, strengthened fish and fish habitat protection provisions were introduced in 2019 under the modernized *Fisheries Act*, as well as regulations that support these provisions. FBC is responsible for ensuring that the ongoing operation, modification, maintenance, or other works and undertakings associated with its generation facilities are in compliance with the modernized *Fisheries Act*. Additional fisheries assessment work is required to support the evaluation and potential application for an authorization for FBC's river plants under the modernized act. This work involves the identification of operational impacts, mitigation opportunities, and residual impacts including but not limited to stranding, ramping, entrainment, and dam safety work.

There are numerous federal and provincial regulatory requirements to protect species at risk, including aquatic species at risk and migratory birds. Environmental protection and permitting requirements are increasing due to newly listed species at risk and identification of critical habitat. For example, the 2022 updates to the Migratory Birds Regulation (MBR) under the *Migratory Birds Convention Act* increased the protection of pileated woodpecker nesting cavities, requiring them to be protected and monitored for three breeding seasons prior to being removed, to ensure they are not being used (by any species). FBC now requires Damage/Danger permits to allow removal of poles with identified pileated woodpecker nesting cavities once the breeding season is over if the pole had no occupants during the breeding season. As a result, additional assessment and monitoring of poles are now required to identify pileated woodpecker nesting cavities for the permit application and record activity throughout the nesting season.

While the *Migratory Birds Convention Act* and *Fisheries Act* came into force in 2022 and 2019, respectively, it has taken time for the requirements to be clarified. FBC has been engaging with government representatives and expects its engagement and planning phases to conclude in 2024. Accordingly, commencing in 2025, FBC will require additional resources to implement and comply with these new requirements.

Additionally, aquatic invasive species (zebra/quagga mussels) pose a growing threat to FBC's hydro-electric generation stations. As a result, FBC requires additional funding to support aquatic invasive species prevention initiatives.

The increases in resources, labour and non-labour for the proposed net incremental funding of $0.500 million are related to the following areas:

- Increased scope/scale of activities/projects requiring environmental review and environmental management during implementation;
- Increased regulatory/compliance requirements;
- Archaeological permitting costs;
- Increased environmental (non-regulatory) reporting; and
- Increased consulting costs for environmental risk management.

Of the total $0.500 million required, $0.200 million is estimated for increasing regulatory requirements, with the remaining $0.300 million estimated for implementing new codes and regulations required or anticipated in the following areas:

- Labour: Environmental Technician to support increased activities;
- Labour: Environmental Program Lead to support increased activities;
- Non-labour: Increased fisheries assessment work (*Fisheries Act*);
- Non-labour: Additional invasive species (mussel) prevention;

- Non-labour: Additional terrestrial resource management (migratory birds/species at risk; invasive plants); and
- Non-labour: Increased archaeology permits/compliance costs.

2.3.4.3 Corporate Security

Table C2-15 below provides FBC's actual expenditures for corporate security from 2020 to 2023, the projected base funding for 2024, and the net incremental funding to be added to FBC's 2024 Base O&M.

Table C2-15: FBC Corporate Security Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Corporate Security	0.875	0.806	0.967	0.960	0.994	0.453
Total	0.875	0.806	0.967	0.960	0.994	0.453

Please refer to Section C2.2.4.3 for a discussion of FortisBC's Corporate Security activities and focus. As explained in Section C2.2.4.3, the total net incremental funding of $2.060 million will be allocated between FEI and FBC using the approximate number of employees as the cost driver, which results in a 78 percent allocation to FEI and a 22 percent allocation to FBC. FBC's allocation is therefore $0.453 million.

2.3.4.4 Technology

Table C2-16 below provides the actual expenditures for software licensing fees and patching for FBC from 2020 to 2023, the projected base funding for 2024, and the net incremental amount to be added to FBC's 2024 Base O&M.

Table C2-16: FBC Technology Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Software Licensing fees	1.929	2.148	2.286	2.570	2.662	0.650
Patching[87]	-	-	-	-	-	0.449
Total	1.929	2.148	2.286	2.570	2.662	1.099

[87] No historical O&M expenditures are shown as the costs were capitalized through the current managed service agreement and spread amongst the existing employee resources. There are currently no dedicated resources to patch systems.

For the reasons described in Section C2.2.4.4.1, FBC requires net incremental funding of $0.650 million to fund the year-over-year increases expected in its software licensing fees.

For the reasons described in Section C2.2.4.4.2, FBC requires net incremental funding of $0.449 million to support an increased cadence for security patching of hardware and software. The funding includes $0.199 million for the non-capitalized portion of seven technical employees and $0.250 million for managed services.[88] FBC has more than 300 applications, 1,750 end-points (computers and mobile devices), 430 servers, and 330 appliances. The total patch management program of $1.645 million is split between O&M and capital work, with the majority being capital. The associated increase in capital expenditures is discussed in Section C3.4.3.4.

2.3.4.5 System Operations and Adaptation

FortisBC's operations are focused on meeting customer expectations by improving processes that improve efficiency and effectiveness of the work completed. Table C2-17 below is a summary of the proposed funding requests. FBC's historical actual expenditures since the beginning of the Current MRP are provided for context along with the projected base funding for 2024. The net incremental funding represents the additional funds to be added to FBC's 2024 Base O&M.

Table C2-17: FBC System Operations and Adaptation Net Incremental Funding ($ millions)

	Historical Actual Expenditures				Projected Base	Proposed Incremental
	2020	2021	2022	2023	2024	
Engineering	5.900	6.056	6.700	6.328	6.553	0.535
Generation and System Control	7.000	6.400	6.200	7.100	7.353	1.000
Vegetation Management	5.665	5.538	5.937	5.465	5.660	0.478
Workforce Development	1.724	2.076	1.667	1.600	1.657	0.260
Total	20.289	20.070	20.504	20.493	21.223	2.273

Each of the four identified areas are discussed further below.

2.3.4.5.1 ENGINEERING

FBC requires net incremental funding of $0.535 million in Engineering, consisting of $0.345 million for seven additional positions and $0.190 million in other related support costs.

FBC requires an additional seven positions and related costs to support its capital plan (discussed in Section C3.4) and asset maintenance strategy, which will ensure that the electric network has sufficient capacity to meet increasing customer demand and ensure the reliability of energy supply. The new positions include two engineers, three technologists, one data integrity coordinator and one asset assistant, and they are spread across the different teams within Engineering. These teams deal with both asset management and the planning and execution of

[88] A managed service is the practice of allowing a third-party company to support information technology operations.

capital projects. While two of these positions are associated with asset management and have significant O&M allocations, the majority of the positions' salaries are to support the proposed growth in FBC's capital over the upcoming period, with most of the salaries charged to capital activities and the remaining 10 to 15 percent allocated to O&M. The O&M activities include tasks such as training, meeting regulatory requirements, and support for operations and standards. The related support expenses are for travel expenses for training and operations support, course fees, personal protective equipment, communications costs, and professional membership dues.

Other support activities requiring net incremental funding of $0.190 million include:

- **Telecommunications Fees:** $0.050 million for increasing telecommunications fees for existing communication devices (such as smart meters and recloser controllers) and new fees for additional communications devices needed for a communication system that is redundant and resilient to withstand increasing threats to infrastructure from wildfires and other climate change impacts and increased cybersecurity threats.
- **Support the MRS Process:** $0.140 million will fund expected increases for license fees for the software used to meet Mandatory Reliability Standards. As explained in Section C2.2.4.4.1, vendors are changing their software solutions and support models (i.e., SaaS), resulting in increased licensing costs.

2.3.4.5.2 GENERATION AND SYSTEM CONTROL

FBC requires $1.000 million of net incremental funding for Generation and System Control. These funds will be used for compliance with codes and regulations (due to implementation of new processes or timing of activities) and increases in maintenance activities. Table C2-18 below outlines the net incremental funding for Generation and System Control. Each of the incremental expenditures is discussed below the table.

Table C2-18: Breakdown of Generation and System Control Net Incremental Funding ($ millions)

Breakdown of Net Incremental Funding	Net Incremental Funding
BC Dam Safety Regulations	0.260
WorkSafe BC	0.070
Increased Maintenance	0.420
Major Unit Inspections	0.250
Total	**1.000**

FBC must comply with regulatory requirements under the BC Dam Safety Regulation and WorkSafe BC, resulting in net incremental funding of $0.330 million, as further described below.

- **BC Dam Safety Regulations:** $0.260 million is related to compliance activities that include dam safety capacity assessments required by recently completed dam safety reviews, dam monitoring, dam drainage and spillway gate testing.

- **WorkSafe BC:** $0.070 million related to addressing evolving compliance activities such as regulations around equipment identification and labelling. Further, the annual crane inspection and certification activities will be upgraded based on operational learnings, with a crane runway span and elevation surveys.

FBC requires net incremental funding of $0.670 million for increases in maintenance tasks and major unit inspections, as described below.

- **Increased Maintenance Work:** $0.420 million related to an increase in dam and plant maintenance activities due to the condition of assets. Dam maintenance activities include vegetation removal, concrete sealing, intake gate testing and debris boom cleaning. Plant maintenance activities include condition assessments, auxiliary systems maintenance, plant air cooling system and a dewatering systems overhaul.
- **Major Unit Inspections**: $0.250 million related to additional inspection and maintenance tasks as required for units that have reached 20 years since their original upgrades under the Unit Life Extension (ULE) program.

2.3.4.5.3 VEGETATION MANAGEMENT

Tree and vegetation management activities relate to reducing the incidents of damage and related outages to the system resulting from trees and tree debris falling on the power lines and consist of costs to define the right of way perimeters, clear and maintain the right of ways and protect the system from danger trees by removing them. FBC performs these activities systematically to address vegetation that has the potential to grow into or fall and strike FBC's powerlines.

Tree contacts are one of the main causes of outages on FBC's system and can pose a risk to the public, resulting in injury or death. In some cases, tree contacts can result in the ignition of a wildfire. Tree related outages often occur in areas that are difficult to access, which means it can be challenging and time consuming to remove the tree and/or repair the damage. This causes increased outage hours, as well as increased costs to react to the unplanned outage.

The required activities are critical to the safe and reliable operation of FBC's system and have a direct impact on FBC's service quality (i.e., SAIDI and SAIFI). Following is a discussion of the requested net incremental funding for Vegetation Management activities.

- **Trimming and Clearing:** Trimming refers to a person, typically in an aerial lift device or climbing the tree itself, cutting a tree back from the powerline. Clearing typically refers to clearing vegetation under the powerlines from the ground. With a changing climate, there is unpredictable growth in trees and ground vegetation around the distribution and transmission power lines, such as additional growth in areas with increased rainfall. This has increased the number of tree contacts with power lines, causing customer outages and increasing the risk of possible subsequent fires. To mitigate this risk and ensure safety and reliability, FBC has recently changed its trimming standards, resulting in FBC increasing the horizontal and vertical clearance requirements to the powerlines. This has

increased the number of trimming and clearing activities and their related costs, and FBC therefore requires $0.320 million in net incremental funding.

- **Hazard Tree Removal:** A hazard tree is a tree that is dead or in decline and as a result, poses a risk to the powerline. Climate change is increasing wildfire risk. Longer, drier spells combined with rapid climate changes have increased the numbers of trees in distress, which increases the risk of trees falling on powerlines, resulting in fires and outages. Climate change is also negatively affecting tree growth rates, mortality rates and overall tree health with higher instances of root rot. All these factors have increased the number of tree contacts with powerlines, thus requiring FBC to remove more hazard trees resulting in higher costs. FBC accordingly requires $0.158 million in net incremental funding for these activities.

2.3.4.5.4 WORKFORCE DEVELOPMENT

For the same reasons described in Section C2.2.4.5.2, FBC requires net incremental funding to support the development of its workforce.

The $0.260 million net incremental funding will provide two additional positions for recruitment and employee training, and support employment contracts with Indigenous Nations. This includes establishing corporate employee training and leadership development program(s) to support business areas across the organization with skills development to meet changing business needs and talent and succession planning requirements. Additionally, programs will be established to meet FBC multi-year workforce agreements with Indigenous communities and the PAR targets through a proactive implementation plan to engage underrepresented groups with respect to career opportunities at FBC. Examples include creating a summer student program, job shadowing, site tours, and an Indigenous Management Training program.

Additionally, FBC requires the net incremental funding to provide support for the continued increases in retirements and staffing for projects. Since 2020, there has been a steady increase in total attrition, particularly regarding retirements and voluntary terminations. There has been increased turnover of FBC voluntary exits, from 2.4 percent in 2020 to 6 percent in 2023, and increasing retirements from 1.7 percent in 2020 to 3.1 percent in 2023. The increased retirements require knowledge transfer to build up successors.

Also, the net incremental funding supports the increasing volume of recruitment and employee movements. Recruitment volumes have steadily increased since 2018, a 15 percent increase in 2023 compared to when the 2020-2024 MRP Application was developed. Recruitments include new jobs and replacements. Although new jobs remained consistent over the Current MRP term, replacements have increased by 23 percent, while the staffing for Talent Acquisition has remained the same over the same period.

2.4 FORMULA O&M DETERMINATION DURING THE TERM OF THE RATE FRAMEWORK

Similar to the Current MRP, the rates for both FEI and FBC in each year during the term of the Rate Framework will reflect the recovery of both index-based O&M and forecast O&M. The annual index-based O&M will be calculated based on the previous year's Unit Cost O&M (UCOM), which is defined as the Base O&M per customer count, escalated by the inflation factor less the productivity factor, and multiplied by a forecast of the average number of customers for the test year. For forecast/flow-through O&M, the Companies will continue to forecast certain O&M expenditures annually, with variances between forecast and actual amounts recorded in deferral accounts. Please refer to Section C2.5 for further discussion of the proposed forecast O&M items.

The starting UCOM (i.e., 2024 UCOM) for FEI and FBC will be calculated using the 2024 Base O&M as set out in Sections C2.2.1 and Section C2.3.1, respectively, and divided by the 2024 average number of customers (calculated as the 12-month average of the number of customers) of FEI and FBC at the time of the Annual Reviews for setting 2025 rates. As an example, using the 2024 Approved average number of customers for FEI[89] and FBC,[90] the 2024 UCOM would be $277 per customer and $502 per customer for FEI and FBC, respectively.

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The UCOM is then escalated using the I – X indexing approach (inflation less productivity) in each year during the term of the Rate Framework. The inflation factors that FortisBC proposes to use are described in Section C1.3 and the productivity or X factors that FortisBC proposes to use are described in Section C1.4.

In summary, each year's indexed-based O&M is determined by applying an indexing factor to the previous year's UCOM and then multiplying by a forecast of the average number of customers, expressed as follows:

$$OM_t = UCOM_{t-1} \times (1 + (I - X)) \times AC_t + TUp_{t-2}$$

Where:
OM = Indexed-based Operating and Maintenance Expense
UCOM = Unit Cost O&M
t = Forecast Year
I = Inflation Factor
X = Productivity Factor
AC = Average Number of Customers
TUp = True-up

Consistent with the Current MRP, FEI and FBC will each forecast the average number of customers for the rate-making year as part of the Annual Review process and will continue to include a true-up to the indexed-based O&M based on the actual average number of customers

[89] 2024 Forecast provided in the FEI Annual Review for 2024 Delivery Rates, approved by Order G-334-23. The 2024 Forecast average number of customers was 1,089,371.
[90] 2024 Forecast provided in the FBC Annual Review for 2024 Rates, approved by Order G-340-23. The 2024 Forecast average number of customers was 152,006.

from two years prior. This growth factor true-up process, as discussed in Section C1.5.3, will recover from or return to customers any O&M variance caused by a difference between the forecast and actual average number of customers, thus mitigating any forecast variances during the Rate Framework term.

2.5 *FORECAST O&M*

During the Current MRP term, FEI and FBC were approved to forecast certain O&M expenses annually, with the variances between forecast and actual amounts recorded in deferral accounts. These expenses are not included in the index-based O&M and the forecasts are updated as part of the Annual Reviews.

The Companies have reviewed the existing forecast O&M items and believe that the currently approved treatment continues to be appropriate. As stated by the BCUC in the MRP Decision, these categories of costs are not conducive to being included in an index-based O&M formula because they are either tied to parts of the business that are changing in response to government policy or are otherwise outside the control of management.[91] Accordingly, the Companies propose to continue to treat the following items as forecast/flow-through O&M:

- Pension and OPEB expenses (FEI and FBC);
- Insurance premiums (FEI and FBC);
- BCUC levies (FEI and FBC);
- Integrity digs (FEI only); and
- Clean Growth Initiatives (FEI and FBC): This category of O&M expenditures supports the Companies' investments in a clean growth future, and currently include initiatives in FEI's NGT stations and tankers, FEI's renewable and low carbon gas initiatives (biomethane service and renewable gas development), FEI's variable LNG production, and FBC's EV DCFC service. Over the term of the Rate Framework, either FEI or FBC may propose to include other new Clean Growth Initiatives in alignment with government policy (e.g., costs related to methane emission mitigation, as further described in Section C3.3.4.1).

Over the term of the Rate Framework, the Companies may propose that new items that are not included in Base O&M should be forecast and subject to approval through the Annual Review process, such as new Clean Growth Initiatives or incremental O&M arising from approved Major Projects.

In addition to the currently approved items described above, FEI and FBC are each proposing one new item to be treated as forecast/flow-through O&M during the Rate Framework term. These are discussed in the following subsections.

[91] MRP Decision, p. 119.

2.5.1 Meter Reading and Other O&M Costs for the AMI Project (FEI)

As discussed in Section B2.2.2.2.1, FEI is proposing that its O&M costs impacted by the AMI project be removed from formula O&M and instead be treated as flow-through O&M. These costs include Meter Installation, Meter Reading, Operations, Customer Service, and Meter Shop O&M costs. FEI proposes to forecast these costs in each Annual Review and provide a discussion of its expectations for the costs for the coming year, with variances between forecast and actual costs recorded in the Flow-through deferral account and returned to or recovered from customers in subsequent years. This treatment will result in customers paying only the actual costs incurred, which is consistent with the approved treatment of CPCN expenditures.

2.5.2 MRS Audit and Assessment Report Costs (FBC)

FBC is proposing to treat two specific types of MRS costs as forecast (flow-through) O&M starting in 2025: (1) costs associated with the triennial MRS audit; and (2) incremental costs associated with MRS Assessment Reports.

2.5.2.1 MRS Audits

Every three years, the administrator of the BC MRS Program – the Western Electricity Coordinating Council (WECC) performs an audit on FBC. The audits include a review, at minimum, of all applicable reliability standards identified in the Actively Monitored List. In the past, FBC has requested a new deferral account at the time of each MRS audit and has been approved to record the audit costs in this deferral account. These costs are then amortized over three years into customer rates.

For example, the triennial MRS audit is occurring in 2024, and FBC was approved as part of the Annual Review for 2024 Rates Decision to record the audit costs in a new deferral account. As part of the decision, the BCUC stated the following:[92]

> The Panel notes that the 2024 MRS audit will be the fifth audit since the introduction of the MRS audit process in 2021, and since these costs are now recurring in nature, it is timely for FBC to now review its forecasting methodology for MRS costs. Accordingly, we encourage FBC to consider whether flow-through treatment of these costs continues to be appropriate as part of its next rates application.

FBC clarifies that while the MRS audit costs have historically been trued up to actuals through the use of deferral accounts, they have not been treated as forecast (flow-through) expenses, which is why FBC has been applying for a new deferral account to record these costs every three years.

FBC considered alternative treatments for the MRS audit costs, including potentially including the costs in the index-based O&M, which would require an adjustment to the 2024 Base O&M.

[92] FBC Annual Review for 2024 Rates Decision and Order G-340-23, p. 19.

However, as the MRS audit costs are expected to occur only once over the term of the three-year Rate Framework (i.e., in 2027), FBC did not consider that setting an annualized amount to include in the Base O&M would be the best approach, as the costs would be included in O&M prior to when they would occur and would be subsequently escalated by inflation and customer growth each year. Therefore, the timing of when the costs are incurred and when they are recovered from customers would not be well matched.

However, FBC acknowledges that applying for a new deferral account every three years is somewhat inefficient, particularly given the regularity and predictability of the timing of the audits. FBC therefore proposes to forecast the MRS audit costs in the year they are expected to be incurred and include the forecast in the Annual Review (i.e., the Annual Review for 2027 Rates). This will allow for the costs to be reviewed by the BCUC and interveners, will increase efficiency by avoiding the creation of a new deferral account, and will allow the costs to be matched with the expected timing of the audit. Similar to other flow-through costs, FBC proposes that the variances between forecast and actual costs be recorded in the Flow-through deferral account.

2.5.2.2 MRS Assessment Report Costs

During both the 2014-2019 PBR Plan and the Current MRP terms, incremental O&M and capital costs related to MRS Assessment Reports (ARs) have been treated as exogenous factors. The most recent MRS AR which was approved for exogenous factor treatment was AR13, which was approved in the FBC Annual Review for 2022 Rates Decision and Order G-374-21. Once exogenous factor treatment is approved, FBC records the actual incremental costs in the Flow-through deferral account. For ongoing incremental costs resulting from the MRS ARs, FBC has historically been approved to continue to forecast those costs outside of indexed-based O&M (or Regular capital) until the conclusion of the multi-year rate plan term. FBC has then applied to include the ongoing incremental costs into the new Base O&M (or the Regular capital forecasts).

In the 2020-2024 MRP Application, FBC applied to change the treatment of the MRS AR costs from exogenous factor to flow-through (forecast); however, the BCUC denied this request, stating that continuing with exogenous factor treatment would still allow FBC to recover costs that have been reviewed and approved by the BCUC.[93]

While FBC agrees that the exogenous factor provides the Company with the ability to seek recovery of the MRS AR costs, FBC considers this approach to be somewhat inefficient and to result in essentially the same treatment of the costs that would occur if they were approved to be forecast in O&M when new assessment reports are issued. Ultimately, whether treated as exogenous or as forecast (flow-through), the costs will be forecast outside of index-based O&M and will be trued up through the Flow-through deferral account. Given that new assessment reports will continue to occur, it is more appropriate and efficient to treat the related costs along with other regularly occurring forecast/flow-through O&M (or capital). While FBC appreciates that if treated as exogenous factors, the costs will be subject to the materiality threshold, due to the impact of the requirements resulting from the MRS assessment reports, the incremental costs

[93] MRP Decision, page 75.

typically exceed the materiality threshold. Moreover, these are mandatory costs for FBC that are outside management's control and, therefore, in principle these MRS costs should be recovered in rates and not subject to a materiality threshold.

Therefore, FBC proposes to treat the incremental MRS assessment report costs as forecast (flow-through) O&M (or capital) during the term of the Rate Framework. Given that the assessment reports occur at varying intervals, FBC notes that none or multiple reports may be issued during the term of the Rate Framework.

2.6 *CONCLUSION*

During the term of the Current MRP, FortisBC has prioritized and managed its overall O&M expenditures, delivering savings of $28.0 million[94] and $11.8 million[95] to FEI and FBC customers, respectively. The cost benchmark analysis performed by Dr. Kaufmann in Appendix C1-1 demonstrates that both Companies are performing efficiently. Specifically, when comparing average O&M costs per customer against industry peers, FEI performed slightly better than the average (i.e., 0.2 percent better than the average), while FBC performed significantly better than the average (i.e., 35.0 percent better than the average). Further, when considering FortisBC's productivity under multi-year rate plans since 2014, Dr. Kaufmann's analysis shows that FEI and FBC have exceeded industry norms, generating significant cost savings for customers.

For the Rate Framework, both FEI and FBC established the 2024 Base O&M using the same method used to establish the 2019 Base O&M in the Current MRP, which was approved by Orders G-165-20 and G-166-20. Starting with 2023 Actual expenditures passes savings onto customers ($4.322 million and $4.235 million to FEI and FBC customers, respectively) before considering necessary adjustments and net incremental funding necessary to address new and incremental requirements over the term of the Rate Framework.

Both FEI and FBC require incremental funding to meet new and incremental requirements, particularly in the areas driven by the energy transition, increasing physical and cyber security risks, and Indigenous relations and reconciliation. FEI and FBC propose net incremental funding of $9.652 million and $5.556 million, respectively, to meet these requirements.

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Finally, FEI and FBC propose to continue with an annual forecast of certain O&M expenses, with the variances between forecast and actual amounts recorded in deferral accounts. This treatment remains appropriate as this category of costs is not conducive to being included in an index-based O&M formula because they are either tied to parts of the business that are changing in response to government policy or are otherwise outside the control of management.

[94] Section B2.2.2.2, Table B2-8.
[95] Section B2.2.2.2, Table B2-9.

3. CAPITAL EXPENDITURES

3.1 *INTRODUCTION*

The Companies' capital expenditures are required to maintain the safety, reliability and integrity of the gas and electric facilities used to provide service to customers, respond to the information needs and inquiries of customers, and to provide the information and systems necessary to support the business.

FortisBC's capital expenditures fall under two main categories: (1) Major Projects; and (2) Regular capital.

Major Projects are capital expenditures that do not form part of the Regular capital spending and are typically reviewed by the BCUC through a separate process, such as through applications for a certificate of public convenience and necessity (CPCN) under section 45 of the UCA, or through applications for acceptance of expenditure schedules under section 44.2 of the UCA. FEI's and FBC's Major Projects are discussed further in Sections C3.3.6 and C3.4.6, respectively.

Regular capital expenditures include Growth, Sustainment and Other capital, as well as Flow-through capital.

Consistent with the Current MRP, FEI's and FBC's Regular capital expenditures are divided into the following categories:

- **Growth capital:** For FEI, this consists of expenditures for the installation of new mains, services, meters, and distribution system improvements to support customer additions. For FBC, this consists of expenditures for infrastructure required to meet demand for new customers and/or load growth.

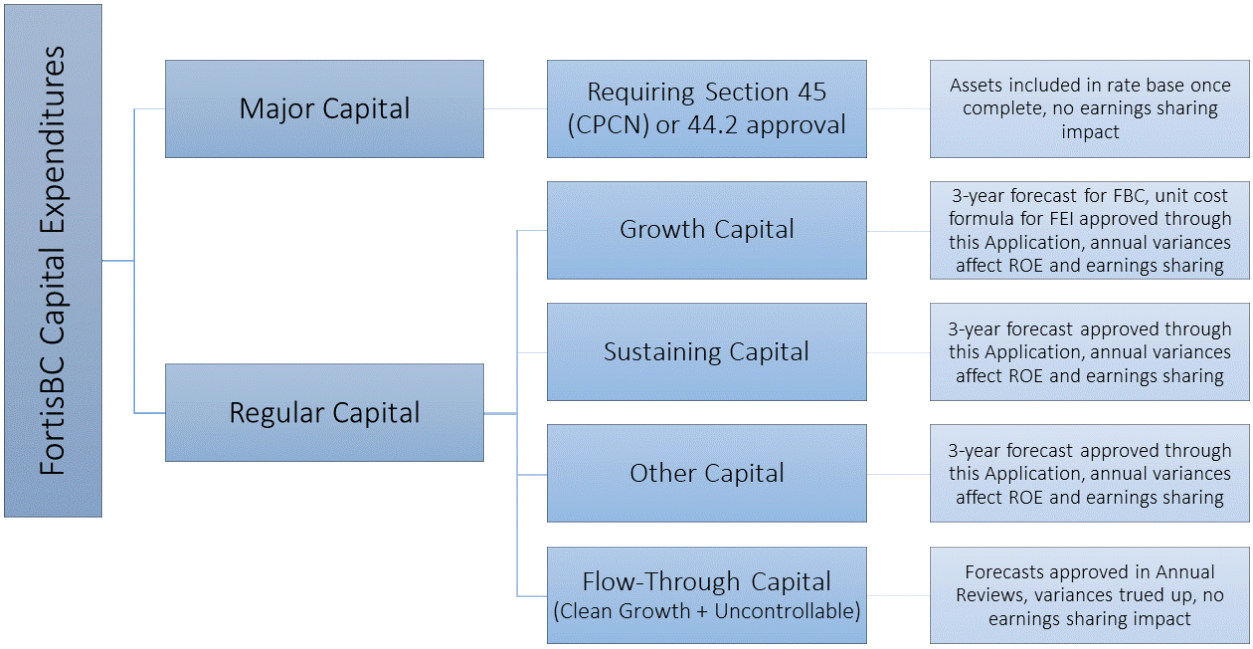
- **Sustainment capital:** For FEI, this consists of expenditures for meter exchange programs, replacements and upgrades to the distribution and transmission systems related to safety, integrity and reliability, and expenditures for mains and service renewals and alterations. For FBC, this consists of expenditures for system reinforcements, asset replacements, and upgrades to the generation, transmission, stations, and distribution assets, to ensure safety, integrity and reliability.

- **Other capital:** For both FEI and FBC, this consists of expenditures for IS, equipment (including fleet vehicles), and facilities.

- **Flow-through capital:** For both FEI and FBC, this consists of expenditures that are forecast annually as part of the Annual Review process, such as Clean Growth Initiatives.

The following diagram illustrates the categories of FortisBC's capital expenditures and their treatment.

Figure C3-1: Categories of Capital Expenditures and Treatment



In the sections below, FortisBC outlines its capital planning processes, discusses the Companies' capital expenditures during the Current MRP term, and provides forecasts of capital expenditures over the 2025-2027 period and the proposed formula for FEI's Growth capital portfolio. FortisBC also provides a discussion of anticipated Flow-through capital expenditures and anticipated Major Projects.

3.2 *CAPITAL PLANNING PROCESS*

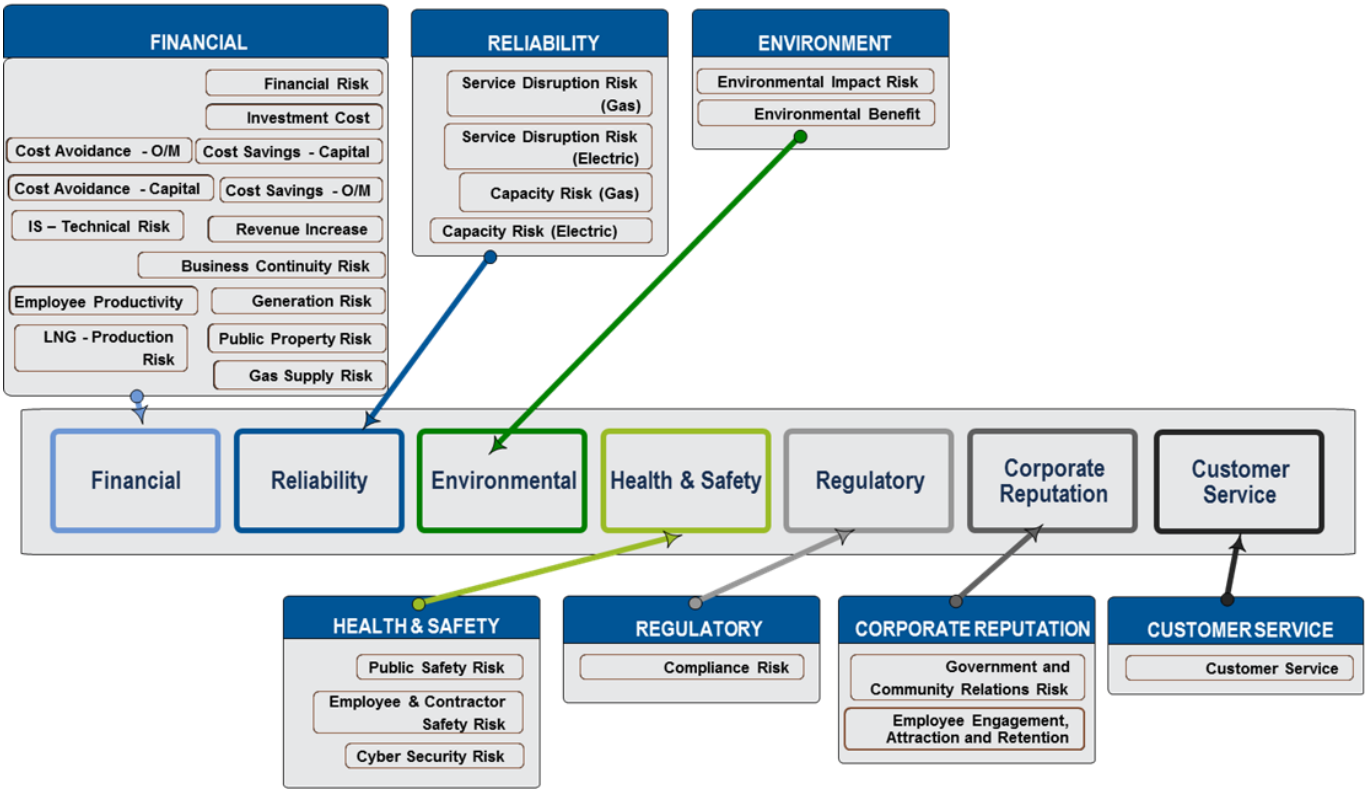
FortisBC manages its capital investment plan to maintain a safe and reliable system, optimize resources and spending, and provide value to its customers. The capital plan contains a mix of projects, some of which are time-sensitive and others that have some flexibility in timing. This is done with the understanding that conditions change, and the plan must be capable of adapting. This plan flexibility allows FortisBC to manage and execute normal levels of unforeseen urgent work that come up throughout the year within the resource and budget constraints of the capital plan. This planning process applies to FEI and FBC Sustainment and FBC Growth capital planning, whereas Growth capital planning specific to FEI is addressed through a separate process further discussed in Section C3.3.1.

FortisBC has continued to use its asset investment planning (AIP) process which allows it to transparently communicate its decision-making to stakeholders and contributes to the goal of consistent decisions across asset classes. As part of the AIP process, FortisBC optimizes its capital portfolio using Copperleaf C55 software along with methodologies and processes that support the consistent quantification of benefits and risk mitigation associated with each proposed

investment. To assign consistent values and weights to individual projects, FortisBC has developed standardized value framework guidelines for each type of project.

The foundation of the AIP tool is the value framework that is used to quantify the value of potential investments. The value framework is made up of seven overarching values: (1) financial; (2) reliability; (3) environmental; (4) health & safety; (5) regulatory; (6) corporate reputation; and (7) customer service. Under each value, there are measures that contribute to and impact each value. These measures, and which value they impact, are shown in Figure C3-2 and further described below.

Figure C3-2: Asset Investment Planning Value Framework Overview



The value that a capital investment contributes to each of these areas is calculated, taking into account the number of customers, employees or other stakeholders impacted, the magnitude of a potential event, the likelihood that an event will occur, the mitigating factors that are present and the impacts of time on risks and benefits. Once projects are evaluated using the value framework, the tool provides the ability to optimize the capital planning portfolio for a given period of time to achieve the greatest benefit within a set of financial and/or resource constraints.

The AIP process and tool supports risk-informed decision-making in capital planning by quantitatively valuing investments through a value framework that is common to all asset classes. FortisBC actively manages the planning and execution of its capital plan to achieve value for customers. For example:

- During the planning stages of capital projects, FortisBC bundles work that is at a common location or that is similar in nature to save on mobilization costs and material purchasing costs;
- Where possible, FortisBC develops standardized designs to save on material purchases, spare parts, and to reduce training needs and improve efficiency of the workforce;
- FortisBC uses a contracting strategy that reduces overall costs by leveraging a flexible workforce that is scalable and able to move to where the work is needed and when it is needed;
- FortisBC prioritizes projects and programs to allow for early engineering and design, procurement of materials and equipment, and comprehensive pre-job planning; and
- FortisBC works closely with municipalities in its operating territories to coordinate planned capital work to minimize project costs and disruption to the public, including (in some cases) negotiating municipal operating agreements to bring cost certainty and improve working relationships.

While efficiencies and cost savings continue to be a focus, FortisBC can experience pressures due to a variety of factors which are outside the Company's control, recent examples being the COVID-19 pandemic, supply chain issues and inflationary increases, among others.

3.2.1 Additional Capital Planning Considerations

The AIP process discussed above remains the foundation for FortisBC's capital planning process. In recent years, additional factors have had an increasing impact on the development of capital plans in the utility landscape, including:

- Specific considerations that the energy transition brings to growth and capacity projects;
- The influence of climate change on climate adaptation planning; and
- Increasing challenges in securing land for project siting.

Each of these is described further below.

3.2.1.1 Energy Transition

The energy transition impacts on capital planning differ for FEI and FBC. For FEI, given the uncertainty over future gas demand levels driven by climate policy, capacity driven projects have been reviewed to ensure they meet the needs of the shorter-term system demand forecast. While the need for an upgrade is determined through normal capacity planning processes, FEI has reviewed the size of the upgrade (length/size of system improvement or capacity of station) with a view to shorter timelines. Typically, a longer-term capacity forecast (20 years) is utilized to ensure any upgrades can address the requirements of the system without having to upgrade again in the near future, with the goal of ensuring investments are as efficient as possible and costs are minimized. With the development of this capital plan, and with the recent pressures of decarbonization and electrification in local communities, FEI has reviewed the proposed capacity

driven projects to assess if they can be re-scoped into multiple smaller capacity upgrades so that FEI can proceed with only the portions that meet the underlying need for the near term. FEI expects this process to be iterative over the coming years.

For FBC, the energy transition is expected to increase demand across the service territory. With growth driven by electrification and building code changes as well as the growing adoption of electric vehicles, FBC is working to better understand the potential impacts on its existing system and is in the process of identifying and planning for investments to support the continued growth in demand for new load.

3.2.1.2 Climate Change Adaptation

The environment and the changing climate are important considerations for FortisBC in evaluating necessary investments for new and existing assets. As discussed in Section B1, FortisBC is developing a Climate Change Operational Adaptation Plan to ensure the appropriate consideration is given to the increased risk of natural hazards in each of its service territories. Compliance with regulations concerning the environment has also driven necessary climate change related investments across FEI's system. Further, the need for improved measurement of GHG emissions in advance of any future regulation changes to ensure there is sufficient planning for any asset modifications has resulted in necessary capital expenditures.

3.2.1.3 Land Acquisition

Land acquisition has proven to be a larger challenge and consideration for FortisBC. When new land is required as part of an investment, alternative property locations are reviewed as part of the normal planning process. However, it has become increasingly difficult to procure land in a timely manner to support the execution of projects based on their forecast need. In some cases, FortisBC is needing to complete detailed reviews for dozens of property locations for single investments and it is taking years to engage with property owners, Indigenous communities, municipalities, and regional districts as well as negotiate agreements. Detailed design for these investments cannot be finalized in the meantime as they are dependent on specific property locations. This is creating inflationary pressures and increasing durations to allow for sufficient project planning.

As one of the fastest growing cities in Canada, Kelowna (and/or the surrounding area) requires new substations to accommodate this growth. Land acquisition in the City of Kelowna is becoming a significant challenge for FBC, making it difficult to procure land in a timely manner to support the execution of projects. Accordingly, during the Rate Framework term, FBC will begin the early evaluation of alternative property locations as part of the planning process for new substations and to support the timely acquisition of land.

3.3 FEI CAPITAL EXPENDITURES

Table C3-1 below provides FEI's gross capital expenditures (before Contributions in Aid of Construction or CIAC) for the term of the Current MRP. The 2020 through 2023 expenditures are actual; the 2024 expenditures are projected.

Table C3-1: FEI Actual and Projected Regular Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Growth Capital	85,336	91,505	106,848	117,538	114,826
Sustainment Capital	112,405	115,763	124,653	129,588	130,628
Other Capital	50,745	50,246	46,560	54,312	53,194
Total Regular Capital (Gross)	**248,486**	**257,514**	**278,060**	**301,438**	**298,648**

In this Application, FEI is seeking approval of the level of Regular Sustainment and Other capital expenditures to be incorporated in rates over the years 2025 to 2027, and approval of the method to be used to incorporate Growth capital expenditures into rates over the same time period.

Table C3-2 below summarizes the Approved and Forecast expenditures for gross Regular capital for FEI. The amounts shown in the years 2025 through 2027 for Growth capital have been calculated under the Growth capital formula using the Approved 2024 net inflation factor and an illustrative forecast of Gross Customer Additions for each year.

Table C3-2: FEI Approved and Forecast Regular Capital Expenditures 2020-2024 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Growth Capital	87,531	54,686	86,567	67,763	59,883
Sustainment Capital	129,336	130,628	125,599	131,733	125,484
Other Capital	54,514	51,252	67,904	62,696	61,213
Total Regular Capital (Gross)	**271,381**	**236,566**	**280,069**	**262,192**	**246,580**

The Regular capital expenditures are discussed below in terms of Growth (Section C3.3.1), Sustainment (Section C3.3.2), and Other capital (Section C3.3.3), with explanation provided for any project that is forecast to exceed $2 million. The Regular Flow-through capital categories are also discussed in Section C3.3.4.

3.3.1 FEI Growth Capital

FEI's Growth capital expenditures consist of the installation of new mains, services and meters necessary to attach new customers to the gas distribution system, as well as distribution pressure (DP) system improvements required when the capacity of the gas distribution system at a specific service location is insufficient to meet an adequate level of inlet pressure to ensure reliable service to customers.

Under the Current MRP, FEI's Growth capital expenditures are set based on an indexing formula using a unit cost approach escalated each year by the inflation factor less the approved productivity improvement factor (X-Factor), as discussed in Sections C1.3 and C1.4 respectively, and multiplied by a forecast of gross customer additions plus a true-up for the variances between prior years' forecast and actual gross customer additions. The following equation illustrates the formula used to determine Growth capital (GC):

$$GC_t = UCGC_{t-1} \times (1 + (I - X)) \times GCA_t + TUp_{t-2}$$

Where: *GCA= Gross Customer Additions*
UCGC = Unit Cost Growth Capital
I = Inflation Factor
X = Productivity Improvement Factor
t = Forecast year
TUp = True-up

3.3.1.1 FEI Growth Capital During the Current MRP Term

Growth capital expenditures, both in total and on a per customer basis, for mains, services, meters, DP system improvements, and growth-related CIAC for 2020 to 2024 are summarized in the table below.

Table C3-3: FEI Growth Capital Expenditures and UCGC 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
New Customer Mains	29,699	25,637	39,301	38,398	35,611
New Customer Services	49,794	58,291	58,819	60,376	54,127
New Customer Meters	4,690	4,125	4,011	4,287	2,840
System Improvements (DP)	1,153	3,452	4,718	14,477	22,248
Total Growth Capital (Gross)	**85,336**	**91,505**	**106,848**	**117,538**	**114,826**
CIAC	(1,791)	(1,719)	(1,850)	(1,688)	(1,252)
Total Growth Capital (Net)	**83,545**	**89,786**	**104,998**	**115,850**	**113,574**
Gross Customer Additions	18,890	20,344	16,589	15,608	11,765
Acrtual Unit Costs, Net (UCGC)	**4,423**	**4,413**	**6,329**	**7,422**	**9,654**

As shown in the above table, although the number of Gross Customer Additions has declined since 2021, the unit costs have been increasing. The key drivers of the increase in Growth capital unit costs include:

- Unprecedented inflationary increases;
- Increased complexity of mains installations, primarily associated with higher density dwellings and in developing areas;

- Increased municipal restrictions and permitting requirements for installation of mains; and
- A higher number of DP system improvements.

Each of these cost drivers, as well as mitigation efforts that FEI has undertaken during the Current MRP term, are described below.

3.3.1.1.1 SIGNIFICANT INFLATIONARY PRESSURES

Table C3-3 above shows that the unit cost growth capital (UCGC) was relatively stable in 2020 and 2021 but started to increase significantly in 2022 and 2023. This trend coincided with significant global market events that occurred, including the recovery from the COVID-19 pandemic, supply chain disruptions, and the war in Ukraine. These unforeseen events significantly increased market prices of many commodities and services that make up FEI's supply chain and did so in a sustained way, such that these inflated prices for commodities and services remained at this high level into 2024. The impact on FEI's Growth capital has been similar to what has been experienced in FEI's Sustainment capital portfolio and by other utilities in North America over the same period. As discussed in FEI's Annual Review for 2023 Delivery Rates, gas utilities across North America saw an average escalation of 31.2 percent in capital costs between the first quarter of 2020 and the first quarter of 2022. As part of the Annual Review for 2023 Delivery Rates Decision and Order G-352-22, FEI received approval of increases to its Sustainment capital forecasts for 2023 and 2024 to reflect these cost pressures.

As also identified in FEI's Annual Review for 2023 Delivery Rates,[96] one contributor to the inflationary increases for Growth capital, and to a lesser extent Sustainment capital, was that FEI's Mains and Services (M&S) construction contracts expired at the end of 2021. As a result of the contracts expiring, FEI engaged in a competitive bidding process for new contractors and implemented a new contracting strategy utilizing more contractors, increasing the total number of contractors from two in 2019 to five in 2022. Despite a competitive bidding process and this new contracting strategy, all new contracts put in place in 2022 had higher rates than the previous contracts, reflecting the significant inflationary pressures being experienced in the industry. The higher rates in the new M&S construction contracts contributed to the significant increase in the unit costs for FEI's capital. FEI notes that the contracts put in place in 2022 will expire by the end of 2024. FEI is currently working on renewing these contracts with the goal of renewing them to 2027, coinciding with the end of the Rate Framework term. This should provide a more stable contractor environment for FEI's capital program for the coming three years.

3.3.1.1.2 INCREASE IN COMPLEXITY OF MAINS INSTALLATIONS

Another factor that contributed to the higher unit cost of Growth capital is the increasing complexity of mains installations.

There are many factors that led to increased complexity in main installations, including evolving government policy and the continuing market shift towards high density dwellings such as

[96] Pages 59-60 and Footnote 43.

townhomes and high-rises in place of single-family dwellings, which led to more challenging permit requirements and more complex installations. For example, main installations for high-density dwellings require a larger main pipe size diameter to service a much more diverse load profile. In addition, FEI has been experiencing an increasing trend of mains requiring narrower and more challenging running lines during installation, as well as increasing underground utility congestion which requires additional coordination between utilities vying for limited space in smaller areas. All of these factors have increased the complexity of the work, resulting in higher unit costs.

3.3.1.1.3 INCREASE IN MUNICIPAL RESTRICTIONS AND PERMITTING REQUIREMENTS

During the Current MRP term, more road use permits have been required with increasing restrictions on working hours. This is due to local traffic impacts in densely populated areas, especially for high-density developments.

For example, it is now more common for FEI to incur additional costs due to night shift work imposed by a municipality with restrictions on day shift hours, or additional costs for redesigning alignment due to local municipality requests to reserve space for future possible city utilities. There are also additional costs due to requirements by the local municipality for full lane paving (as opposed to re-paving trench widths), greater asphalt thicknesses, and additional soil contamination testing and disposal.

Despite the increasing restrictions and permitting requirements, FEI continues to seek out cost-effective solutions and/or negotiate workaround solutions to minimize the additional costs.

3.3.1.1.4 INCREASE IN NUMBER OF DP SYSTEM IMPROVEMENTS

As more customers connect to FEI's system over time, especially large volume customers such as multi-family and high-density dwellings, DP system improvements in the localized area are required to ensure sufficient capacity is available for customers. The timing of each individual DP system improvement does not always fall in the same year as new customers attaching to FEI's system as it depends on the available system capacity in the localized region and the number of new customers attachments. FEI is experiencing an increased need for DP system improvements to support customer demand as the system has become more constrained over time.

3.3.1.2 FEI Growth Capital for the Rate Framework Term

With this Application, FEI proposes to continue with a unit cost approach to determining Growth capital, with re-basing of the starting UCGC amount.

FEI believes that the impact of significant global events, like the COVID-19 pandemic and supply chain issues that occurred during the term of the Current MRP, are now fully embedded in the cost structure. Given the shorter length of the Rate Framework, FEI considers that the formula approach based on unit costs and a forecast of gross customer additions with true-up for variances remains the most appropriate method to establish FEI's Growth capital spending envelope. Furthermore, since this approach will continue to be dependent on the number of gross

customer additions, it will provide flexibility when establishing the amount of Growth capital funding each year during the ongoing energy transition. For example, if the number of gross customer additions remains stable, the formula approach will continue to provide a consistent level of Growth capital funding; however, if the number of gross customer additions declines during the three-year term, the formula approach will also reduce the Growth capital spending envelope while still allowing FEI to meet its obligation to connect new customers when requested to do so.

Any variances between actual Growth capital and the spending envelope provided by the Growth capital formula will result in variances in rate base, depreciation, financing, and taxes, which will all affect the Company's ROE and be subject to earnings sharing. As such, the formula approach will continue to incent FEI to improve on efficiency and identify potential savings in Growth capital related work.

The following subsections discuss re-basing of the starting unit cost of Growth capital for 2025.

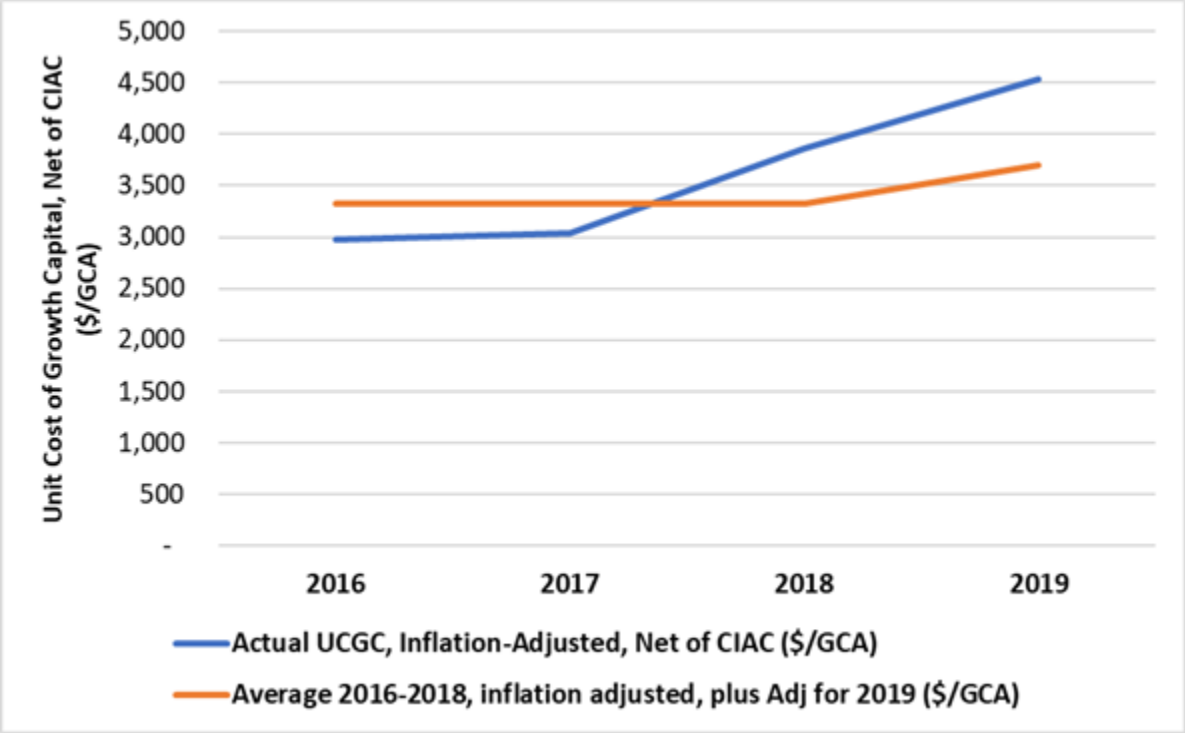
3.3.1.2.1 GROWTH CAPITAL BASE UNIT COST

Under the Current MRP, the starting base unit cost (i.e., 2019) was set based on the average of actual unit costs from 2016 to 2018 (inflation-adjusted to 2019 dollars) plus adjustments for 2019. However, the approved UCGC (net of CIAC) in the first year of the Current MRP (i.e., $3,789 in 2020) was already significantly less than the first year's actual UCGC (net of CIAC) of $4,423. Given that the formula for Growth capital is based on the approved prior year's unit cost, this shortfall in the first year carried on throughout the term of the Current MRP. Establishing a reasonable and sufficient starting base unit cost is critical to having a well-functioning Growth capital formula.

The main reason for the discrepancy in the UCGC at the beginning of the Current MRP term was because the starting base UCGC in 2019 was set using an average from 2016 to 2018 (inflation-adjusted to 2019 dollars) plus forecast adjustments for 2019. Using an average of the three years rather than an approach more closely aligned with the most recent unit cost (2019) significantly understated the starting UCGC. In fact, as shown in Figure C3-3 below, even with the forecast adjustment for 2019, the starting base UCGC in 2019 was already approximately 22 percent less than the actual UCGC in 2019 before the Current MRP term even started.[97]

[97] 2019 Actual UCGC = $4,530, whereas 2019 Base UCGC = $3,704 ($4,530 / $3,704 – 1 = 22%).

Figure C3-3: Comparison of FEI's 2016 to 2019 UCGC Actuals and Average

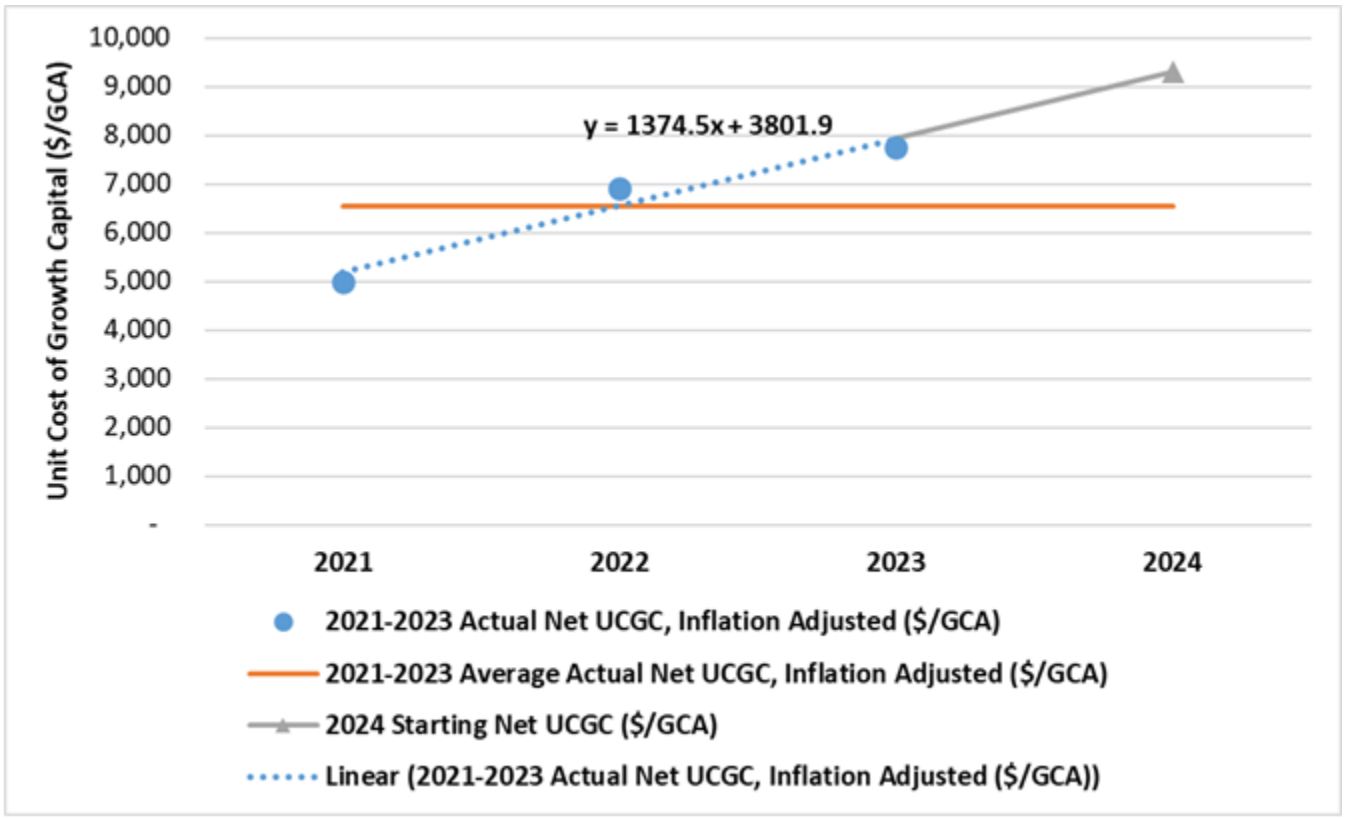


To avoid understating the starting base UCGC for the years 2025 to 2027, FEI proposes in this Rate Framework to calculate the starting Base 2024 UCGC by extrapolating from a linear regression of Actual UCGC between 2021 and 2023 (inflation-adjusted to 2024 dollars). Figure C3-4 below provides a comparison between the three-year regression approach and the previously used three-year average approach for setting the starting UCGC. The three-year regression approach allows for the growth trend in the UCGC over the recent years to be recognized. If FEI were to continue using the previous approach of a three-year average, the starting UCGC for 2024 would be $6,551 per GCA, which is significantly less than the actual UCGC in 2023. Given the recent increases in construction costs due to inflation and other factors as discussed above, FEI does not believe it is reasonable to assume that a starting UCGC that is less than the current level by approximately 15 percent[98] would provide a sufficient level of capital for attaching new customers. As previously explained, using a starting UCGC that already carries a significant shortfall even before the start of the Rate Framework will provide an insufficient level of Growth capital throughout the term.

Using the regression approach shown in Figure C3-4 below, the starting base UCGC for the Rate Framework would be $9,300 per GCA, which is comparable to the current 2024 Projected UCGC of $9,654 per GCA as shown in Table C3-3 above and would better account for the increase in construction costs in recent years.

[98] 2023 Actual UCGC = $7,422 x (1 + 4.41%) = $7,750 in 2024 dollars, whereas the average of the Actual UCGC from 2021 to 2023 = $6,551 in 2024 dollars ($6,551 / $7,750 – 1 = -15%).

Figure C3-4: Comparison between Three-year Linear Regression Approach and Three-year Average Approach for Setting FEI's Starting Base UCGC



3.3.1.2.2 ILLUSTRATION OF 2025 TO 2027 GROWTH CAPITAL SPENDING ENVELOPE

Based on the proposed 2024 starting base UCGC of $9,300, Table C3-4 below provides an example of the calculation of FEI's formula-based Growth capital from 2025 to 2027 using the Approved 2024 net inflation factor and an illustrative forecast of Gross Customer Additions over the term of the Rate Framework. The forecast of Gross Customer Additions from 2025 to 2027 shown in Table C3-4 below assumes a decline in customer attachments from the 2024 Projected level given the current policy environment as discussed in Section B1 of this Application. FEI notes that these estimates are for illustration purposes only and not for the purpose of determining the Growth capital for 2025 to 2027, which will be determined in each year's Annual Review.

For comparison, FEI also provides an illustration of the Growth capital spending if the number of Gross Customer Additions remains at the 2024 Projected Gross Customer Additions of 11,765 shown in Table C3-3 above.

Table C3-4: Illustration of Range of FEI Growth Capital Expenditures 2025 to 2027

	2024	2025	2026	2027
Total Unit Cost Growth Capital $/GCA (Net of CIAC)	9,300	9,664	10,042	10,435
Net Inflation Factor		3.914%	3.914%	3.914%
GCA Forecast		8,700	6,500	5,500
Inflation Indexed Growth Capital ($000s)		84,077	65,273	57,393
Growth CIAC (2024 Approved)		2,490	2,490	2,490
Total Inflation Indexed Gross Growth Capital		**86,567**	**67,763**	**59,883**
GCA Forecast @ Current 2024 Projected Level		11,765	11,765	11,765
Inflation Indexed Growth Capital - GCA @ Current Level ($000s)		113,697	118,144	122,768
Growth CIAC (2024 Approved)		2,490	2,490	2,490
Total Inflation Indexed Gross Growth Capital - GCA @ Current Level		**116,187**	**120,634**	**125,258**

The formula approach provides FEI the flexibility needed to adjust Growth capital annually for changes in customer attachments, whether due to the energy transition or other factors.

3.3.1.3 FEI Growth Capital Summary

The proposed formula and base unit cost for FEI's Growth capital is intended to provide funding for the Company to make the capital investments necessary to add customers that request service, while allowing a fair and balanced recovery of the costs.

During the Current MRP term, FEI experienced significant cost pressures in Growth capital, primarily due to unanticipated inflationary pressures since 2021 which also included contractor price increases in 2022, increasing complexity in mains and services installation, evolving local government restrictions and permitting requirements, and a higher number of system improvements. However, FEI expects the Growth capital cost increases will track more closely to general inflation over the three-year term of the Rate Framework.

With the expectation of a more stable Growth capital environment, FEI proposes to continue with the existing formula-based, unit cost approach to determining Growth capital. The formula approach will continue to allow expenditures to vary based on customer growth while maintaining accountability for expenditures to attach new customers based on the unit cost.

3.3.2 FEI Sustainment Capital

The expenditures within Sustainment capital include gas system improvements to transmission and distribution assets to ensure the continued safety, reliability, and integrity of the system. Sustainment capital includes expenditures for meter recall programs, replacements and upgrades to the distribution and transmission systems, and expenditures for mains and service renewals and alterations.

Sustainment capital is further classified into four categories of expenditures. Table C3-5 below summarizes the actual expenditures from 2020 to 2023 and the projected 2024 expenditures.

Table C3-5: FEI Actual and Projected Sustainment Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Customer Measurement	30,398	32,182	29,006	27,671	30,494
Transmission System Relilability & Integrity	34,963	38,251	47,168	50,534	49,573
Distribution System Reliability	14,022	13,464	15,848	19,660	17,709
Distribution System Integrity	33,023	31,866	32,630	31,723	32,852
Total Sustainment Capital (Gross)	**112,405**	**115,763**	**124,653**	**129,588**	**130,628**
Sustainment CIAC	(4,879)	(4,771)	(4,547)	(8,139)	(5,065)
Total Sustainment Capital (Net)	**107,527**	**110,992**	**120,106**	**121,449**	**125,563**

As discussed during the Annual Review for 2023 Delivery Rates and in Section C3.3.1.1 above, FEI has experienced pressures during the Current MRP term due to a variety of external factors, including the COVID-19 pandemic, supply chain issues, significant inflationary increases, and the war in Ukraine, among others.

The drivers of the increases in the Sustainment capital portfolios discussed in the Annual Review for 2023 Delivery Rates are summarized as follows:

- Significant inflationary increases brought on by unanticipated events such as the COVID-19 pandemic and the war in Ukraine, which have resulted in large cost escalations in materials, labour and fuel; and
- Alteration activities driven by various large third-party infrastructure upgrade projects that have received funding from various levels of government as part of the COVID-19 pandemic economic recovery efforts.

FEI successfully implemented a number of mitigation strategies to limit the impact of cost pressures, thus allowing FEI to manage the overall cost increases. These mitigation strategies included:

- Reprioritizing projects, or components of a project (e.g., final paving) that could be safely re-scheduled to accommodate other project cost increases that could not be deferred. While FEI has delayed some work with flexible timing to accommodate the increased capital demands, this has only mitigated part of the capital pressures due to the magnitude of market and other pressures;
- Entering into long-term supply contracts for many commonly used materials and service providers (e.g., engineering consultants, construction contractors, etc); and
- Optimally allocating construction work to internal or external construction crews as appropriate.

Despite the mitigation strategies listed above, due to the magnitude of the overall inflationary pressure experienced by the North American gas utility industry, FEI was not able to fully mitigate the cost increases.

Table C3-6 below summarizes FEI's forecast Sustainment capital expenditures required over the 2025 to 2027 Rate Framework term, along with the 2023 and 2024 Approved amounts for comparison. FEI notes that it will realize a large reduction in the Customer Measurement portfolio starting in 2025 due to the deployment of the AMI project.

Table C3-6: FEI Approved and Forecast Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Customer Measurement	30,015	30,494	14,295	13,459	13,422
Transmission System Relilability & Integrity	47,937	49,573	60,065	75,133	66,469
Distribution System Reliability	15,341	17,709	21,245	17,254	9,237
Distribution System Integrity	36,043	32,852	29,993	25,887	36,356
Total Sustainment Capital (Gross)	**129,336**	**130,628**	**125,599**	**131,733**	**125,484**
Sustainment CIAC	(4,342)	(4,342)	(4,436)	(8,443)	(4,615)
Total Sustainment Capital (Net)	**124,994**	**126,286**	**121,163**	**123,290**	**120,869**

The forecast capital expenditures for each of the categories shown in the table above are described in more detail in the following sections, along with a description of projects forecast to exceed $2 million that are expected to proceed within the 2025 to 2027 timeframe.

3.3.2.1 Customer Measurement

Customer Measurement includes expenditures related to meter exchanges and meter set upgrades. Customer Measurement is further broken down into the four broad categories shown in the table below. Details of the Customer Measurement capital expenditures from Table C3-6 above are provided in Table C3-7 below.

Table C3-7: FEI Approved and Forecast Customer Measurement Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Meter Materials	20,589	20,854	9,642	10,849	10,055
Residential Meter Alteration & Exchange	6,856	7,029	36	37	38
Small Commercial / Industrial Meter Alteration & Exchange	1,086	1,064	1,062	1,073	1,083
Large Commercial / Industrial Meter Alteration & Exchange	1,484	1,547	3,555	1,500	2,247
Total Customer Measurement	**30,015**	**30,494**	**14,295**	**13,459**	**13,422**

The Customer Measurement spending in the Meter Materials and Residential Meter Alteration & Exchange categories decreases starting in 2025 in comparison to recent years due to the AMI project. The AMI project is replacing the residential diaphragm style meters that would have needed to be replaced/altered with new ultrasonic style meters. The AMI project capital will be added to FEI's rate base in multiple phases as the project progresses, consistent with the

treatment of FEI's other approved Major Project capital. Accordingly, the AMI project capital is not included in the Regular Sustainment capital expenditure forecasts.

The forecast capital in the remaining two categories (Small Commercial/Industrial and Large Commercial/Industrial Meter Alteration & Exchange) is relatively consistent with the currently approved levels of spending, other than an increase in the Large Commercial/Industrial Meter Alteration & Exchange expenditures category in 2025 and again in 2027. The increase in 2025 is due to a number of smaller projects with similar timing. The increase in 2027 is for a project that is forecast to cost more than $2 million, described further below.

- **CS Fording Greenhills Mine Station Upgrade**: This project will replace and relocate the customer station to a higher elevation, approximately 20 m to the west, along the FEI pipeline Right-of-Way. A number of operational issues have been reported at the Customer TP/DP pressure control station in Elk Valley, BC. The identified operational issues include access concerns, undersized station bypass inhibiting maintenance activities, station heater inefficiency, and seasonal flooding in the Spring due to the low elevation of the building. The estimated cost of this project is $2.1 million, with forecast spending of $0.429 million in 2026 and $1.660 million in 2027.

3.3.2.2 Transmission System Reliability & Integrity

The Transmission System Reliability & Integrity capital category includes activities related to the ongoing safe and reliable operation of the transmission system. The main areas of expenditure under this category include:

- Pipeline alterations to mitigate the threat of natural hazards, comply with regulatory codes and standards, and facilitate maintenance and inspections;
- Alterations to transmission facilities, including pressure control, compression, and LNG to ensure safe, reliable, and efficient operation; and
- Pipeline major inspections, including in-line inspections and marine crossing inspections.

Details of the Transmission System Reliability & Integrity capital expenditures from Table C3-6 above are provided in Table C3-8 below.

Table C3-8: FEI Approved and Forecast Transmission System Reliability & Integrity Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Pipeline Alterations	16,667	14,479	23,186	28,563	31,165
Pipeline Capacity Improvements	-	-	-	-	335
Pipeline Station Alterations	2,014	3,835	3,127	6,151	1,965
Transmission System Telemetry Alterations	353	303	1,487	667	594
Compressor Station Alterations	9,140	13,096	7,899	11,710	8,850
Compressor Unit Overhauls	2,128	2,343	-	216	2,447
LNG Plant Alterations	6,579	7,322	7,200	7,200	7,200
Transmission System Cathodic Protection	356	395	425	409	417
Pipeline Inspection	10,635	7,767	16,100	20,197	13,497
Pipeline SRW Acquisition	65	33	641	21	-
Total Transmission System Reliability & Integrity	**47,937**	**49,573**	**60,065**	**75,133**	**66,469**

The primary categories of forecast increased capital spending during the Rate Framework term are Pipeline Alterations, Transmission System Telemetry Alterations, and Pipeline Inspection. There is also increased variability in the Pipeline Station Alterations category. Each of these areas is discussed further below.

- **Pipeline Alterations:** The 2025-2027 Forecasts are higher than the 2023 and 2024 Approved levels due to the need to address an increased number of regulatory compliance-driven, class location upgrades. These investments consist of pipeline upgrades to account for more stringent design parameters and safety factors due to population growth in areas adjacent to FEI pipelines. Class location assessments are completed for all pipeline assets on an annual basis, with additional expenditures required during the Rate Framework term due to continued population growth within FEI's service territory.

- **Pipeline Station Alterations:** Forecast spending for Pipeline Station Alterations is on average consistent with the 2023 and 2024 Approved amounts, with the exception of one larger project forecast for 2026. This project involves adding a new control station on the Roebuck Valve Assembly site on the Livingston Patullo 457 (LIV PAT 457) pipeline to support maintenance activities requiring lower pressures. Other larger projects under this portfolio include remote control valve upgrades on the ITS, bypass piping modifications at control stations, and Established Operating Pressure (EOP) control projects.

- **Transmission System Telemetry Alterations:** There is a larger expenditure forecast in 2025 due to necessary hardware upgrades of gas control systems, specifically for the supervisory control and data acquisition system (SCADA).

- **Pipeline Inspection:** ILI programs are developed by FEI's System Integrity department based on various factors such as age, attributes, and condition of the pipeline. Recognizing the susceptibility of its coastal and interior transmission pipelines to time-

dependent cracking threats, the BCUC has approved alterations to FEI's CTS and ITS to facilitate the adoption of Electromagnetic Acoustic Transducer (EMAT) ILI tools as the most technically and financially feasible method to monitor these threats. Alterations to existing pipeline systems were necessary to facilitate successful EMAT ILI runs. FEI established the EMAT program for the CTS following BCUC Decision and Order C-3-22, with a pilot program initiated in 2019. FEI has updated the 2025-2027 ILI portfolio to incorporate EMAT ILI for the ITS, as approved by BCUC Decision and Order C-1-24. The first EMAT run for the ITS is scheduled to begin as early as 2025.

The inclusion of EMAT in the 2025-2027 portfolio results in a 60 percent increase in inspection costs compared to not employing this technology. Considering the time-dependent nature of cracking threats (i.e., crack growth over time) and the likelihood of rupture as its failure mode, EMAT will become an integral part of the ILI program. EMAT run frequency will align with the condition of the pipeline and FEI's integrity management program standards.

Table C3-9 shows the anticipated spend profile of the projects greater than $2 million in the Transmission System Reliability & Integrity category from 2025 to 2027.

Table C3-9: FEI Forecast Transmission System Reliability & Integrity Capital Expenditures on Projects Greater than $2 million 2025-2027 ($000s)

Project	Portfolio	2025 Forecast	2026 Forecast	2027 Forecast
Shallow Depth of Cover Site 24 – Grand Forks Trail Lateral 273	Pipeline Alterations	62	449	3,806
Livingston Pattullo 457 – Relocate Pig Receiver to Roebuck	Pipeline Alterations	500	2,000	25
Kingsvale Princeton 323 kP9.55 Voght Creek (Hazard ID547)	Pipeline Alterations	310	1,671	19
Merritt Lateral 114 – Coldwater River Erosion (Hazard ID60)	Pipeline Alterations	134	2,000	22
Shoreacres Lateral 114 – kP0.18 Slocan River (Hazard ID2168)	Pipeline Alterations	-	616	2,609
Princeton Oliver 323 – 530m @ kP95.3 Class 3 Upgrade	Pipeline Alterations	88	394	2,196
Vancouver Mainland 273 788m @KP34 Class 3 Upgrade	Pipeline Alterations	125	1,906	29
Highland Valley Lateral 114 – kP13.3 to 16.7	Pipeline Alterations	582	3,865	52
Roebuck TP – New Control Station	Pipeline Station Alterations	500	2,500	248
PLC & HMI Upgrades – Kitchener and Langley Compressor Stations	Compressor Station Alterations	3,576	5,412	68
Tilbury LNG – 2027 Pressure Vessel Inspections	LNG Plant Alterations	-	150	3,700
Fording Lateral 219 – ILI	Pipeline Inspection	1,331	1,000	-

Each of these projects is described further below.

- **Shallow Depth of Cover Site 24 – Grand Forks Trail Lateral 273:** The pipeline at this location has been found to have insufficient depth of cover due to farming activities and ground settlement in the area. The existing pipeline will need to be removed and replaced with a new pipeline installed at a minimum depth of cover of 1.2 metres. The estimated cost of this project is $4.4 million in total, with the majority of the costs expected to be incurred in 2027.

- **Livingston Pattullo 457 – Relocate Pig Receiver to Roebuck:** This project involves relocating the existing pig receiving barrel for the LIV PAT 457 pipeline from its current location at the Pattullo Gate Station to the Roebuck Valve Assembly. FEI needs to relocate this receiving barrel because, due to the Pattullo Gas Line Replacement (PGR) project, there is not enough flow through the pipeline at the current location to run the in-line inspection tools. The barrel will also be upgraded to meet the requirements of new ILI tool technology. This project is anticipated to cost $2.6 million, with most of the costs incurred in 2026.

- **Kingsvale Princeton 323 kP9.55 Voght Creek (Hazard ID 547):** The KIN PRI 323 and PRI LTL 88 transmission pressure pipelines have been identified as having a shallow depth of cover due to scouring in the creek. Replacement of the two pipeline crossings is needed to restore adequate depth of cover to these two pipelines. The estimated cost of this project is $2.5 million, with the majority of the costs forecast to be incurred in 2026.

- **Merritt Lateral 114 – Coldwater River Erosion (Hazard ID60):** The City of Merritt is planning to remove the temporary dike that was installed in 2021 due to the flood in the Coldwater River. FEI expects that the pipeline will not have sufficient cover to serve as a permanent water crossing when the temporary dike is removed. The estimated cost of this project is $2.1 million and will be undertaken in 2026.

- **Shoreacres Lateral 114 – kP0.18 Slocan River (Hazard ID2168):** The depth of cover of the underwater pipeline crossing the Slocan River needs to be re-established as the pipe located near the left bank is exposed. Grade control and erosion protection will also be considered in the design, as well as backwater effects from the Kootenay River. The estimated cost of this project is $3.8 million, with the majority of the costs incurred in 2027.

- **Princeton Oliver 323 – 530m @ kP95.3 Class 3 Upgrade:** Due to development growth in the Oliver area, a section of the existing pipe needs to be upgraded to meet Class 3 location requirements as defined by CSA Z662. The estimated cost of this project is $3.1 million, with the majority of the costs incurred in 2027.

- **Vancouver Mainland 273 788m @KP34 Class 3 Upgrade:** This segment of pipe's class location designation changed due to development in the area. The pipe is now required to be designed to a Class 3 location and therefore needs to be upgraded to meet CSA Z662 requirements. The estimated cost of this project is $2.0 million and is expected to be undertaken in 2026.

- **Highland Valley Lateral 114 – kP13.3 to 16.7:** The current location of the transmission pipeline is in conflict with the expansion proposed by the Highland Valley Copper mine. This is a customer driven project and will be fully funded by Highland, with the offsetting contribution included as a CIAC. There is also potential for load increase during the expansion. The estimated cost of this project is $4.8 million, with the majority of spending forecast for 2026. Since the customer will be providing a CIAC for the project, if the project scope or schedule shifts, there will be no impact to the net Sustainment capital expenditures.

- **Roebuck TP – New Control Station:** This project is related to the Livingston Patullo 457 – Relocate Pig Receiver to Roebuck project described above. As a result of the PGR project, there is not enough flow through the pipeline to run the ILI tools. Therefore, to manage any integrity threats, a new pressure control station is required to reduce pressure on a segment of the LIV PAT 457 transmission pressure pipeline between Roebuck and Sandell from a Maximum Operating Pressure (MOP) of 4020 kPa to an MOP of 1900 kPa. Pressure control equipment will also be installed to control pressure on the TP pipelines west of Roebuck. The estimated cost of this project is $3.2 million, with the majority of the costs forecast to be incurred in 2026.

- **Compressor Unit Control Upgrades:** Programmable Logic Controller (PLC), Human Machine Interface (HMI) and Control System upgrades are required at the Kitchener and Langley Compressor Stations as are end-of-life and need to be replaced. FEI will identify, supply, and install the latest version of PLC software and HMI to bring the units up to current standards and serviceability. The total estimated cost of these projects is $9.2 million.

- **Tilbury LNG – 2027 Pressure Vessel Inspections:** The Tilbury 1A LNG facility has 147 pressure vessels requiring a major inspection every five years in accordance with Technical Safety BC. These inspections check for internal damage and corrosion to ensure the integrity of the vessels and to estimate remaining life. The inspection commencing in 2027 will include a review of the process history of each vessel during the previous five years of operation and any necessary changes to isolation plans, hazard analysis or focus areas based on findings from the last inspection. The total estimated capital cost of this project is $3.8 million, with the majority of spending occurring in 2027. During these inspections, other maintenance work is completed that is not capitalized, currently estimated at $400 thousand. FEI will forecast this portion as Flow-through O&M for the LNG Facilities in its Annual Review for 2027 Delivery Rates.

- **Fording Lateral 219 – ILI:** In accordance with FEI's ILI program requirements, the ILI runs on the 219 mm Fording Lateral will be completed to provide critical pipeline condition information required to manage the integrity of the pipeline. The ILI runs will be completed over a two-year period from 2025 to 2026. The estimated cost for this project is $2.4 million.

3.3.2.3 Distribution System Reliability

Distribution System Reliability expenditures consist primarily of new pressure control stations or improvements to existing pressure control stations due to condition, load change, obsolescence, and regulatory compliance. Also included in this category are alterations or improvements to distribution telemetry installations and distribution sectioning valves.

Details of the Distribution System Reliability capital expenditures from Table C3-6 above are provided in Table C3-10 below.

Table C3-10: FEI Approved and Forecast Distribution System Reliability Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Distribution Stations Alterations	11,485	13,633	12,520	11,372	7,150
Distribution System Telemetry Alterations	1,656	329	582	377	125
Distribution System Capacity Alterations	64	476	3,539	180	956
Distribution Stations New	1,326	3,159	3,539	5,238	41
Revelstoke Propane Plant Alterations	252	92	437	32	964
Distribution Sectioning Valves	558	20	629	55	-
Total Distribution System Reliability	**15,341**	**17,709**	**21,245**	**17,254**	**9,237**

Overall, on average, Distribution System Reliability capital expenditures from 2025 to 2027 are decreasing relative to the 2023 and 2024 Approved amounts. Areas that have significant variances are Distribution Stations Alterations, Distribution System Capacity Alterations, Distribution Stations New, and Revelstoke Propane Plant Alterations. Each of these areas are discussed further below.

- **Distribution Stations Alterations:** Expenditures in 2027 are forecast to be lower than prior years due to the timing of specific projects. These station upgrades are typically required to address capacity shortfalls and operational risks.
- **Distribution System Capacity Alterations:** There is a larger expenditure scheduled in 2025 to address a large load coming online in Mission. This project is approximately $3.1 million and is further described below.
- **Distribution Stations New:** The Distribution Stations New portfolio does not follow a particular trend, as the number of projects is fewer, and their timing is dependent on several factors including growth in specific regions/municipalities. There are two projects over $2 million in this category which are described below.
- **Revelstoke Propane Plant Alterations:** The existing Revelstoke propane plant experiences capacity shortfalls during winter cold weather periods. FEI plans to add tank capacity at the existing plant to be able to serve a longer duration during the cold weather. The upgrade is expected to occur in 2028, with planning work such as design and procurement commencing in 2027.

Table C3-11 below shows the anticipated spend profile of the projects in this category greater than $2 million from 2025 to 2027.

Table C3-11: FEI Forecast Distribution System Reliability Capital Expenditures on Projects Greater than $2 million 2025-2027 ($000s)

Project	Portfolio	2025 Forecast	2026 Forecast	2027 Forecast
Kinchant Street and Bowron Avenue - Station Upgrade	Distribution Stations Alterations	175	1,938	17
6 Ave & Cumberland – Station Rebuild	Distribution Stations Alterations	815	1,191	-
SI – 1050m x 323 IP/ST Riverside St, Abb	Distribution System Capacity Alterations	3,140	-	-
Colwood New IPDP Stn	Distribution Stations NEW	690	4,515	41
New Stn – 1900/420 Downes/Bradner	Distribution Stations NEW	2,472	40	-

Each of these projects is described further below.

- **Kinchant Street and Bowron Avenue – Station Upgrade:** The Kinchant Street pit station serving downtown and West Quesnel is currently operating at 90 percent capacity. In addition to capacity issues, the station has poor access to complete maintenance and safety checks. A new location is proposed for an above ground station. The estimated cost of this project is $2.5 million with spending primarily in 2026.
- **6 Ave & Cumberland – Station Rebuild:** A new pit station is required to replace the existing 6th Ave and Cumberland Street District Station in New Westminster. The proposed upgrades include relocating the existing station as it is currently located at a busy road posing a risk of injury for the public and FEI personnel, and there is limited space for access. A suitable location near 7th Ave and Cumberland Street has been identified for the new pit station. The estimated cost for this project is $2.1 million with spending primarily in 2026.
- **System Improvement – 1050m x 323 IP/ST Riverside St, Abb:** This upgrade is required due to a large commercial load coming online in north Mission. The 1050 m of 323 mm IP pipeline is required to be online by 2025 and will be required to provide adequate station inlet pressure for two stations in Mission. The estimated cost for this project is $3.1 million.
- **Colwood New IPDP Station:** The population and natural gas demand in the Colwood area on Vancouver Island is growing significantly. A new IP/DP station is proposed to address growth in demand and capacity constraints in Colwood. Potential location options are currently being evaluated. The estimated cost of this project is $5.8 million.
- **New Stn – 1900/420 Downes/Bradner:** Residential and commercial growth in the Townline area of Abbotsford has significantly impacted the DP network in the area. Delivery of minimum service pressure will become more challenging as commercial loads

are set to come online in 2026. FEI will install a new IP/DP station in the vicinity of the intersection of Downes Rd and Bradner Rd to increase flow to the downstream DP network. This project will commence in 2024, with approximately $1.2 million projected to be incurred in 2024 and the remainder of the costs forecast to be incurred in 2025 and 2026.

3.3.2.4 Distribution System Integrity

Distribution System Integrity expenditures consist primarily of main and service alterations and replacements due to condition or at the request of third parties.

Details of the Distribution System Integrity capital expenditures from Table C3-6 above are provided in Table C3-12 below.

Table C3-12: FEI Approved and Forecast Distribution System Integrity Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Main and Service Alterations	21,817	20,669	18,104	15,577	20,042
Main and Service Renewals	10,605	9,488	9,130	7,498	13,446
Service Hazards Mitigation	2,154	1,223	1,259	1,284	1,310
Distribution System Cathodic Protection	1,467	1,472	1,500	1,527	1,558
Total Distribution System Integrity	**36,043**	**32,852**	**29,993**	**25,887**	**36,356**

Overall, the average Distribution System Integrity spending for the years 2025 to 2027 is lower than the 2023 and 2024 Approved amounts. Areas that have variances are Main and Service Alterations, and Main and Service Renewals. Each of these areas is discussed further below.

- **Main and Service Alterations:** The forecast for this portfolio is lower in 2025 and 2026 in comparison to 2023 and 2024, but then increases in 2027 due to two projects over $2 million, discussed below.
- **Main and Service Renewals:** This category encompasses planned replacements of FEI's mains and services which are identified based on asset integrity, condition, and age. The forecasts for this portfolio in 2025 and 2026 are relatively consistent with the 2023 and 2024 Approved amounts. However, FEI is forecasting higher expenditures in 2027 due to a higher volume of planned main renewals based on the specific timing of replacement determined through FEI's mains renewal program.

Table C3-13 below shows the anticipated spend profile of the projects in this category with forecast spending greater than $2 million during the 2025 to 2027 timeframe.

Table C3-13: FEI Forecast Distribution System Integrity Capital Expenditures on Projects Greater than $2 million 2025-2027 ($000s)

Project	Portfolio	2025 Forecast	2026 Forecast	2027 Forecast
Hwy 97 Quesnel River Bridge - Crossing Replacement	Main and Service Alterations	-	113	2,983
RICH IP – 8" Capstan Way to Cambie Rd Relocate	Main and Service Alterations	50	416	2,500

Each of these projects is described further below.

- **Hwy 97 Quesnel River Bridge – Crossing Replacement:** This project involves replacing the IP pipeline crossing on the Quesnel River Bridge due to the pipeline and pipe hangers' deteriorating conditions. This project is currently in development to review options to replace the pipe and hangers or to install a new crossing via horizontal directional drilling (HDD). The estimated cost of this project is $3.0 million, with spending primarily in 2027.
- **RICH IP – 8" Capstan Way to Cambie Rd Relocate:** This project is for an IP pipeline to supply the Cambie Rd & River Rd Station, which requires a capacity upgrade. Due to future plans by the City of Richmond at the current location, the upgraded station will have to be built in a new location and FEI may need to relocate a longer section of IP pipeline. The estimated cost of the project is $3.4 million, with spending primarily in 2027.

3.3.2.5 Contributions in Aid of Construction

The recoveries in this category are forecast based on the anticipated customer contributions for work for third party alterations and the historical level of contributions for Transmission crossing replacements and identified recoverable projects.

The two tables below provide the realized and projected CIAC over the Current MRP term, and the forecasts for 2025 to 2027, with 2023 and 2024 Approved amounts provided for comparison.

Table C3-14: FEI Actual and Projected Sustainment CIAC 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Sustainment CIAC	(4,879)	(4,771)	(4,547)	(8,139)	(5,065)

Table C3-15: FEI Approved and Forecast Sustainment CIAC 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Sustainment CIAC	(4,342)	(4,342)	(4,436)	(8,443)	(4,615)

With the exception of 2026, the forecasts generally reflect an anticipated stable level of contributions compared to recent years. The higher forecast CIAC in 2026 is for the Highland

Valley Lateral 114 project discussed above in Section C3.3.2.2 (Transmission System Reliability & Integrity).

3.3.3 FEI Other Capital

Other capital includes Equipment, Facilities, and IS expenditures, as well as a new category for Corporate Security expenditures.

Table C3-16 below summarizes the actual and projected Other capital expenditures from 2020 to 2024.

Table C3-16: FEI Actual and Projected Other Capital Expenditures 2020-2024 ($000s) [99]

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Equipment	16,024	14,025	11,186	12,169	14,240
Facilities	6,675	8,447	7,031	14,846	11,349
Information Systems	24,217	24,074	24,475	23,381	23,835
Corporate Security	3,829	3,700	3,868	3,917	3,770
Total Other Capital	**50,745**	**50,246**	**46,560**	**54,312**	**53,194**

Table C3-17 below provides the 2025-2027 Forecast Other capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-17: FEI Approved and Forecast Other Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Equipment	12,270	12,240	14,989	16,123	18,421
Facilities	14,686	11,349	18,727	13,053	8,551
Information Systems	24,458	24,563	25,300	25,800	26,500
Corporate Security	3,100	3,100	8,887	7,720	7,741
Total Other Capital	**54,514**	**51,252**	**67,904**	**62,696**	**61,213**

Each of the categories is discussed further below.

3.3.3.1 Equipment

Equipment capital expenditures include the acquisition of vehicles and equipment, telecommunication infrastructure, specialized tools and equipment, and radio system upgrades. Expenditures for the Equipment category are driven by obsolescence, excessive wear, and regulatory compliance.

[99] During the Current MRP, Corporate Security was included in the IS portfolio under Cybersecurity and in the Sustainment capital portfolio under Physical Security. Actuals for Corporate Security are now shown separately to allow for comparison with the 2025-2027 Forecast amounts.

Table C3-18 below summarizes the actual and projected Equipment capital expenditures from 2020 to 2024.

Table C3-18: FEI Actual and Projected Equipment Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Tools and Equipment	5,319	4,699	2,512	3,273	3,300
Fleet Services	8,845	7,905	7,213	7,309	9,400
Measurement Services	338	276	460	506	507
Radio Communications	1,155	787	671	749	700
Supply Chain	367	358	330	332	333
Total Equipment	**16,025**	**14,025**	**11,186**	**12,169**	**14,240**

Table C3-19 below provides the 2025-2027 Forecast Equipment capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-19: FEI Approved and Forecast Equipment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Tools and Equipment	3,300	3,300	3,537	3,608	4,092
Fleet Services	7,380	7,400	9,753	10,782	12,562
Measurement Services	507	507	531	541	552
Radio Communications	750	700	780	796	812
Supply Chain	333	333	388	396	404
Total Equipment	**12,270**	**12,240**	**14,989**	**16,123**	**18,421**

With the exception of Fleet Services, which is discussed further below, the 2025-2027 Forecasts for Equipment are generally consistent with 2023 and 2024 Approved amounts.

- **Fleet Services:** This category includes the replacement and/or acquisition of specialized heavy fleet vehicles, specialty equipment, mid-duty service vehicles, light duty passenger vehicles, and off-road vehicles necessary to meet FEI's operational requirements. Over the next few years, FEI has a substantial capital replacement requirement based on replacement triggers identified by age, engine hours, and utilization to maintain safe and reliable vehicles and equipment able to respond to customer calls and provide emergency response. FEI plans to replace 123, 84 and 95 vehicles in 2025, 2026 and 2027, respectively. These replacements encompass light duty, medium duty and heavy-duty trucks and vans, trailers, and other equipment.

  FEI considers many factors when determining the need for vehicle replacements. These include suitability to meet current and future business requirements and the ability to maintain adequate safety, as well as age, condition, and compliance with regulations and sustainability. Each replacement decision is evaluated on a unit-by-unit basis.

3.3.3.2 Facilities

Facilities capital expenditures include the acquisition or leasing of land, non-plant buildings such as offices, field musters and warehouses, and office furniture and equipment. The expenditures focus primarily on capacity planning, upgrading, and replacement of end-of-life assets.

Table C3-20 below provides the actual and projected Facilities capital expenditures from 2020 to 2024.

Table C3-20: FEI Actual and Projected Facilities Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Facilities	6,675	8,447	7,030	14,846	11,349

Table C3-21 below provides the 2025-2027 Forecast Facilities capital expenditures as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-21: FEI Approved and Forecast Facilities Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Facilities	14,686	11,349	18,727	13,053	8,551

Overall, on average over the Rate Framework term, FEI's forecast for Facilities capital expenditures is in line with the 2023 and 2024 Approved average amount. FEI is forecasting a large increase in 2025, with the forecast spending trending downwards for the remainder of the Rate Framework term. The key projects included within the 2025-2027 timeframe are discussed below.

Trail Operations Centre Replacement

The FEI Trail Operations Centre is nearing end-of-life and requires replacement. The property was purchased in 1960 by FEI's predecessor, Inland Natural Gas, and converted to the Trail Operations Centre. The building is circa 1950.

In addition to the building nearing end-of-life, there are capacity and other challenges with the space, including:

- The building does not meet accessibility requirements for corridors and washrooms;
- There are no change rooms for the crew;
- There is no meeting room space, so meetings must take place in the kitchen, which poses challenges for presenting and for people accessing water, coffee and food;
- The crew rooms are too small to accommodate all crew team members at once; thus, crew members are "split" up into different areas for collaboration;

- There is no space available for general training due to limited space in the office and bays;
- All workspaces are occupied so there is no capacity for growth;
- There is insufficient material storage capacity; and
- There is no room for a welding bay.

FEI has completed an assessment of the Trail Operations Centre to determine the required size of the replacement property and has developed a project plan. The required size of the building is determined by itemizing the needed base building and common rooms, individual workspaces (based on current and future headcount identified by the departments) and by calculating by the predetermined space standards that are aligned with industry standards. Warehousing and truck bay sizes have been developed by measuring linear storage and vehicle size.

Based on FEI's assessment, the current property size is too small to re-build. Accordingly, FEI plans to relocate and construct a new facility. The project is expected to be completed over three years, from 2024 through 2026, and the forecast cost is approximately $13 million. FEI forecasts capital expenditures of $1.6 million in 2024, $7.5 million in 2025, and $3.9 million 2026. FEI will seek BCUC approval to dispose of the existing site once the project is complete.

Heated Storage Building for Pipeline Operations

FEI's Pipeline Operations department is in the process of replacing high pressure equipment to double block and bleed (i.e., blocking flow on the upstream and downstream sides so that bleeding can occur between them). Previously, the single block equipment had a much smaller footprint for storage. As the high-pressure equipment needs to be stored inside in a heated space to ensure no rusting as it is used on transmission pipelines, a new heated storage bay needs to be added in the Kootenay area. This project is estimated at $2.7 million, with $2 million forecast to be incurred in 2025 and $0.7 million in 2026.

Maintenance of Existing Facilities

FEI needs to maintain its existing facilities. Over the next decade, FEI's buildings and building equipment are entering a large capital replacement cycle due to their age. To sustain aging assets, FEI needs to increase its Facilities capital renewal project expenditures, ultimately impacting the upcoming three-year period.

FEI forecasts approximately $2.7 million in 2025 and 2026 and $3.5 million in 2027 for building equipment, including conveying (elevators, cranes), HVAC and fire protection, as well as roofing and paving. A plan has been developed to systematically replace targeted assets over a three-year period, prioritizing asset condition and criticality. With this proactive approach, FEI can better distribute expenditures over the three-year Rate Framework term without compromising critical downtime.

3.3.3.3 Information Systems

FEI's IS expenditures focus on sustaining, enhancing, replacing, and upgrading existing applications and infrastructure or, as needed, introducing new technology capabilities in order to improve safety, customer service, reliability and efficiency.

Table C3-22 below summarizes the actual and projected IS capital expenditures from 2020 to 2024.

Table C3-22: FEI Actual and Projected IS Capital Expenditures 2020-2024 ($000s)[100]

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
IS Sustainment	14,756	14,207	13,864	16,981	14,735
Application Enhancements	2,080	1,488	1,343	957	2,200
Business Technology Applications	7,381	8,379	9,268	5,443	6,900
Total Information Systems	**24,217**	**24,074**	**24,475**	**23,381**	**23,835**

Table C3-23 below provides the 2025-2027 Forecast IS capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-23: FEI Approved and Forecast IS Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
IS Sustainment	10,808	10,913	14,800	15,200	15,800
Application Enhancements	2,850	2,850	2,000	2,100	2,200
Business Technology Applications	10,800	10,800	8,500	8,500	8,500
Total Information Systems	**24,458**	**24,563**	**25,300**	**25,800**	**26,500**

Overall, on average, FEI's actual/projected IS capital spending has been consistent with the approved amounts during the Current MRP term. While the overall spending has been consistent with approved, spending at the individual category level varies from year to year. This is because FEI manages the IS capital portfolio as a whole, with variations in spending amongst the categories due to a degree of overlap in the business drivers for each of the categories and annual prioritization of requests for IS capital work.

For the term of the Rate Framework, FEI is forecasting a level of IS Sustainment capital that is consistent with the level of capital spending that FEI actually incurred in 2023 and projects to incur in 2024. Although the 2025-2027 Forecast IS Sustainment capital expenditures are higher than the 2023 and 2024 Approved amounts, this is partially offset by decreases in Application

[100] Cybersecurity was included within IS Capital Expenditures in the Current MRP; however, it is now included in a new portfolio called Corporate Security, as discussed in Section C3.3.3.4 below. As such, capital expenditures related to cybersecurity are not included in Tables C3-22 and C3-23.

Enhancements and Business Technology Applications compared to the 2023 and 2024 Approved amounts.

The changes in each category are described in the subsections below.

3.3.3.3.1 INFORMATION SYSTEMS SUSTAINMENT

IS Sustainment capital includes infrastructure sustainment, end-user device sustainment, and application sustainment:

- **Infrastructure sustainment:** the capital funding required to replace or upgrade outdated or end-of-life hardware and server software in the data centres. This includes, among other things, servers, operating systems, local area network (LAN) and wide area network (WAN) equipment.
- **End-user device sustainment:** the capital funding required to replace or upgrade end user equipment and software. This includes, among other things, PCs, operating systems, desktop applications, printing equipment and all mobile devices.
- **Application sustainment:** the capital funding required to sustain existing software applications. This includes required upgrades to maintain support, reliability, and performance of existing applications.

As shown in Tables C3-22 and C3-23 above, IS Sustainment capital is the largest area of IS capital spending. Actual IS Sustainment capital spending was higher than the approved amounts during the Current MRP term due to the addition of sustainment costs to support new business tools and devices (e.g., connecting internal systems and data to mobile field users). FEI expects that the IS Sustainment capital spending during the 2025-2027 term of the Rate Framework will be similar to the levels of actual spending experienced during the Current MRP term.

3.3.3.3.2 APPLICATION ENHANCEMENTS

Application Enhancements capital funding is used to modify the functionality or enable capabilities of existing applications to meet annual business requirements.

While actual spending on Application Enhancements can fluctuate from year-to-year based on higher/lower business requests for enhancements to current systems, this category of IS capital spending has been relatively consistent (and small relative to FEI's overall IS Capital expenditures) during the term of the Current MRP.

FEI has slightly reduced the 2025-2027 Forecast expenditures for Application Enhancements compared to the 2023 and 2024 Approved amounts. Overall, the forecasts for the Rate Framework term are generally consistent with the Current MRP term.

3.3.3.3.3 BUSINESS TECHNOLOGY APPLICATIONS

Business Technology Applications (Transform) include capital funding for initiatives that impact the way business is conducted and that support business unit priorities. This includes the

introduction of new technologies to meet business requirements, system integration that changes business processes and/or the introduction of new business processes, and harmonization of systems that benefit both FEI and FBC. The prioritization and selection of projects for each year are completed by the Fall of the previous year. This process is designed to ensure that projects with higher value will be considered first when allocating finite resources. In addition, the rapid pace of technology changes necessitates more frequent replacement of systems due to obsolescence, loss of technical support and maintenance, risk of cyber threats, or to leverage the benefits of new functionality.

FEI has reduced its 2025-2027 Forecast expenditures compared to the 2023 and 2024 Approved levels to reflect the actual/projected spending levels during the Current MRP term.

3.3.3.4 Corporate Security

Expenditures related to Corporate Security have historically been split between Sustainment capital and Other capital. In the Current MRP, Cybersecurity was included as a category within IS capital, and Physical Security was included within Sustainment capital. Starting in 2025, FEI is now tracking these costs as a new portfolio in Other capital and has included the historical actuals in Table C3-24 for reference.

Table C3-24: FEI Actual and Projected Corporate Security Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Corporate Security	3,829	3,700	3,868	3,917	3,770

Table C3-25 below provides the 2025-2027 Forecast capital expenditures for Corporate Security as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-25: FEI Approved and Forecast Corporate Security Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Corporate Security	3,100	3,100	8,887	7,720	7,741

As shown in Table C3-25 above, FEI is forecasting a large increase in Corporate Security capital expenditures during the Rate Framework term.

As companies respond to the ever changing cyber and physical security threat landscape due to elements such as state sponsored groups, special interest hacktivists and commercially available hacking tools, additional spending is required to enhance FortisBC's Corporate Security risk management programs. These programs are based on a responsive model that adapts to an evolving threat landscape.

Starting in 2025, FEI is forecasting an increase in capital costs for its patch management program of $3.589 million (please refer to Section C2.2.4.4.2 for a discussion of the O&M component of the patch management program). In recent years, FEI has increased expenditures for patching to respond to evolving security risks and to reduce the threat landscape and vulnerabilities. Increased sophistication in attacker techniques has forced hardware and software companies to release updated code and operating system patches on a more frequent basis to counteract these threats and vulnerabilities. The increased frequency of these vendor released updates requires FEI to increase the cadence of the patch review and installation. In many cases, required patching will increase from quarterly to monthly, essentially quadrupling the patching workload for those systems. Additionally, the patching program must increase scope to include all critical and non-critical applications. This prevents attackers from exploiting known flaws in software or devices which could potentially lead to compromised system reliability, including data integrity, confidentiality, or availability.

Additionally, FEI is continuing to strengthen the physical protection of its facilities by enhancing its ability to implement and maintain technologies and strategies that manage the threat landscape. This includes improving the physical security of its operations centres and updating its aging camera infrastructure to address end of life/end of support technology for its video management systems. This work is required to address identified cybersecurity vulnerabilities in legacy systems, as well as camera performance issues pertaining to outdated versions and hardware across many locations, which impacts site monitoring and response at these locations.

British Columbia has been experiencing increases in the frequency and severity of emergencies and disaster events which have significant impacts and durations that exceed those of previous years, and it is expected that this trend will continue. FEI requires the ability to establish incident command support bases to serve areas where facilities and infrastructure do not exist, or where space to respond to emergencies is an issue. To address this, in 2025, two mobile incident command units will be purchased and strategically positioned in areas where they can be easily deployed to support an event(s). These mobile command units operate as a central office, equipped with a range of communications technology, including satellite, cellular and Wi-Fi connections to ensure connectivity. The mobile command units are typically used as a central hub for communication between teams of emergency responders to manage on-site emergencies. Responding quickly to situations while also keeping communications flowing is critical whenever public safety, the safety of employees, and restoration of services to customers are at stake, and especially in rapidly changing emergencies. Mobile command centres support more timely and effective response to emergencies by being located as close to the event as safely possible.

3.3.4 FEI Regular Flow-through Capital Expenditures

Flow-through capital expenditures are Regular capital expenditures that are forecast each year in the Annual Reviews, with variances captured in the Flow-through deferral account. FEI is approved to treat certain capital items as flow-through due to a variety of factors, including their

uncontrollable nature or uncertainty in scope, costs, and timing. FEI is also approved to treat capital expenditures related to Clean Growth Initiatives as flow-through.

For the Rate Framework, FEI will continue to forecast Regular flow-through capital for both its Pension/OPEB (Growth capital portion) and Clean Growth Initiatives. Currently, FEI includes Biomethane capital and NGT capital under its Clean Growth Initiatives. Over the term of the Rate Framework, FEI also anticipates bringing forward costs related to Methane Emission Mitigation under the same category, and will provide further discussion and forecasts in its upcoming Annual Reviews. Methane Emission Mitigation is discussed further below.

3.3.4.1 Methane Emission Mitigation

Consistent with FEI's other Clean Growth Initiatives, investments in Methane Emission Mitigation reduces greenhouse gas emissions. Methane emissions are a key point of focus for the provincial and federal government, and additional regulations will continue to be considered to further reduce climate change impacts related to methane emissions. For example, in October 2021, the federal government confirmed support for the Global Methane Pledge, which aims to reduce global methane emissions by 30 percent below 2020 levels by 2030 and 75 percent below 2012 levels by 2030.[101] In December 2023, the federal government issued an amendment to increase the stringency of regulations to ensure these reduction goals can be met.[102]

The Province has developed its own methane regulations and has signed an equivalency agreement with the federal government that extends to 2025;[103] however, further review is underway by the BCER, and updates to regulations may be implemented to ensure targets are being met.

The timing and scope of new federal or provincial regulations is uncertain; therefore, FEI is not able to properly forecast capital expenditures at this time. FEI accordingly anticipates that it will be seeking flow-through treatment for capital expenditures related to Methane Emission Mitigation at some point during the Rate Framework term. Although no expenditures have been identified, further review and project development related to measurement of emissions at FEI's station assets is expected to start in 2025. When specific expenditures are identified, they will be brought forward in FEI's Annual Reviews.

3.3.5 FEI Regular Capital Summary

Based on FEI's system requirements and industry drivers, FEI is forecasting decreased levels of Regular capital spending over the term of the Rate Framework relative to recent actual and projected expenditures.

[101] https://www.canada.ca/en/environment-climate-change/news/2021/10/canada-confirms-its-support-for-the-global-methane-pledge-and-announces-ambitious-domestic-actions-to-slash-methane-emissions.html.
[102] https://www.gazette.gc.ca/rp-pr/p1/2023/2023-12-16/html/reg3-eng.html.
[103] https://www.bc-er.ca/news-publications/trending-topics/methane-emissions/#:~:text=New%20methane%20regulations%20came%20into,off%20the%20road%20each%20year.

FEI proposes to continue with a unit cost approach to Growth capital expenditures with a revised methodology for setting the initial unit cost, taking into account recent trends in the costs to attach new customers. FEI's Growth capital is expected to decrease relative to recent actual and projected expenditures as customer attachments decrease.

FEI will realize a large reduction in the Customer Measurement portfolio starting in 2025 due to the deployment of the AMI project. Despite this reduction, overall spending on Sustainment capital is forecast to remain at a similar level to that approved for 2023 and 2024. This is because the reduction in Customer Measurement spending is offset by increased spending on pipeline alterations due to the need to address an increased number of regulatory compliance-driven, class location upgrades, as well as an increase in pipeline inspection costs to reflect the recently approved ability to conduct in line inspections using EMAT tools.

Other capital is forecast to increase as Equipment and Facilities are entering a large capital replacement cycle due to their age. FEI is also proposing increased investment in corporate security, including increased expenditures in patch management, given the need to address the risk environment.

Finally, FEI proposes to continue its flow-through treatment for Regular capital related to Pension/OPEB (Growth capital portion) and Clean Growth Initiatives, which includes future expenditures in Methane Emission Mitigation to align with policy directives.

3.3.6 FEI Major Capital Projects

Major Projects are capital expenditures that do not form part of Regular capital spending as they are approved through a CPCN or other application. In the MRP Decision, the BCUC determined that FEI's CPCN threshold for the Current MRP term would be $15 million.[104] FEI proposes to maintain the currently approved CPCN threshold of $15 million for the Rate Framework term.

The following are examples of the Major Project applications that may arise during the course of the Rate Framework term:

- FortisBC Enterprise Resource Planning (ERP) Modernization and Electric Customer Information System (CIS+) Replacement
- FEI Surrey Operations Centre Skytrain Impact Mitigation
- FEI Vancouver Island Subsea Pipeline Integrity Mitigation
- FEI Pennyfarthing Dr – 323 DPST Trespass
- FEI Lower Mainland Stores and Muster Replacement
- FEI Sun Peaks Acquisition

Each of these projects is described in more detail below.

[104] MRP Decision, p. 133.

FortisBC ERP Modernization and Electric CIS+ Replacement

Forecast Implementation Timeline: *2025 to 2027*

SAP was initially installed in 1998 and is the ERP system used extensively across FortisBC. FortisBC has been informed that SAP will no longer provide support for the current platform beyond 2027 and, as such, the ERP Modernization project will transition the existing FortisBC system to the new SAP S/4 HANA version. Additionally, FBC will be replacing CIS+, which is a system deployed in 1999 that FBC uses to house the meter to cash process and information for all electric customers. At nearly 25 years old, this system is no longer supported by the software manufacturer and requires ongoing customized support to ensure the continued accuracy and security of customer billing information. FBC intends to align the customer billing system with FEI's system. As such, FBC will be seeking to replace the current CIS+ system with SAP S/4 HANA at the same time as FortisBC transitions to SAP S/4 HANA.

In summary, the ERP Modernization and Electric CIS+ Replacement scope is to upgrade to a newer, more advanced version of the current ERP system used by both FEI and FBC, and to replace the current FBC CIS+. Costs for the project will be allocated between FEI and FBC. Further discussion on the project and the cost allocation will be provided in the upcoming application.

FEI Surrey Operations Centre Skytrain Impact Mitigation

Forecast Implementation Timeline: *2026 to 2028*

The Surrey Skytrain Expo Line extension from the existing King George station to the City of Langley will run along Fraser Highway in Surrey and pass through FEI's Surrey Operations Centre. Construction is expected to commence in 2026 with the extension in-service by 2028.

FEI has been informed that the Skytrain guideway rail will enter FEI's Surrey Operations lot from the southwest corner to the east side, passing closely by the Surrey Operations building. The closest point from the guideway rail to the building is approximately 5 metres (15 feet). This new above ground rail is expected to negatively impact FEI's Surrey Operations, both during and post construction and operation. The impacts include:

- Increased noise from the current reading of 65 decibels to 95 decibels;
- Loss of landscaping;
- Loss of parking; and
- Security impacts that come with Skytrain corridors.

FEI has engaged multiple Subject Matter Experts (SME) to complete a vulnerability assessment. The findings from the assessment as well as the estimated costs to remedy the expected negative impacts are intended to help inform and assist in negotiation with TransLink for cost recovery. While FEI anticipates that capital costs to address the above-noted issues will exceed its CPCN

threshold, FEI is only at the early stages of this process and the capital expenditures and potential recoveries from TransLink required for the remediation are uncertain at this time.

FEI Vancouver Island Subsea Pipeline Integrity Mitigation

Forecast Construction Timeline: *2027-2032*

In 2019, the Vancouver Island Transmission System (VITS) marine pipeline network underwent a routinely scheduled inspection by a remotely operated vehicle (ROV). Analysis of the ROV results and subsequent analysis has indicated a non-emergency integrity issue warranting mitigation, related to a failed pipe support (known as a span corrector). This lack of support can result in increased pipe movement in the water and an increased potential for fatigue failure. FEI is currently working to refine its analysis, including further data collection, to better define the priority and urgency of mitigation and to develop an optimized mitigation scope. Due to expected high mobilization costs of specialized resources to perform marine crossing construction activities, FEI expects that the cost of any mitigation scope will exceed the current CPCN threshold of $15 million.

FEI Pennyfarthing Dr – 323 DPST Trespass

Forecast Construction Timeline: *2025-2027*

Approximately 425 m of 323 mm distribution pipeline main on Pennyfarthing Drive in Vancouver, located on the Kitsilano Indian Reserve No. 6 land, is currently in trespass. This main is a major feed providing natural gas from the 6th and Quebec Station across the Burrard Street Bridge and into the downtown Vancouver core. Squamish First Nation and its partners are constructing a phased residential and commercial project known as Seȟáḵw (the Development) on the lands. Squamish Nation has requested FEI to relocate the gas main off of their land to make room for the Development. FEI and Squamish Nation are investigating three routing options for the gas main relocation, which are expected to be finalized in mid 2024. FEI will then work with Squamish Nation to select an option and negotiate an agreement for the relocation of the pipeline.

FEI Lower Mainland Stores and Muster Replacement

Forecast Implementation Timeline: *2026 to 2029*

FEI is investigating the relocation of the Lower Mainland Stores building, currently located in Burnaby, to the Fraser Valley area, as well as the replacement of five field musters. All of these buildings support field operation functions, and they are nearing end-of-life.

FEI Sun Peaks Acquisition

Forecast Timeline: *2025-2028*

FEI is considering acquiring the Sun Peaks propane distribution system and the propane storage and vaporization plant which supplies the distribution system. FEI is currently undertaking due diligence activities to inform the acquisition decision.

3.4 *FBC CAPITAL EXPENDITURES*

Table C3-26 below provides FBC's gross capital expenditures (before CIAC) for the term of the Current MRP. The 2020 through 2023 expenditures are actual; the 2024 expenditures are projected.

Table C3-26: FBC Actual and Projected Regular Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Growth Capital	28,799	21,865	30,013	28,445	26,076
Sustainment Capital	47,325	49,601	41,632	48,590	51,653
Other Capital	16,036	15,349	16,921	18,139	18,748
Total Regular Capital (Gross)	**92,160**	**86,815**	**88,565**	**95,174**	**96,477**

As discussed during the Annual Review for 2023 Rates, FBC has experienced pressures during the Current MRP term due to a variety of external factors, including the COVID-19 pandemic, supply chain issues, significant inflationary increases, and the war in Ukraine, among others.

The drivers of the increases in the Growth and Sustainment capital portfolios discussed in the Annual Review for 2023 Rates are summarized as follows:

- Significant inflationary increases brought on by unanticipated events such as the COVID-19 pandemic and the war in Ukraine, which have resulted in large cost escalations in materials, labour and fuel;
- Increased cost and complexity in permitting and land acquisition;
- Increased growth; and
- Additional reliability and safety projects being required that were not anticipated at the time that the 2020-2024 MRP Application was developed.

FBC successfully implemented a number of mitigation strategies to limit the impact of cost pressures, thus allowing FBC to manage the overall cost increases. These mitigation strategies included:

- Reprioritizing projects, or components of a project that could be safely re-scheduled to accommodate other project cost increases that could not be deferred. While FBC has delayed some work with flexible timing to accommodate the increased capital demands, this has only mitigated part of the capital pressures due to the magnitude of market and other pressures;

- Entering into long-term supply contracts for many commonly used materials and service providers (e.g., engineering consultants and construction contractors); and
- Optimally allocating construction work to internal or external construction crews as appropriate.

Despite the mitigation strategies listed above, due to the magnitude of the overall inflationary pressure experienced by the North American electric utility industry, FBC was not able to fully mitigate the cost increases.

In this Application, FBC is seeking approval of the level of Regular Growth, Sustainment and Other capital expenditures to be incorporated in rates over the years 2025 to 2027. The requested levels incorporate the inflationary impacts discussed above.

Table C3-27 below summarizes the 2023 and 2024 Approved and the 2025-2027 Forecast Regular gross capital expenditures for FBC.

Table C3-27: FBC Approved and Forecast Regular Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Growth Capital	30,072	24,568	41,349	45,035	46,357
Sustainment Capital	44,710	51,652	75,664	72,116	71,310
Other Capital	17,658	17,213	25,070	24,922	22,699
Total Regular Capital (Gross)	**92,440**	**93,434**	**142,082**	**142,074**	**140,365**

As explained in Section B1.6.3, with the increased provincial focus on electrification, the entirety of FBC's system, from generation to local distribution infrastructure and the necessary support systems, requires investment to address both the ability to accommodate load growth (through Growth capital expenditures), and the ability of the existing infrastructure to support current and increasing levels of demand.

FBC is forecasting increases in Growth, Sustainment and Other capital expenditures for each year of the Rate Framework term. The annual increases are due to the following key drivers:

- Increased requirements for system improvements to the Transmission and Distribution systems to accommodate load growth;
- Upgrades to aging assets, particularly Generation and Stations assets, to meet current codes and standards, to address the condition and age of infrastructure, and to improve reliability; and
- Increased spending in Corporate Security to respond to the evolving threat landscape as well as the frequency and severity of emergencies and disaster events.

As discussed in Section C2.3.4.5.1, FBC is seeking incremental O&M funding to increase its engineering and support staff to execute on the higher number of projects.

The Regular capital expenditures are discussed below in terms of Growth (Section C3.4.1), Sustainment (Section C3.4.2), and Other capital (Section C3.4.3), with explanation provided for any project that is forecast to exceed $1 million. The Regular Flow-through capital categories are also discussed in Section C3.4.4, and FBC's anticipated Major Projects are discussed in Section C3.4.6.

3.4.1 FBC Growth Capital

FBC's Growth capital expenditures include transmission and distribution system improvements required to meet incremental customer and load growth, in addition to the cost of connecting new customers to the system.

Table C3-28 below summarizes the actual Growth capital expenditures from 2020-2023 and the projected 2024 expenditures.

Table C3-28: FBC Actual and Projected Growth Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Transmission	7,109	744	5,587	3,838	2,977
Distribution	1,926	1,965	2,814	1,353	1,664
New Connects	19,764	19,156	21,613	23,253	21,436
Total Growth (Gross)	**28,799**	**21,865**	**30,013**	**28,445**	**26,076**
CIAC (New Connect)	(6,301)	(7,600)	(7,348)	(8,169)	(6,925)
Total Growth (Net)	**22,499**	**14,265**	**22,665**	**20,276**	**19,151**

Table C3-29 below summarizes FBC's forecast Growth capital expenditures required over the 2025 to 2027 Rate Framework term, along with the 2023 and 2024 Approved amounts for comparison.

Table C3-29: FBC Approved and Forecast Growth Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Transmission	6,223	1,088	16,418	19,323	20,149
Distribution	1,899	1,716	1,775	1,747	1,814
New Connects	21,951	21,764	23,156	23,965	24,395
Total Growth (Gross)	**30,072**	**24,568**	**41,349**	**45,035**	**46,357**
CIAC (New Connect)	(10,218)	(6,925)	(8,085)	(8,364)	(8,485)
Total Growth (Net)	**19,854**	**17,643**	**33,264**	**36,671**	**37,871**

FBC describes the forecast capital expenditures for each of the categories shown in the table above in more detail in the following sections, along with a description of projects forecast to exceed $1 million that are expected to proceed within the 2025 to 2027 Rate Framework term.

3.4.1.1 Transmission Growth Capital

Transmission Growth capital consists of discrete projects that are determined by transmission system capacity requirements, based on forecast load, for adequate supply during periods of peak demand and adverse weather conditions.

FBC is forecasting an increase in Transmission Growth capital expenditures over the Rate Framework term. To continue providing reliable supply to its customers, FBC is planning to reconductor four transmission lines and to upgrade or rebuild seven stations to accommodate load growth, the energy transition, and increasing electrical loads. In particular, several of the Transmission Growth projects are required to address the resulting increase in demand in the City of Kelowna, which is one of the fastest growing cities in Canada.

Table C3-30 below provides the Transmission Growth capital projects planned to be undertaken during the term of the Rate Framework.

Table C3-30: FBC Forecast Transmission Growth Capital Projects 2025-2027 ($000s)

Project	2025 Forecast	2026 Forecast	2027 Forecast
Reconductor 52L & 53L	3,067	3,000	-
Glenmore Low Voltage Bus Capacity and Equipment Upgrades	1,421	174	-
Duck Lake Second Distribution Transformer Addition	4,683	681	-
Christina Lake Station Upgrade	1,567	3,962	2,322
Saucier Second Distribution Transformer Addition	5,269	7,294	2,757
DG Bell Second Distribution Transformer Addition	411	2,724	7,511
Princeton 138 kV Capacitor Bank Addition	-	414	1,766
Reconductor 51L & 60L	-	1,075	5,000
Glenmore Station Capacity Upgrade	-	-	791
Total Transmission Growth	**16,418**	**19,323**	**20,149**

Projects over $1 million that are planned to be undertaken over the 2025-2027 timeframe are described as follows:

- **Reconductor 52L & 53L:** This project is required to provide a reliable transmission supply to the Penticton and Oliver regions. An outage of the 63 kV transmission lines 52L or 53L will cause the remaining line to become overloaded beyond its emergency rating when the Penticton area summer peak load is approximately 135 MW, which is forecast to occur during the Rate Framework term. To provide adequate capacity during this N-1 event and allow for future load growth in the Penticton and Oliver regions, this project will reconductor the 52L and 53L transmission lines to a higher ampacity conductor. FBC plans to commence work on this project in 2024, with the majority of expenditures forecast to be incurred in 2025 and 2026. The estimated total cost of this project is $6.6 million.

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- **Glenmore Low Voltage Bus Capacity and Equipment Upgrades:** This project is required to accommodate load growth in central Kelowna. Although the Glenmore Transformer T3 (GLE T3) has a nameplate rating of 40 MVA, its capacity is currently being restricted to approximately 32 MVA due to the low voltage (LV) cross bus 1200 A rating. The most recent load forecast indicates GLE T3 summer peak load will exceed the 32 MVA limit during the Rate Framework term. This project involves upgrading the LV cross bus and bus tie switches to a minimum of 2000 A. FBC plans to commence work on this project in 2024, with the majority of expenditures forecast to be incurred in 2025. The estimated total cost of this project is $1.8 million.

- **Duck Lake Second Distribution Transformer Addition:** This project is required to provide a reliable supply to the southern area of Lake Country. FBC's planning criteria are not currently met during a Duck Lake Transformer T1 (DUC T1) outage. This project will install a second transformer at the Duck Lack substation. FBC identified this project in the Annual Review for 2023 Rates. At that time, FBC forecast that $1.1 million would be spent in 2024 and that the forecast total project cost of approximately $5.3 million could increase due to material cost escalation. FBC still intends to commence this project in 2024, but the project cost has increased due to the cost escalation of materials, resulting in an updated total forecast project cost of $6.5 million.

- **Christina Lake Station Upgrade**: This project is required to accommodate load growth and to address aging infrastructure and equipment condition issues to provide a reliable supply to the Christina Lake area. The most recent load forecast indicates the Christina Lake Transformer T1 (CHR T1) summer peak load will exceed its 5 MVA nameplate rating during the Rate Framework term. CHR T1 was manufactured in 1975 and is now 49 years old. The unit has advanced aging of its paper insulation, and a cooling issue which may lead to overheating. The station voltage regulators and capacitor bank switch are also aging and have equipment condition issues. Given the growth and condition issues at the existing CHR substation, this project will rebuild the CHR substation. The existing CHR substation property may be too small to accommodate the rebuild, and FBC may need to acquire land to either expand or relocate the substation. FBC plans to commence work on this project in 2024. The estimated total cost of this project is $8.2 million, with costs forecast to be incurred from 2024 to 2027.

- **Saucier Second Distribution Transformer Addition:** This project is required to accommodate load growth and provide a reliable supply in the downtown area of Kelowna. The Saucier (SAU) substation capacity is currently restricted to approximately 26 MVA due to the 1200 A rating of the SAU LV main bus, Saucier Transformer T1 (SAU T1) main breaker, and the metal-clad switchgear. The most recent load forecast indicates SAU T1 will exceed the 26 MVA limit during the Rate Framework term. To increase station capacity, this project will install a second transformer at the SAU substation and replace the metal-clad switchgear, LV main bus, and the transformer main circuit breakers with a minimum 3000 A rating. This project also involves replacing the high voltage circuit breakers and switches, a building expansion to house the new gas-insulated switchgear, and distribution line upgrades. FBC plans to commence work on this project in 2024. The

estimated total cost of this project is $15.9 million, with expenditures forecast to be incurred from 2024 to 2027.

- **DG Bell Second Distribution Transformer Addition**: This project is required to accommodate load growth and provide a reliable supply to the Upper Mission area of Kelowna. During a DG Bell Transformer T1 (DGB T1) outage, the most recent load forecast indicates FBC planning criteria will not be met during the Rate Framework term. This project will install a second transformer at the DG Bell (DGB) distribution substation. This project also involves the addition of new circuit breakers and a voltage transformer on the high voltage side of the existing DGB T1, which will complete the 138 kV ring bus. Completing the ring bus will improve and simplify the protection scheme at the DGB terminal station and increase operational reliability in the Kelowna area. As FBC explained in the Annual Review for 2023 Rates, this project was deferred from the original 2024-2025 construction schedule to accommodate the Duck Lake Second Transformer Addition. The estimated total cost of the DG Bell Second Distribution Transformer Addition project is $11.4 million, with expenditures forecast to be incurred from 2025 to 2028.

- **Princeton 138 kV Capacitor Bank Addition:** An outage of the 230 kV 40L transmission line or Bentley Transformer T1 (BEN T1) results in low voltage near the Princeton area given forecast load levels during the Rate Framework term. To mitigate the low voltage, this project will install a minimum of 10 MVAR additional reactive compensation at the Princeton (PRI) substation to provide acceptable voltage during an N-1 event. The estimated total cost of this project is $2.2 million, with expenditures forecast to be incurred in 2026 and 2027.

- **Reconductor 51L & 60L:** This project is required to provide a reliable transmission supply to Kelowna and its surrounding area. In the event of an outage to one of the F.A. Lee (LEE) terminal substation transformers (LEE T2, LEE T3 or LEE T4), followed by an outage to another LEE transformer, the flow on the remaining LEE transformer exceeds the emergency rating. Re-configuring the Kelowna loop to reduce the post contingency transformer flow results in exceeding the emergency rating of the 138 kV transmission lines 51L and 60L based on forecast load levels during the Rate Framework term. To provide adequate capacity during this N-1-1 event and allow for future load growth in the Kelowna area, this project will reconductor 51L and 60L to a higher ampacity conductor. The estimated total cost of this project is $11.2 million, with expenditures forecast to be incurred from 2026 to 2028.

- **Glenmore Station Capacity Upgrade:** This project is required to accommodate load growth and provide a reliable supply to central Kelowna. The most recent load forecast indicates the Glenmore Transformer T2 (GLE T2) summer peak load will exceed its 31.5 MVA nameplate rating during the Rate Framework term. To increase station capacity, this project will replace GLE T2 with a new larger unit. The estimated total cost of this project is $8.0 million, with expenditures forecast to be incurred from 2027 to 2030. Project costs

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identified in 2027 are primarily for engineering and milestone payments for large equipment.

3.4.1.2 Distribution Growth Capital

Similar to its transmission system, FBC evaluates distribution system capacity on an annual basis based on the projected loads. Distribution Growth capital is broken down into two ongoing programs: Small Growth and Unplanned Growth. The forecast capital expenditures for these two programs are provided in Table C3-31.

Table C3-31: FBC Approved and Forecast Distribution Growth Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Small Growth Projects	1,122	1,130	1,085	1,140	1,137
Unplanned Growth Projects	777	586	690	607	676
Total Distribution Growth	**1,899**	**1,716**	**1,775**	**1,747**	**1,814**

Projects included under these ongoing programs include service upgrades, voltage regulation, ties to accommodate load splitting, single to three phase upgrades, and conductor upgrades that are necessary due to load growth. The Small Growth program consists of planned projects less than $0.5 million in size. The Unplanned Growth program consists of unforeseen projects typically less than $0.2 million in size. The forecast expenditures are based on historical expenditures. None of the planned projects under these programs are forecast to exceed $1 million.

3.4.1.3 Distribution New Connects

The New Connects category includes the installation of new electric services consisting of additions to FBC overhead and underground distribution facilities. These capital expenditures allow FBC to meet its obligation to provide reliable service to customers in its service area. This category also funds any costs associated with upgrading FBC facilities to provide service for an extension or drop service that are not recovered from customers under the terms of FBC's tariff. Consistent with past practice, the forecast expenditures for New Connects are based on historical expenditures adjusted for anomalous years and inflation. None of the planned projects are forecast to exceed $1 million.

3.4.2 FBC Sustainment Capital

The expenditures within Sustainment capital include system improvements to the generation, transmission, and distribution systems to maintain existing equipment to meet forecast load and for the safety, reliability, and integrity of the system. FBC also identifies and addresses hazards and risks that require immediate attention through specific projects.

Sustainment capital is further classified into five categories of expenditures. Table C3-32 below summarizes the actual expenditures from 2020 to 2023 and the projected 2024 expenditures.

Table C3-32: FBC Actual and Projected Sustainment Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Generation	5,884	6,949	6,432	7,941	7,225
Transmission Sustainment	12,506	10,667	8,097	9,158	12,800
Stations Sustainment	4,821	12,083	7,342	6,734	8,209
Distribution Sustainment	21,530	17,479	17,011	21,953	18,219
Telecommunications	2,584	2,423	2,750	2,804	5,199
Total Sustainment (Gross)	**47,325**	**49,601**	**41,632**	**48,590**	**51,653**
Sustainment CIAC	(391)	(689)	(1,150)	(596)	(614)
Total Sustainment (Net)	**46,934**	**48,912**	**40,482**	**47,994**	**51,039**

Table C3-33 below summarizes FBC's forecast Sustainment capital expenditures required over the 2025 to 2027 Rate Framework term, along with the 2023 and 2024 Approved amounts for comparison.

Table C3-33: FBC Approved and Forecast Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Generation	7,623	7,225	12,823	13,298	15,274
Transmission Sustainment	9,159	12,800	13,604	9,149	8,991
Stations Sustainment	6,841	8,209	20,486	23,627	24,783
Distribution Sustainment	17,480	18,219	22,446	19,014	18,291
Telecommunications	3,606	5,199	6,304	7,028	3,971
Total Sustainment (Gross)	**44,710**	**51,652**	**75,664**	**72,116**	**71,310**
Sustainment CIAC	(1,410)	(614)	(765)	(791)	(816)
Total Sustainment (Net)	**43,300**	**51,038**	**74,899**	**71,326**	**70,494**

The forecast capital expenditures for each of the categories shown in the table above are described in more detail in the following sections, along with a description of projects forecast to exceed $1 million that are expected to proceed within the 2025 to 2027 Rate Framework term.

3.4.2.1 Generation Sustainment Capital

FBC regularly monitors its infrastructure to ensure it meets industry standards and guidelines, complies with regulations, and operates safely to minimize risk to the public, environment, and employees.

FBC's generation facilities consist of 15 hydroelectric generating units in four plants located on the Kootenay River: (1) the Lower Bonnington Dam (LBO) which was constructed in 1897 and upgraded in 1924; (2) the Upper Bonnington Dam (UBO) which was constructed in 1907 and extended to incorporate an additional two units in 1940; (3) the South Slocan Dam (SLC) which was constructed in 1924; and the (4) Corra Linn Dam (COR) which was constructed in 1932.

Since their initial construction, these hydroelectric generating plants have undergone only three major refurbishments or replacements, including:

- the Upgrade and Life Extension (ULE) program, which focused on upgrading the generating units and was undertaken from 1998 through 2011;
- the UBO Old Units Refurbishment project which was completed in 2021; and
- the Corra Linn Spillway Gates Replacement project which is in the final close-out stages.

FBC conducts ongoing condition assessments, engineering analysis and dam safety reviews on Generation infrastructure and equipment. Based on these assessments, FBC has identified critical path items that need to be addressed during the Rate Framework term related to condition, structural capacity, operational requirements, and safety.

FBC's Generation Sustainment capital is grouped into four categories. Table C3-34 below provides the 2025-2027 Forecast capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-34: FBC Approved and Forecast Generation Capital Expenditures Forecast 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Hydraulic Dam Structures	2,248	2,510	6,661	8,531	3,230
Generating Equipment	2,497	1,358	1,759	1,643	7,581
Generation Auxiliary Equipment	2,069	1,087	796	996	2,137
Buildings and Structures	809	2,270	3,607	2,128	2,326
Total Generation	**7,623**	**7,225**	**12,823**	**13,298**	**15,274**

FBC is forecasting an increase in Generation Sustainment capital during the Rate Framework term, primarily in the categories of Hydraulic Dam Structures and Generating Equipment. As explained above, FBC must undertake necessary upgrades to equipment due to condition, obsolescence, and compliance with dam safety that have been identified in the Dam Safety Reviews. Each of the categories is discussed below, with further details provided for projects over $1 million.

3.4.2.1.1 HYDRAULIC DAM STRUCTURES

This category includes capital projects that are related to water flow control equipment, including concrete structures, gates and stop logs, superstructures, lifting equipment (hoists and gantries), and dam safety. The projects are addressing deficiencies to meet the regulatory requirements of the BC Dam Safety Regulation and WorkSafe BC, to protect the condition of critical dam safety equipment and to remediate the condition of aging infrastructure. FBC is planning to undertake a number of projects over $1 million in 2025 and 2026. Each project is described below.

LBO Concrete and Structural Rehabilitation Project

The FBC generation plants range in vintage from 92 to 117 years old. This project is a continuation of the program started in 2012 and involves the correction of deficiencies and degradation in concrete related to normal deterioration that has occurred over time.

A comprehensive third-party engineering inspection of the plants has identified locations that require repair of deteriorated concrete, including resurfacing of waterway structures such as spillway piers, forebay piers, forebay walls, spillway walls, and tailrace piers. The repairs are prioritized based on a deterioration ranking system. The dam safety reviews have identified the concrete condition as a deficiency which poses employee safety hazards and potential risks to the structural integrity of the dams. If not proactively addressed, the deterioration will continue to accelerate over time through exposure to environmental conditions, resulting in increased expenditures in future years to address the issues.

FBC plans to address the locations that require concrete rehabilitation at the LBO tailrace piers during the Rate Framework term. The forecast cost is $2.342 million.

COR Dam Safety Instrumentation Project

This project includes the installation of dam instrumentation systems. The project addresses the requirement in Section 19 of the BC Dam Safety Regulation for instrumentation to adequately monitor the dam and the area surrounding or adjacent to the dam. As explained in the FBC Annual Review for 2023 Rates (2023 Annual Review),[105] FBC has completed the installation of dam safety instrumentation at LBO, UBO and SLC, while the COR portion of the project was delayed. FBC will be undertaking the installation of dam safety monitoring equipment at COR in 2025, with forecast expenditures of $1.507 million.

COR Dam Safety Stability Anchors Upgrade Project

This project was included in the Other Hydraulic Dam Structures Projects category in the Current MRP and includes the upgrade of the corrosion protection system of all anchors and load testing of select post-tensioned dam stability anchors. FBC initially planned to complete this project between 2022 and 2025. However, in 2023, FBC upgraded the anchors in the west, middle, and east gravity dams at COR and, based on the learnings from that stage of the project, FBC updated the costs and the schedule for upgrading the remaining anchors located in the middle gravity dam piers, middle gravity dam ogee spillways and the east gravity dam log sluice. FBC is now planning to execute the project over four years in order to address construction complexities at the anchor locations. The forecast cost of the project is $2.817 million. FBC plans to complete the project in 2027.

[105] Appendix C2, p. 6.

LBO Spillway Gates Refurbishment Project

The LBO spillway gates were fabricated in 1963 and require refurbishment following engineering inspections for condition and suitability to current dam safety standards. The inspections identified that corrosion on the skin plates, girders, and lifting screws, among other items, require repair and/or re-coating. In addition, a structural analysis to current standards and Dam Safety Guidelines determined that localized areas are overstressed and require re-strengthening. The refurbishment of the first spillway gate to address these concerns was completed during the Current MRP term. The refurbishment of the second gate is planned for completion in 2027 with forecast expenditures of $3.421 million.

UBO Intake Superstructure Upgrade Project

This project includes the refurbishment and upgrade of the intake installed at UBO to address age-related condition issues, increase structural capacity to meet the BC Building Code, and minimize the risks to public and employee safety. An engineering review identified that the intake superstructure at UBO does not meet the safety factors required for the hoist, seismic, wind and other load combinations. To address this issue, the project will strengthen the UBO intake superstructure by reinforcing the angle columns and the bracing-to-column connections, replacing the diagonal braces, and partial recoating. FBC plans to complete this project in 2026, with forecast expenditures of $1.351 million.

3.4.2.1.2 GENERATING EQUIPMENT

The Generating Equipment category includes projects that are related to turbines, generators, governor systems, excitation systems, unit control systems, lubrication systems, cooling water systems and generator switchgear.

FBC is forecasting an increase in capital expenditures in 2027 as a result of a number of planned projects over $1 million. These projects are described below.

LBO Generator Excitation System and Control System Replacement Project

This project includes the replacement of three unit control systems, one plant control system, and the replacement of one of the generator excitation systems at LBO due to obsolescence. The forecast cost of the project is $1.171 million, with the majority of the expenditures forecast to occur in 2027. FBC plans to complete the project in 2028.

UBO Unit 6 Turbine Runner Replacement Project

This project will replace the UBO Unit 6 turbine runner that has reached the end of its service life. The runner is original and will be approximately 89 years old at its proposed date of replacement.

This project was identified in the 2023 Annual Review.[106] At that time, the estimated cost was approximately $4 million and the expected in-service date was December 2024. However, based on new information provided during the procurement process from the quotes received from qualified vendors, FBC discovered that the project cost would be higher than originally estimated. FBC then took steps to validate the updated cost estimate and schedule, and the project was accordingly delayed. FBC now plans to continue with the project in 2025, with expenditures of $1.719 million forecast to be incurred during the Rate Framework term. FBC plans to complete the project in 2029 and the estimated total cost is $6.076 million.

UBO U3 Distributor Upgrade Project

This project will replace the original 1907 distributor components on Unit 3 at UBO to allow unit stopping under water flow. Each unit at the UBO Old Plant has three turbines with a set of wicket gates and the only method of stopping a unit is by closing the three sets of wicket gates because the units do not have intake gates. The turbine distributor components are comprised of a turbine head cover, three sets of wicket gates, and many linkages, including rods, pins, bushings, and operating rings that transmit the mechanical force from the unit governor to the wicket gates of the three turbines. In 2013, the wicket gates were replaced and the turbine shafts and bearing journals were refurbished. The remaining distributor components were not refurbished at that time. Based on FBC's assessment of the distributor components in 2023, refurbishment is now necessary as their deteriorated condition does not allow the wicket gates to close properly and thus the unit can no longer be stopped reliably and safely. The forecast cost of this project is $5.043 million, with the majority of costs forecast to be incurred in 2027.

3.4.2.1.3 GENERATION AUXILIARY EQUIPMENT

The Generation Auxiliary Equipment category includes capital projects that are related to upgrades to station service systems, cranes, elevators, dewatering system, heating and cooling systems, compressed air systems, and communication, network, and security systems.

3.4.2.1.4 BUILDINGS AND STRUCTURES

The Buildings and Structures category includes capital projects that are related to the following Generation assets: buildings and building components (walls, doors, windows, roofs, etc.), heating and ventilation systems, fences, and access roads.

FBC is forecasting the following Buildings and Structures capital projects over $1 million over the 2025 to 2027 Rate Framework term.

COR Annex Building Replacement

The COR annex houses critical systems for the operation of the COR generation facility, including battery banks, control systems and fire protection. The existing building's structure has visible signs of structural cracking and movement. The primary cause of this deterioration is foundation

[106] Appendix C2, p. 7.

settlement of the structure, which is causing the annex building to pull away from the powerhouse. To prevent collapse, temporary lateral bracing has been supporting the structure since 2015.

A collapse of the COR Annex Building due to further foundation settling or a seismic event would affect the operation of the COR generating units by compromising the operation of the battery banks, the fire pump system, and the water treatment equipment, as well as creating safety risks for FBC personnel.

This project was discussed in the 2023 Annual Review.[107] At that time, FBC planned to complete the project in 2024 at an estimated cost of $1.880 million. However, through the engineering detailed design process, FBC determined that additional work was required to strengthen the foundation and that the plant sanitary water system needed to be upgraded to meet current environmental requirements. These changes in the overall project scope identified in the detailed design phase resulted in delays to the start of the project and an increase in costs. FBC has accordingly updated the costs and timing for this project. FBC started this project in 2022 and plans to complete it in 2025 at a total forecast cost of $4.228 million, of which $1.628 million is forecast for 2025.

COR Powerhouse Window Replacement Project

This project involves the replacement of deficient and broken windows at COR. FBC has previously completed the replacement and refurbishment of the LBO, SLC and UBO powerhouse windows. This project was originally contemplated to be undertaken during the Current MRP, but due to other priorities and cost pressures, FBC deferred the project. FBC plans to start this project in 2025 and complete it in 2028 for a total cost of $2.425 million. The forecast expenditures during the Rate Framework term are $1.792 million.

3.4.2.2 Transmission Sustainment Capital

Transmission Sustainment expenditures are required to proactively manage the condition and integrity of FBC's existing transmission line facilities, manage the safety risk to employees and the public, and maintain an acceptable level of service for customers. The forecast expenditures for this category are developed based on condition assessments.

Transmission Sustainment capital is further broken down into four programs. Table C3-35 below provides the 2025-2027 Forecast capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

[107] Appendix C2, p. 7.

Table C3-35: FBC Approved and Forecast Transmission Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Transmission Line Condition Assessment	1,058	681	1,485	1,112	1,623
Transmission Line Rehabilitation	6,519	10,447	10,269	6,250	6,263
Transmission Urgent Repairs	505	569	625	541	648
Transmission Rights of Way	1,077	1,103	1,226	1,246	456
Total Transmission Sustainment	**9,159**	**12,800**	**13,604**	**9,149**	**8,991**

3.4.2.2.1 TRANSMISSION LINE CONDITION ASSESSMENT

The Transmission Line Condition Assessment program is based on an eight-year cycle of inspecting and testing all FBC transmission line facilities. The program consists of a pole test and treat component and an above ground visual condition inspection. The test and treat component of the program is aimed at the section of pole at the ground level and below. The above ground visual inspection focuses on the condition of the pole itself and all equipment (anchoring, cross-arms, insulators, guying, telecommunications, apparatus, and grounding) attached to the pole. If an issue is detected during the condition assessment, the deficiency is documented and corrected under the following year's transmission line rehabilitation program. The program is managed on an eight-year cycle to levelize both the budget and the resources required. Expenditures vary from year to year based on the length of the lines and number of structures in each line.

3.4.2.2.2 TRANSMISSION LINE REHABILITATION

The specific rehabilitation projects for various transmission facilities involve expenditures for stubbing poles, grounding and bonding, insulators replacements, fibre or telecommunications replacements, replacing poles, cross-arms, guy wires, as well as correcting other defects identified in previous years' assessments. Specific planned expenditures for each transmission line are identified after completion of the condition assessment in the previous years.

FBC is planning to undertake the following two projects during the Rate Framework term that exceed $1 million.

27 Line Rehabilitation

This project includes expenditures for structural stabilization of the transmission line between the Corra Linn (COR) and Salmo (SAL) substations based on the 2023 condition assessment. This includes stubbing poles, structure replacement, replacing cross-arms including defected insulators, tightening hardware, and installing grounding and bonding. The estimated total cost of this project is $4.0 million with expenditures forecast to be incurred from 2024 to 2026.

32 Line Rehabilitation

This project includes expenditures for structural stabilization of the transmission line between the Crawford Bay (CRA) and the Lambert Terminal (AAL) substations based on the 2021

condition assessment, including stubbing poles and installing grounding and bonding. Additionally, the project involves structure replacement, including Transmission or Distribution framing of the structure, insulators and cross-arms and fixing the clearance violations. The estimated total cost of this project is $1.6 million with expenditures forecast to be incurred in 2026.

3.4.2.2.3 TRANSMISSION URGENT REPAIRS

The Transmission Urgent Repairs program is required to repair or replace components that are in poor condition and in danger of immediate failure on the transmission system due to weather, defective equipment, animal intrusions, vandalism, abnormal operating conditions, vehicle collisions, or other unexpected events or conditions that can cause outages or present risks and must be addressed in an expedient manner. FBC forecasts expenditures based on historical costs, with actual expenditures varying from year to year due to the severity and number of structure failures.

3.4.2.2.4 TRANSMISSION RIGHTS OF WAY

The Transmission Rights of Way program is required for acquiring rights of way and easements for existing transmission facilities that are in trespass on private property. Expenditures for this category will also address access issues with respect to existing rights of way. Many of the transmission lines when initially constructed did not have formal road access to sections of the right of way. Access is required for ongoing operation and maintenance of these lines.

3.4.2.3 Stations Sustainment Capital

Stations Sustainment capital expenditures are driven by a combination of time-based and condition-based scheduling. Currently, FBC employs a substation Computerized Maintenance Management System (CMMS) which tracks basic equipment data and condition information for FBC's substation assets and is used to assist in scheduling maintenance tasks. Increases in expenditures for the Rate Framework term are mainly due to larger discrete projects required to address transformer and/or equipment condition.

Stations Sustainment capital is further broken down into five categories. Table C3-36 below provides the 2025-2027 Forecast capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-36: FBC Approved and Forecast Stations Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Station Urgent Repairs	617	653	680	759	701
Station Assessment/Minor Planned Projects	1,196	1,059	1,454	1,498	1,549
Spare Parts	-	-	1,940	3,484	8,164
Station Sustainment Programs	4,485	3,796	7,354	6,743	6,859
Station Upgrade/Replacement Projects	543	2,701	9,060	11,143	7,509
Total Station Sustainment	**6,841**	**8,209**	**20,486**	**23,627**	**24,783**

FBC is forecasting increases in the Station Sustainment Programs and the Station/Upgrade Replacement Projects. Additionally, FBC has added a new category titled "Spare Parts". The descriptions of each category and the drivers of the increased expenditures are described below.

3.4.2.3.1 STATION URGENT REPAIRS

Station Urgent Repairs are required to address unexpected failures of in-service equipment. Factors that can result in component failures in substation systems include inclement weather, defective equipment, animal intrusions, and vandalism. These failures can cause outages, or present safety or equipment risks that must be addressed in an expedient manner to maintain safe and reliable service. FBC forecasts Station Urgent Repairs based on historical costs, with actual expenditures varying from year to year due to the severity and number of equipment failures.

3.4.2.3.2 STATION ASSESSMENT/MINOR PLANNED PROJECTS

This category involves ongoing condition assessments of FBC's 68 transmission and distribution substations for environmental, safety and reliability issues on a six-year cycle, and the completion of the required work identified from these assessments. This includes the entire substation system, including equipment such as transformers, breakers, and batteries. FBC plans and executes the work resulting from the condition assessments in subsequent years.

3.4.2.3.3 SPARE PARTS

Due to the increased pressure created by supply chain issues which began to materialize during the Current MRP term, and the resulting increased lead times for receiving necessary equipment, FBC is undertaking a new Spare Parts program commencing in 2025 to comply with Transmission System Planning Performance Requirements (TPL-001-4).

TPL-001-4 became effective in BC on July 1, 2020, and contains the following requirement:

> 2.1.5. When an entity's spare equipment strategy could result in the unavailability of major Transmission equipment that has a lead time of one year or more (such as a transformer), the impact of this possible unavailability on System performance shall be studied. The studies shall be performed for the P0, P1, and P2 categories identified in Table 1 with the conditions that the System is expected to experience during the possible unavailability of the long lead time equipment.

Where studies identify issues with the equipment being unavailable, spares need to be available within a year, or other system upgrades need to be planned to correct the issues.

FBC completed studies in 2019 to be compliant with the July 1, 2020, effective date to evaluate FBC spare equipment availability, supplier delivery times, and system impacts for equipment with delivery times longer than one year. FBC identified 500/230 kV, 250 MVA transformers as having a delivery time longer than one year and that a spare 500/230 kV, 250 MVA transformer would be needed to correct system issues in 2029. In 2019, all other equipment had a manufacturer

delivery time that was less than one year, which meant that no other spare equipment was needed to meet the TPL-001-4 requirements.

As manufacturer delivery and repair times were historically very short, FBC has previously been able to operate its system without in-stock transmission equipment spares with limited system or customer load risk. However, supply chain issues have resulted in current manufacturers' delivery times for high voltage equipment now significantly exceeding one year, and FBC does not have internal spares available. FBC has studied the impact of this potential unavailability on system performance and considers it unacceptable. As such, FBC requires additional spare equipment for TPL-001-4 compliance. The impact of increasing forecast load has also resulted in FBC now requiring the 500/230 kV, 250 MVA spare transformer within the Rate Framework term.

Given the current market constraints outlined above, and in order to comply with TPL-001-4 compliance requirements, FBC is planning to purchase the following equipment as spares during the Rate Framework term:

- 500/230 kV, 250 MVA transformer;
- 230/161/138/63 kV, 200 MVA transformer;
- 245 kV, 2000 A circuit breaker;
- 145 kV, 30 MVAR capacitor bank; and
- 145 kV, 2000 A Point-On-Wave (POW) circuit breaker.

3.4.2.3.4 STATION SUSTAINMENT PROGRAMS

This category includes all programs that fell under the previously titled "Station Equipment" and "Transformer Replacements" categories in the 2020-2024 MRP Application. FBC combined these programs under the title "Station Sustainment Programs" to better reflect the nature of this category of expenditures.

Station Sustainment Programs include new and existing programs required to replace or refurbish obsolete or aging equipment, maintain or improve reliability of the substations, and/or improve legacy designs. Specific planned expenditures for each substation are identified through the CMMS and condition assessments. Existing programs will continue to address refurbishment or replacement work related to power transformers, breakers, disconnect switches, metal-clad switchgear, ground grids, station oil containment, etc.

The forecast increase in expenditures during the Rate Framework term is the result of FBC implementing certain new programs which will support an all-inclusive approach to station condition assessment. The new programs will upgrade legacy distribution transformer high voltage protection, replace porcelain fused cut-outs at legacy stations, implement station security upgrades, and enhance station transformer monitoring.

3.4.2.3.5 STATION UPGRADE/REPLACEMENT PROJECTS

This category includes a number of discrete projects that involve the replacement of key substation equipment, such as power transformers and/or medium voltage switchgear. These projects generally have higher total project costs and may involve multiple years of design and construction. Replacement of this equipment often requires station expansions or upgrades to physical infrastructure to accommodate the new equipment, such as earthworks, foundations, structures, bus work, ground grids, oil containment, transformer sound/blast walls, and associated protection & control and ancillary equipment (lighting, monitoring, alarms, etc.).

To maintain adequate levels of reliability, FBC will replace transmission and distribution station transformers and/or associated equipment based on condition assessments, which consider asset health, reliability, age, risk of failure, loading, outdated load tap changers, and the impact to the FBC system.

Table C3-37 below provides the breakdown of the projects forecast during the Rate Framework term.

Table C3-37: FBC Approved and Forecast Station Upgrade/Replacement Projects Expenditures 2025-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Keremeos Transformer Replacement	543	2,701	940	1,954	176
Castlegar Switchgear Replacement	-	-	2,985	1,293	-
Grand Forks T1 Replacement and Equipment Upgrades	-	-	4,422	6,185	1,272
UBO T2 Replacement	-	-	712	-	-
UBO T4 Replacement	-	-	-	413	1,027
Kaleden Transformer Replacement	-	-	-	319	2,055
Blueberry Station Upgrade	-	-	-	980	2,979
Total Station Sustainment	**543**	**2,701**	**9,060**	**11,143**	**7,509**

All of these projects are forecast to cost over $1 million, with the exception of the UBO T2 Replacement, and are described below:

- **Keremeos Transformer Replacement**: This project is driven by equipment condition issues. The Keremeos Transformer T1 (KER T1) was manufactured in 1974. The KER T1 load tap changer (LTC) is not functioning and is deemed to have failed; as a result, the transformer has lost its ability to regulate voltage. Based on the resulting operational challenges to control customer voltage, the KER T1 transformer needs to be replaced. This project was identified in the Annual Review for 2023 Rates.[108] At that time, the project was expected to be undertaken in 2023 and 2024 at an estimated total cost of $3.2 million; however, the project was delayed due to longer lead times than anticipated for the power transformer. The estimated total cost of this project has decreased slightly due to a minor

[108] Appendix C2, p. 10.

scope change, with a new estimated cost of $3.1 million, and is scheduled to be substantially complete in 2026.

- **Castlegar Switchgear Replacement**: This project is driven by equipment condition issues and is necessary to continue to provide a reliable supply to the town of Castlegar and the surrounding area. A third-party condition assessment completed in 2021 found the metal-clad switchgear to be in very poor condition and recommended the switchgear be replaced. Accordingly, this project will replace the metal-clad switchgear with an air-insulated bus and outdoor vacuum breakers. This project will also require a new control building, and reconfiguration of the transmission and distribution infrastructure to accommodate the switchgear replacement. The estimated total cost of this project is $4.5 million, with expenditures forecast to be incurred from 2024 to 2026.

- **Grand Forks T1 Replacement and Equipment Upgrades:** This project will address aging infrastructure and equipment condition at the Grand Forks Terminal (GFT) station. The project will result in improved reliability and will mitigate environmental and safety risks. The GFT Transformer T1 (GFT T1) was manufactured in 1965. A third-party condition assessment report recommends replacing GFT T1 by 2026. All GFT high voltage and remaining low voltage minimum oil-filled circuit breakers also need to be replaced along with their associated isolation switches which are now obsolete. To improve and simplify protection and operation of the station, a 63 kV ring bus will be installed by modifying the existing 63 kV breaker configuration, which will result in one less breaker required. All other upgrade work aims to mitigate maintenance or protection issues, as well as address equipment condition. The estimated cost of the project is $13.3 million, with expenditures occurring from 2024 to 2027.

- **UBO T4 Replacement**: This project is driven by equipment condition and capacity issues. The Upper Bonnington Transformer T4 (UBO T4) is a Generating Step-up Unit (GSU) that exports generation from the UBO G4 generator. UBO T4, which was manufactured in 1965, is undersized and its condition is deteriorating. An internal FBC condition assessment of UBO T4 was completed in 2023, which found the unit requires replacement in the next two to three years. The estimated total cost of this project is $1.5 million, with expenditures forecast to be incurred from 2026 to 2027.

- **Kaleden Transformer Replacement:** This project is driven by equipment condition issues and aging infrastructure. The project is necessary to continue supplying reliable electricity to Kaleden and will also increase the capacity of the substation. The Kaleden Transformer T1 (KAL T1) was manufactured in 1959. KAL T1 is equipped with a discontinued LTC that is no longer supported by the manufacturer. FBC has experienced previous failures of this LTC model in other areas of the system. It is expected that the KAL T1 LTC will soon begin to experience the same failures. A second transformer is also proposed to improve reliability as only a portion of KAL load can be offloaded to the neighbouring substation during a KAL T1 outage. The existing KAL substation property may be too small to accommodate the rebuild, and land may need to be acquired to either expand or relocate the substation. As explained in the Annual Review for 2023 Rates, this

project was deferred to advance the Keremeos Transformer Replacement project, which presented a larger risk at that time.[109] The estimated cost of this project is $9.7 million, with expenditures forecast to be incurred from 2026 to 2029.

- **Blueberry Station Upgrade:** This project is driven by equipment condition issues and aging infrastructure. The project is necessary to continue supplying reliable electricity to Blueberry, Genelle, and part of Castlegar, and will also increase the capacity of the substation. Blueberry Transformer T1 (BLU T1) was manufactured in 1968. A third-party condition assessment completed in 2021 recommended that the metal-clad switchgear be replaced by 2027. This project will replace BLU T1, install a second transformer, and replace the metal-clad switchgear with an air-insulated bus and outdoor vacuum breakers. The project is estimated to cost $10.0 million, with expenditures forecast to be incurred from 2026 to 2029.

3.4.2.4 Distribution Sustainment Capital

Distribution Sustainment capital expenditures are required to proactively manage the condition and integrity of FBC's distribution line facilities, manage the risk to employees and public safety, and ensure an acceptable level of service is maintained for customers.

Table C3-38 below provides the 2025-2027 Forecast capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison. Each category of expenditure is discussed below.

Table C3-38: FBC Approved and Forecast Distribution Sustainment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Distribution Line Condition Assessment	1,730	1,841	1,684	1,543	1,850
Distribution Line Rehabilitation	3,498	3,268	4,728	4,448	5,154
Distribution Line Rebuilds	2,563	1,781	5,299	5,707	3,423
Secondary Network and Transformer Connectivity	-	-	264	264	265
Distribution Urgent Repairs	2,839	2,859	3,376	3,122	3,388
Small Planned Capital	952	842	929	937	1,120
Forced Upgrades and Line Moves	1,158	1,281	1,426	1,474	1,538
PCB Environmental Compliance	1,702	2,430	758	-	-
Porcelain Cutouts Replacement	2,438	3,507	2,491	-	-
Meter Exchanges	139	140	144	152	162
Other Distribution Sustainment Programs	461	270	1,347	1,367	1,392
Total Distribution Sustainment	**17,480**	**18,219**	**22,446**	**19,014**	**18,291**

Overall, the 2025-2027 Forecast is comparable to the 2023 and 2024 Approved levels, with the largest increases occurring in Distribution Line Rebuilds and Other Distribution Sustainment Programs. Further details on each category are provided below. With regard to the PCB

[109] Appendix C2, p. 10.

Environmental Compliance and Porcelain Cutouts Replacement programs, these have been previously discussed in the 2020-2024 MRP Application[110] and the costs in 2025 are the remaining costs to complete the programs.

3.4.2.4.1 DISTRIBUTION LINE CONDITION ASSESSMENT

The Distribution Line Condition Assessment program is based on an eight-year cycle of inspecting and testing all FBC distribution line facilities. The program consists of a pole test and treat and a condition assessment. The test and treat component of the program is aimed at the section of pole at ground level and below. The above ground visual inspection focuses on the condition of the pole itself and all equipment (anchoring, cross-arms, insulators, guying, apparatus, and grounding) attached to the pole. If an issue is detected during the condition assessment, the deficiency is documented and corrected in the following year. FBC manages the program on an eight-year cycle to levelize both the annual costs and the resources required.

3.4.2.4.2 DISTRIBUTION LINE REHABILITATION

The Distribution Line Rehabilitation program includes specific rehabilitation projects for various distribution facilities and involves expenditures for stubbing poles, replacing poles, cross-arms, insulators, guy wires, and correcting other defects identified through the previous years' assessments. The Distribution Line Rehabilitation program deals with issues that, while not severe enough to require immediate repairs (in which case they would be carried out immediately under the Distribution Urgent Repairs program), are serious enough that they must be addressed in the year following the condition assessment.

3.4.2.4.3 DISTRIBUTION LINE REBUILDS

The Distribution Line Rebuilds program involves the replacement of aged and deteriorated equipment on a larger scale than would typically be performed under the Distribution Line Rehabilitation program. Items include rebuilding failing overhead and underground conductors, replacing rotted poles and platforms, replacing leaking transformers, and installing ground grids at ungrounded services, as well as the replacement of copper conductor in areas considered to be a risk to public or employee safety. FBC identifies these deficiencies through condition assessment data, site assessments and normal daily operations.

The primary reason for the increased expenditures during the Rate Framework term is that, starting in 2025, this program will also include the rebuilding of underground subdivisions where FBC has direct-buried primary and secondary cables that are approaching end-of-life. FBC has identified that these areas are in poor condition and have experienced outages in the past.

3.4.2.4.4 SECONDARY NETWORK AND TRANSFORMER CONNECTIVITY PROJECT

This project will update inaccurate or missing information in FBC's Geographic Information System (GIS). The project will correct inaccurate mapping between a distribution transformer and its AMI meter connections, update inaccurate or missing information for secondary conductor

[110] 2020-2024 MRP Application, pages C-97 and C-98.

type, and update inaccurate or missing phasing information for the primary conductor supplying the distribution transformers. Improving data in GIS related to accurate connectivity of customers supplied by a particular transformer, secondary conductors, and primary phasing will help to improve system planning and design to better respond to electrification mandates. This project will also help identify the need for secondary upgrades in the FBC service territory to continue providing safe and reliable service to FBC customers. The estimated total cost for this project is $1.3 million, with expenditures forecast to be incurred from 2025 to 2029.

3.4.2.4.5 DISTRIBUTION URGENT REPAIRS

The Distribution Urgent Repairs program is required to repair or replace components that are in poor condition and in danger of immediate failure on the distribution system due to weather, defective equipment, animal intrusions, vandalism, abnormal operating conditions, vehicle collisions, or other unexpected reasons that can cause outages or present risks that must be addressed in an expedient manner. FBC's forecast expenditures are based on historical costs, with actual expenditures varying from year to year due to the severity and number of structure failures.

3.4.2.4.6 SMALL PLANNED CAPITAL

The Small Planned Capital program is similar to the Distribution Condition Assessment and Distribution Rehabilitation programs but captures off-cycle work required to keep the distribution lines safe and reliable. Each year, operational and safety concerns on the distribution system, including storm damage, clearance problems and aging equipment are identified by field staff outside of the normal assessment cycle. Repairs to address these concerns are required to maintain a safe and reliable distribution system. The repairs are generally non-urgent in nature and consequently are not completed under the Distribution Urgent Repair program.

3.4.2.4.7 FORCED UPGRADES AND LINE MOVES

This program is required to complete distribution upgrades driven by third party requests. The following are potential situations where upgrades or line moves are required:

- Requests from governing authorities (e.g., Ministry of Transportation and Infrastructure or municipalities) to relocate distribution lines located on road allowance or highway rights-of-way to accommodate road widening or improvements;
- Requests to relocate distribution lines where FBC does not have sufficient land rights for the distribution line facilities located on customer property; and
- Third party utility requests for upgrade of FBC transmission and distribution line plant to accommodate a shared use arrangement.

3.4.2.4.8 METER EXCHANGES

This category includes the meter replacements and exchanges for metering equipment that fails during the metering compliance or meter re-test program. Metering infrastructure includes meters, current transformers, potential transformers, and ancillary equipment.

Subsequent to the implementation of advanced meters in 2017, FBC restarted the meter exchange compliance sample program in 2022 (pilot) and the full regular program in 2023. Meters are now exchanged and tested a year ahead of meter seal expiry dates. This will continue as an annual program going forward. FBC has expenditures for meters and ancillary equipment to cover compliance sample exchanges, meter damage, and meter failures.

3.4.2.4.9 OTHER DISTRIBUTION SUSTAINMENT PROJECTS

Other Distribution Sustainment expenditures include the following:

- FBC has a number of padmount switchers in critical locations that are near end of life. These switches are 1980's vintage and often serve significant load that cannot be supplied from any other source. When these switchers fail, they result in significant outages with long restoration times. The replacement of end-of-life SF6 gas and oil insulated switchers will continue to be prioritized based on condition and criticality.
- The Underground Cable Replacement program began in 2011 and continues to be an important program for sustainment of the Kelowna network. The replacement of main 350MCM feeder cables manufactured pre-1990 continues to be the focus of this program. FBC has also experienced problems with aged 1/0 aluminium cables of similar vintage in recent years.
- Installation of fault indicators. Fault indicators provide a significant operational benefit by supporting the quick identification and localization of faults and subsequent repair of faulted cables. Without these fault indicators, outage times can be greatly lengthened which negatively impacts reliability for customers. In general, fault indicators should be installed on each primary phase conductor on every switcher node, every junction box node, and on cables leaving feed-through transformers. Fault indicators will allow failures to be located much more easily and therefore improve fault isolation and system restoration in a cost-effective manner.

3.4.2.5 Telecommunications Capital

FBC's telecommunications systems are integral components in the protection relaying system, remedial action schemes, substation operations and control, and field dispatch systems. These systems require ongoing investment for the replacement or upgrade of aging systems for safe and reliable operation of the power system, as well as to address changing standards and regulations such as Mandatory Reliability Standards.

Table C3-39 below provides the 2025-2027 Forecast Telecommunications capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison. Each category of expenditure is discussed below.

Table C3-39: FBC Approved and Forecast Telecommunications Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Communication Upgrades	339	344	313	435	444
Relay Replacement	-	-	700	544	662
Station Smart Device and Recloser Upgrades	326	324	1,217	803	822
SCADA Systems Sustainment	964	1,443	970	1,012	1,078
Systems Upgrades and Replacements	1,384	2,472	2,828	3,946	663
Other Telecommunications	593	616	275	286	301
Total Telecommunications Sustainment	**3,606**	**5,199**	**6,304**	**7,028**	**3,971**

FBC is forecasting increases in Telecommunications capital in 2025 and 2026, with spending forecast to decrease in 2027. The primary categories driving the increases are Station Smart Device and Recloser Upgrades, and Systems Upgrades and Replacements. Additionally, FBC has added a new category of Telecommunications capital titled "Relay Replacement". Each of the categories is described below, with projects over $1 million identified separately.

3.4.2.5.1 COMMUNICATION UPGRADES

This category includes upgrades to FBC's telecommunications facilities. These upgrades will enhance the system operators' ability to monitor the status of the transmission and distribution systems and respond to system events. Furthermore, the upgrades will maintain the integrity of the existing infrastructure used to protect the power system, FBC employees and the general public from damages and outages resulting from major system faults and events.

Some FBC telecommunication equipment is near or beyond its designed operational life. Individual components are increasingly unreliable, and manufacturers no longer supply spare parts or provide product support. In some cases, equipment can no longer be tested and adjusted regularly because it fails when test systems are operated, resulting in long delays putting equipment back in service.

3.4.2.5.2 RELAY REPLACEMENT

FBC has a number of aging and failing electronic relays that also create operational challenges to operate the system safely and reliably. Replacement of these relays is a priority and will facilitate operations, engineering, and planning areas, and enhance system reliability by providing co-ordination of protective devices, accurate information, and real time telemetry on system status, faults and other problems, decreasing the need for complex protection schemes. This new Relay Replacement program will update these devices and integrate them into the

telecommunications network. In addition, ongoing upgrades to obsolete or failing intelligent electronic devices at substations will occur as needed.

The program will be managed by prioritizing upgrades based on several factors including device malfunctions, obsolescence and vintage, complexity of troubleshooting, probability of failure and the potential for cost and operational efficiencies benefiting system operation and planning.

3.4.2.5.3 STATION SMART DEVICE AND RECLOSER UPGRADES

This program will address the replacement of other station devices and equipment such as meters, fuses, digital fault recorders, transformer non-electrical protection devices & schemes, and auxiliary protection devices, as well as upgrading distribution field recloser controller and SCADA control addition to aid FBC in operating its electric system safely and reliably.

3.4.2.5.4 SCADA SYSTEMS SUSTAINMENT

The SCADA sustainment program funds annual sustainment projects for SCADA software systems and infrastructure located at the System Control Centre or the Backup Control Centre and communications infrastructure directly connecting the System Control Centre to the Backup Control Centre. Additionally, as MRS continue to evolve, this program will fund MRS-related system upgrade projects that are necessary to maintain compliance with these standards.

3.4.2.5.5 SYSTEM UPGRADES AND REPLACEMENTS

A number of FBC's telecommunications and Protection and Control (P&C) systems have reached end of life and require upgrades or replacement. Included in this category are three projects in excess of $1 million. Each project is discussed further below.

Kootenay RAS Replacement

This project will replace aging relay equipment and add redundant back-up relaying. FBC purchased, designed, and installed the current Remedial Action Scheme (RAS) system in the early 2000s. The overall FBC RAS is broken up into two systems, with the Kootenay RAS completed in 2004 and the Okanagan RAS completed in 2006. The RAS system consists of Schweitzer Engineering Laboratories (SEL) relays (type SEL-421 and SEL-2100), which will be over 20 years old at the time of project completion and are at risk of failing. This system is without redundancy, so if any one of the relays fail, there is no backup, disabling a section of this RAS system until a replacement relay can be put into service.

The estimated total project cost, which is addressing the Kootenay RAS, is $1.3 million, with costs forecast to be incurred in 2027 and 2028.

VHF Radio System Replacement

The existing FBC Very High Frequency (VHF) radio system is at the end of its service life (>20 years old) and the technology is obsolete. Parts are still available but are becoming more difficult

to source and the legacy analog technology is becoming more difficult to support as most new hires are not trained or experienced with these technologies. New 2-way digital radio technologies bring significant benefits with respect to sharing of channels, ease of maintenance, superior coverage, and ability to send data in addition to voice.

The current system consists of 14 VHF repeaters (6 Okanagan, 3 Boundary, 5 Kootenays) and several VHF and Ultra High Frequency (UHF) links connecting the system together. This system will be replaced with spectrally efficient digital radio technology, allowing FBC to leverage the existing FEI radio system and share system components in overlapping coverage areas.

As explained in the Annual Review for 2023 Rates,[111] the first stages of the project are expected to start in 2024. The estimated cost of this project is $4.4 million, and the project is expected to complete in 2026.

eDNA System Replacement

In 2010, FBC purchased and installed eDNA, a data historian product used to collect and archive real time system data from generation sites and from SCADA. The software provider has announced that, as of 2026, eDNA will be at end of life and will no longer be supported, driving the need for FBC to replace this system. The current eDNA product utilizes the corporate IT network both for transport and to store this important data. This project will install a new replacement product for eDNA and migrate existing data into a more secure operations technology network environment where security considerations are more easily managed. The estimated total cost of the project is $3.3 million, with expenditures being incurred in 2025 and 2026.

3.4.2.5.6 OTHER TELECOMMUNICATIONS

This program includes the purchase of new or replacement communications equipment in support of field staff. This equipment includes landline equipment, radio communications for field use, and the installation of fibre cabling and wireless systems intended for multiple applications. These installations provide voice as well as data communications as required. This program supports the communications infrastructure needed for FBC to carry out general business operations, addressing the need for replacing or supplementing communications systems based on identified deficiencies.

3.4.2.6 FBC Contributions in Aid of Construction (CIAC)

FBC's customer contribution policy provides customers a capital credit or allowance based on the amount of investment in distribution poles, conductors, and transformers for the rate classes covered in the applicable retail rate. Any investment in poles, conductors, and transformers necessary to provide service to a customer in excess of this credit or allowance will be paid as a capital CIAC by the new customer. The recoveries in this category are forecast based on the

[111] Appendix C2, p. 12.

anticipated work for forced upgrades and historical levels of receivables for new connects and identified recoverable projects.

The two tables below provide the realized and projected CIAC over the Current MRP term, and the forecasts for 2025 to 2027 with 2023 and 2024 Approved amount provided for comparison.

Table C3-40: FBC Actual and Projected Contributions in Aid of Construction, 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
New Connects	(6,301)	(7,600)	(7,348)	(8,169)	(6,925)
Forced Upgrades	(391)	(689)	(1,150)	(596)	(614)
Total CIAC	**(6,692)**	**(8,289)**	**(8,498)**	**(8,765)**	**(7,539)**

Table C3-41: FBC Approved and Forecast Contributions in Aid of Construction Forecast 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
New Connects	(10,218)	(6,925)	(8,085)	(8,364)	(8,485)
Forced Upgrades	(1,410)	(614)	(765)	(791)	(816)
Total CIAC	**(11,628)**	**(7,539)**	**(8,850)**	**(9,155)**	**(9,301)**

3.4.3 FBC Other Capital

FBC Other Capital includes Equipment, Facilities, and IS expenditures, as well as a new category for Corporate Security expenditures.

Table C3-42 below summarizes the actual and projected Other capital expenditures from 2020 to 2024.

Table C3-42: FBC Actual and Projected Other Capital Actual Expenditures 2020-2024 ($000s)[112]

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Equipment	3,444	2,711	4,155	4,212	4,877
Facilities	3,434	3,685	2,796	4,452	4,096
Information Systems	7,865	7,679	8,588	8,189	8,547
Corporate Security	1,293	1,274	1,381	1,286	1,228
Total Other Capital	**16,036**	**15,349**	**16,921**	**18,139**	**18,748**

Table C3-43 below provides the 2025-2027 Forecast Other capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

[112] During the Current MRP, Corporate Security was included in the IS portfolio under Cybersecurity and in the Sustainment capital portfolio under Physical Security. Actuals for Corporate Security are now shown separately to allow for comparison with the 2025 to 2027 Forecast amounts.

Table C3-43: FBC Approved and Forecast Other Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Equipment	4,099	3,717	6,307	6,194	5,842
Facilities	4,305	4,096	6,945	6,792	4,763
Information Systems	8,246	8,372	9,150	9,400	9,550
Corporate Security	1,008	1,028	2,668	2,536	2,544
Total Other Capital	**17,658**	**17,213**	**25,070**	**24,922**	**22,699**

Each of the categories is discussed further below.

3.4.3.1 Equipment

Equipment capital expenditures include the acquisition of vehicles and equipment and specialized tools and equipment. Expenditures for the equipment category are driven by obsolescence, excessive wear, and regulatory compliance.

Table C3-44 below summarizes the actual and projected Equipment capital expenditures from 2020 to 2024.

Table C3-44: FBC Actual and Projected Equipment Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Vehicles and Equipment	2,550	1,845	3,641	3,520	4,250
Tools and Equipment	894	866	515	692	627
Total Equipment	**3,444**	**2,711**	**4,155**	**4,212**	**4,877**

Table C3-45 below provides the 2025-2027 Forecast Equipment capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-45: FBC Approved and Forecast Equipment Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Vehicles and Equipment	3,490	3,090	5,670	5,545	5,179
Tools and Equipment	609	627	637	649	662
Total Equipment	**4,099**	**3,717**	**6,307**	**6,194**	**5,842**

The forecast capital spending for Tools and Equipment is consistent with both the 2023 and 2024 Approved amounts and with the actual/projected spending during the Current MRP term.

FBC is forecasting an increase in Vehicles and Equipment over the Rate Framework term. The forecast for Vehicles and Equipment is described further below.

- **Vehicles and Equipment:** This category includes the replacement and/or acquisition of specialized heavy fleet vehicles, specialty equipment, mid-duty service vehicles, light duty passenger vehicles, and off-road vehicles necessary to meet the operational requirements of FBC. Over the next few years, FBC has a substantial capital replacement requirement based on replacement triggers identified by age, engine hours and utilization to maintain safe and reliable vehicles and equipment able to respond to customer calls and provide emergency response. FBC plans to replace 63, 24 and 35 vehicles in 2025, 2026 and 2027, respectively. These replacements encompass light duty, medium duty and heavy-duty trucks and vans, trailers, and other equipment.

  FBC considers many factors when determining the need for vehicle replacements. These include suitability to meet current and future business requirements, ability to maintain adequate safety, age, condition, and compliance with regulations and sustainability. Each replacement decision is evaluated on a unit-by-unit basis.

3.4.3.2 Facilities

Facilities capital expenditures include the acquisition or leasing of land, non-plant buildings such as offices, field musters and warehouses, and office furniture and equipment. The expenditures focus primarily on capacity planning, upgrading, and replacement of end-of-life assets.

Table C3-46 below provides the actual and projected Facilities capital expenditures from 2020 to 2024.

Table C3-46: FBC Actual and Projected Facilities Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Facilities	3,434	3,685	2,796	4,452	4,096
Total Facilities	**3,434**	**3,685**	**2,796**	**4,452**	**4,096**

Table C3-47 below provides the 2025-2027 Forecast Facilities capital expenditures as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-47: FBC Approved and Forecast Facilities Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Facilities	4,305	4,096	6,945	6,792	4,763
Total Facilities	**4,305**	**4,096**	**6,945**	**6,792**	**4,763**

Compared to the 2023 and 2024 Approved Facilities expenditures, FBC is forecasting an increase in spending in 2025 and 2026, with spending forecast to decrease closer to historical levels in 2027. The key projects included within the 2025-2027 timeframe are discussed below.

Grand Forks Field Office Storage Addition and Yard Reconfiguration

Due to structural concerns, FBC has removed covered storage from this facility and needs to replace it. Concurrently, FBC will make improvements to the flow and flooding concerns for the yard compound. The estimated cost for this project is $2.5 million. FBC will commence the detailed design of the improvements in 2024, with construction to follow in 2025.

Trail Esplanade Interior Office Space

Due to employee growth, FBC will be repurposing the 1st floor office space that it currently leases to another tenant. The tenant is expected to exit the space in 2024. Commencing in 2025, FBC will undertake the following improvements prior to its employees moving into the space: (i) revise the layout; (ii) perform interior finishes; and (iii) add security. FBC's estimated cost of the improvements is $1 million.

Princeton Field Office

The Princeton Field Office is circa 1960 and provides office, warehouse, and yard space for FBC's Princeton crews. This project includes reconfiguring the current office space and mezzanine area to address the lack of sufficient space to support appropriate wash/change rooms, kitchen and crew touch down space. The estimated cost of this project is $1.25 million, with expenditures occurring in 2025 and 2026.

Maintenance of Existing Facilities

FBC needs to maintain its existing facilities. Over the next decade, FBC's buildings and building equipment are entering a large capital replacement cycle due to their age. To sustain aging assets, FBC needs to increase its Facilities capital renewal project expenditures, ultimately impacting the upcoming three-year period.

Building equipment, including HVAC, fire protection, roofing and paving replacements will increase to on average $1.5 million per year. A plan has been developed to systematically replace targeted assets over a three-year period, prioritizing asset condition and criticality. With this proactive approach, FBC can better distribute expenditures over the three-year Rate Framework term without compromising critical downtime.

3.4.3.3 Information Systems

FBC's IS expenditures focus on sustaining, enhancing, replacing, and upgrading existing applications and infrastructure or, as needed, introducing new technology capabilities in order to improve safety, customer service, reliability and efficiency.

Table C3-48 below summarizes the actual and projected IS capital expenditures from 2020 to 2024.

Table C3-48: FBC Actual and Projected IS Capital Expenditures 2020-2024 ($000s)[113]

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
IS Sustainment	5,557	5,019	4,649	5,354	5,622
Application Enhancements	447	887	628	327	337
Business Technology Applications	1,861	1,773	3,311	2,508	2,588
Total Information Systems	**7,865**	**7,679**	**8,588**	**8,189**	**8,547**

Table C3-49 below provides the 2025-2027 Forecast IS capital expenditures by category as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-49: FBC Approved and Forecast IS Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
IS Sustainment	3,679	3,782	6,000	6,200	6,300
Application Enhancements	1,167	1,190	650	700	750
Business Technology Applications	3,400	3,400	2,500	2,500	2,500
Total Information Systems	**8,246**	**8,372**	**9,150**	**9,400**	**9,550**

Overall, on average, FBC's actual/projected IS capital spending has been consistent with the approved amounts during the Current MRP term. While the overall spending has been consistent with approved, spending at the individual category level varies from year to year. This is because FBC manages the IS capital portfolio as a whole, with variations in spending amongst the categories due to a degree of overlap in the business drivers for each of the categories and annual prioritization of requests for IS capital work.

For the term of the Rate Framework, FBC is forecasting a level of IS Sustainment capital that is consistent with the level of capital spending that FBC actually incurred during the Current MRP term and projects to incur in 2024. Although the 2025-2027 Forecast IS Sustainment capital expenditures are higher than the 2023 and 2024 Approved amounts, this is offset by decreases in Application Enhancements and Business Technology Applications compared to the 2023 and 2024 Approved amounts.

The changes in each category are described in the subsections below.

3.4.3.3.1 INFORMATION SYSTEMS SUSTAINMENT

IS Sustainment capital includes infrastructure sustainment, end-user device sustainment, and application sustainment:

[113] Cybersecurity was included within IS Capital Expenditures in the Current MRP; however, it is now included in a new portfolio called Corporate Security, as discussed in Section C3.4.3.4 below. As such, capital expenditures related to cybersecurity are not included in Tables C3-48 and C3-49.

- **Infrastructure sustainment:** the capital funding required to replace or upgrade outdated or end-of-life hardware and server software in the data centres. This includes, among other things, servers, operating systems, local area network (LAN) and wide area network (WAN) equipment.
- **End-user device sustainment:** the capital funding required to replace or upgrade end user equipment and software. This includes, among other things, PCs, operating systems, desktop applications, printing equipment and all mobile devices.
- **Application sustainment:** the capital funding required to sustain existing software applications. This includes required upgrades to maintain support, reliability, and performance of existing applications.

As shown in Tables C3-48 and C3-49 above, IS Sustainment capital is the largest area of IS capital spending. Actual IS Sustainment capital spending was higher than the approved amounts during the Current MRP term due to the addition of sustainment costs to support new business tools and devices (e.g., connecting internal systems and data to mobile field users). FBC expects that the IS Sustainment capital spending during the 2025-2027 term of the Rate Framework will be similar to the levels of actual spending experienced during the Current MRP term.

3.4.3.3.2 APPLICATION ENHANCEMENTS

Application Enhancements capital funding is used to modify the functionality or enable capabilities of existing applications to meet annual business requirements. Actual spending on Application Enhancements can fluctuate from year to year based on higher/lower business requests for enhancements to current systems.

FBC has reduced the 2025-2027 Forecast expenditures for Application Enhancements compared to the 2023 and 2024 Approved amounts to be more reflective of actual spending during the Current MRP term.

3.4.3.3.3 BUSINESS TECHNOLOGY APPLICATIONS

Business Technology Applications (Transform) include capital funding for initiatives that impact the way business is conducted and that support business unit priorities. This includes the introduction of new technologies to meet business requirements, system integration that changes business processes and/or the introduction of new business processes, and harmonization of systems that benefit both FEI and FBC. The prioritization and selection of projects for each year are completed by the Fall of the previous year. This process is designed to ensure that projects with higher value will be considered first when allocating finite resources. In addition, the rapid pace of technology changes necessitates more frequent replacement of systems due to obsolescence, loss of technical support and maintenance, risk of cyber threats, or to leverage the benefits of new functionality.

FBC has reduced its 2025-2027 Forecast expenditures compared to the 2023 and 2024 Approved levels to be more reflective of the actual/projected spending levels during the Current MRP term.

3.4.3.4 Corporate Security

Expenditures related to Corporate Security have historically been split between Sustainment capital and Other capital. In the Current MRP, Cybersecurity was included as a category within IS capital, and Physical Security was included within Sustainment capital. Starting in 2025, FBC is now tracking these costs as a new portfolio in Other capital and has included the historical actuals in Table C3-50 for reference.

Table C3-50: FBC Actual and Projected Corporate Security and Business Continuity Capital Expenditures 2020-2024 ($000s)

	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Projected
Corporate Security	1,293	1,274	1,381	1,286	1,228

Table C3-51 below provides the 2025-2027 Forecast capital expenditures for Corporate Security as well as the 2023 and 2024 Approved expenditures for comparison.

Table C3-51: FBC Approved and Forecast Corporate Security and Business Continuity Capital Expenditures 2023-2027 ($000s)

	2023 Approved	2024 Approved	2025 Forecast	2026 Forecast	2027 Forecast
Corporate Security	1,008	1,028	2,668	2,536	2,544

As shown in Table C3-51 above, FBC is forecasting an increase in Corporate Security capital expenditures during the Rate Framework term.

As companies respond to the ever changing cyber and physical security threat landscape due to elements such as state sponsored groups, special interest hacktivists and commercially available hacking tools, additional spending is required to enhance FortisBC's Corporate Security risk management programs. These programs are based on a responsive model that adapts to an evolving threat landscape.

Starting in 2025, FBC is forecasting an increase in capital costs for its patch management program of $1.196 million (please refer to Section C2.3.4.4 for a discussion of the O&M component of the patch management program). In recent years, FBC has increased expenditures for patching to respond to evolving security risks and to reduce the threat landscape and vulnerabilities. Increased sophistication in attacker techniques has forced hardware and software companies to release updated code and operating system patches on a more frequent basis to counteract these threats and vulnerabilities. The increased frequency of these vendor released updates requires FBC to increase the cadence of the patch review and installation. In many cases, required patching will increase from quarterly to monthly, essentially quadrupling the patching workload for those systems. Additionally, the patching program must increase scope to include all critical and non-critical applications. This prevents attackers from exploiting known flaws in software or

devices which could potentially lead to compromised system reliability, including data integrity, confidentiality, or availability.

Additionally, FBC is continuing to strengthen the physical protection of its facilities by enhancing its ability to implement and maintain technologies and strategies that manage the threat landscape. This includes improving the physical security of its operations centres and updating its aging camera infrastructure to address end of life/end of support technology for its video management systems. This work is required to address identified cybersecurity vulnerabilities in legacy systems, as well as camera performance issues pertaining to outdated versions and hardware across many locations, which impacts site monitoring and response at these locations.

3.4.4 FBC Regular Flow-through Capital Expenditures

Flow-through capital expenditures are Regular capital expenditures that are forecast each year in the Annual Reviews, with variances captured in the Flow-through deferral account. FBC is approved to treat certain capital items as flow-through due to a variety of factors, including their uncontrollable nature or uncertainty in scope, costs, and timing. FBC is also approved to treat capital expenditures related to Clean Growth Initiatives as flow-through.

For the Rate Framework, FBC will continue to forecast Regular Flow-through capital related to its EV DCFC Service, as approved by Decision and Order G-215-21. In addition, as explained in Section C2.5.2, FBC is proposing to treat the incremental MRS assessment report costs as forecast (flow-through) during the term of the Rate Framework. These incremental costs may be O&M, capital, or both. Please refer to Section C2.5.2 for the background and rationale for the proposed flow-through treatment.

3.4.5 FBC Regular Capital Summary

Based on FBC's current knowledge of system requirements and industry drivers, FBC is forecasting increased levels of spending over the course of the Rate Framework relative to the Current MRP. With the increased provincial focus on electrification, the entirety of FBC's system, from generation to local distribution infrastructure and the necessary support systems, requires investment to address both the ability to accommodate load growth (through Growth capital expenditures), and the ability of the existing infrastructure to support current and increasing levels of demand.

With regard to Growth and Sustainment capital, the increased capital spending is primarily driven by the following:

- Increased requirements for system improvements to the transmission and distribution systems to accommodate load growth; and
- Upgrades to aging assets, particularly Generation and Stations assets, to meet current codes and standards, to address the condition and age of infrastructure, and to improve reliability.

Other capital is forecast to increase as Equipment and Facilities are entering a large capital replacement cycle due to their age. FBC is also proposing increased investment in corporate security, including increased expenditures in patch management, given the need to address the risk environment.

Finally, FBC proposes to continue its flow-through treatment for Regular capital related to its EV DCFC service and add MRS assessment report costs to this category of expenditures.

3.4.6 FBC Major Capital Projects

Major Projects are capital expenditures that do not form part of Regular capital spending as they are approved through a CPCN or other application. In the MRP Decision, the BCUC determined that FBC's CPCN threshold for the Current MRP term would be $20 million.[114] FBC proposes to maintain the currently approved CPCN threshold of $20 million for the Rate Framework term.

The following are examples of the Major Project applications that may arise during the course of the Rate Framework term:

- FortisBC Enterprise Resource Planning (ERP) Modernization and Electric Customer Information System (CIS+) Replacement
- FBC South Slocan Dam Free Overflow Spillway Concrete Refurbishment
- FBC Creston Station Upgrade
- FBC Stony Creek Station Upgrade

Each of these projects is described in more detail below.

FortisBC ERP Modernization and Electric CIS+ Replacement

Forecast Implementation Timeline: *2025 to 2027*

SAP was initially installed in 1998 and is the ERP system used extensively across FortisBC. FortisBC has been informed that SAP will no longer provide support for the current platform beyond 2027 and, as such, the ERP Modernization project will transition the existing FortisBC system to the new SAP S/4 HANA version. Additionally, FBC will be replacing CIS+, which is a system deployed in 1999 that FBC uses to house the meter to cash process and information for all electric customers. At nearly 25 years old, this system is no longer supported by the software manufacturer and requires ongoing customized support to ensure the continued accuracy and security of customer billing information. FBC intends to align the customer billing system with FEI's system. As such, FBC will be seeking to replace the current CIS+ system with SAP S/4 HANA at the same time as FortisBC transitions to SAP S/4 HANA.

[114] MRP Decision, p. 133.

In summary, the ERP Modernization and Electric CIS+ Replacement scope is to upgrade to a newer, more advanced version of the current ERP system used by both FEI and FBC, and to replace the current FBC CIS+. Costs for the project will be allocated between FEI and FBC. Further discussion on the project and the cost allocation will be provided in the upcoming application.

South Slocan Dam Free Overflow Spillway Concrete Refurbishment

Forecast Construction Timeline: *2026 to 2032*

The South Slocan Dam was built in 1928 as a concrete gravity dam with two separate lengths. One length contains the power intake structure and powerhouse and is constructed on the west channel of the Kootenay River. The other length consists of a free overflow spillway constructed on the east channel of the Kootenay River. The total crest length is 764 metres (2,505 feet) and the maximum height is 23 metres (75 feet).

The scope of this project includes the rehabilitation of deteriorated concrete of the free overflow spillway, installation of dam safety instrumentation, installation of post tensioned anchors, and upgrade of the flashboards.

The upgrade of the free overflow spillway is essential for the proper operation of the South Slocan Dam since there are no spillway gates and no other mechanical or electrical equipment for the flow control system for the passage of floods at South Slocan Dam. The free overflow sections of the spillway comprise the flow control for flood passage.

Creston Station Upgrade

Forecast Construction Timeline: *2025 to 2027*

This project is driven by equipment condition issues and aging infrastructure. The project is necessary to continue supplying reliable electricity to Creston and the surrounding area and will also increase the capacity of the substation.

The Creston Transformer T1 (CRE T1) was manufactured in 1974, and the Creston Transformer T2 (CRE T2) was manufactured in 1976. CRE T1 and CRE T2 are each equipped with a discontinued LTC that is no longer supported by the manufacturer. The condition of the CRE T1 and CRE T2 LTCs is deteriorating. FBC has experienced previous failures of the same LTC model used in CRE T1 in other areas of the system. FBC expects that the CRE T1 LTC will soon begin to experience the same issues. The CRE T2 LTC has also been recommended for immediate service by a third party due to age. Furthermore, the metal-clad switchgear has been in service since 1961 and, based on a a third-party condition assessment completed in 2021, is recommended for replacement by 2025.

This project proposes to rebuild the CRE substation, which includes replacing the metal-clad switchgear with air-insulated bus and outdoor vacuum breakers. The existing CRE substation

property is too small to accommodate the rebuild, and land needs to be acquired to either expand or relocate the substation.

Stoney Creek Station Upgrade

Forecast Construction Timeline: *2026 to 2029*

This project is driven by equipment condition issues and aging infrastructure. The project is necessary to continue supplying reliable electricity to portions of Trail, including the Boundary Regional Hospital and Warfield, and will also increase the capacity of the substation.

The Stoney Creek Transformer T1 (STC T1) was manufactured in 1969. An internal FBC condition assessment completed in 2023 found the STC T1 to be nearing end-of-life and the majority of the STC equipment to be in poor operating condition. The assessment also identified that corrosion from nearby industry is beginning to impact the safe and reliable operation of the equipment. The assessment recommends rebuilding the station by 2028 and that FBC consider relocating the substation to prevent premature equipment degradation from corrosion.

3.5 *CONCLUSION*

FortisBC's proposed capital expenditures during the Rate Framework term reflect the appropriate level of capital expenditures needed to ensure the safety and reliability of the FortisBC gas and electric systems and to provide service to new and existing customers. The proposed forecast approach for FBC Regular capital and FEI Regular Sustainment and Other capital, coupled with the proposed formula approach for FEI Growth capital, are needed to meet system requirements and customer needs in the changing operating environment, while also providing incentive and flexibility to implement capital plans efficiently.

The primary drivers for the increase in capital expenditures are increased requirements for system improvements to accommodate load growth, upgrades to aging generation assets to meet current codes and standards, and equipment replacements necessary to address condition, aging infrastructure and improve reliability.

4. ANNUAL CALCULATION OF THE REVENUE REQUIREMENT

4.1 INTRODUCTION

This section includes a description of the cost and revenue items required to determine the Companies' annual revenue requirements, which will be included in each year's Annual Review materials. The components that make up the FEI and FBC annual revenue requirements will largely remain the same, and FortisBC is proposing to continue the treatment approved during the Current MRP, where variances between forecasts and actuals are captured in a single Flow-through deferral account except where an approved deferral account either already exists or new deferral accounts arise and are approved by the BCUC during the term of the Rate Framework.

4.2 REVENUE FORECASTS

Revenues include the amounts received from customers at the existing approved rates for the sale and delivery of energy, plus various other revenues (e.g., revenues received under tariff supplements, etc.).

Revenues are a function of both energy consumption and the rate applicable at the time the energy is consumed. As in the Current MRP, the Companies will calculate the revenue forecast to be recovered at the existing approved rates in each year's Annual Review, based on a one-year forecast of the energy consumption and customer counts (i.e., demand/load forecasts). The Companies are proposing to continue the treatment of variances approved during the Current MRP, which includes:

- **FEI:** Revenue variances related to the use rates of residential and commercial customers (Rate Schedules 1, 2 and 3/23) will continue to be subject to the Revenue Stabilization Adjustment Mechanism (RSAM) mechanism which has been in existence since 1994. All other variances in revenues will be captured in the Flow-through deferral account.
- **FBC:** All variances in revenues will be captured in the Flow-through deferral account.

The purpose of the demand/load forecasts provided in the Annual Review process is to provide a one-year forecast of energy, as well as customer counts for the residential, commercial, and industrial rate classes, which are then used to set rates for the single test-year of each Annual Review. The demand/load forecasts provided in the Annual Review are not intended for long-term planning of the Utilities. Forecasts used for long-term planning purposes are completed separately in other proceedings and are not comparable to a single-year forecast used to set rates for the immediate year.

In contrast to a short-term single-year forecast which relies on immediate market conditions and recent actual demand data, long-term forecasts for resource planning or the development of Major Projects typically cover 20 years or longer and are more subjective, with a higher degree of uncertainty in the variety of factors impacting the forecasts, including economic indicators (such

as carbon pricing), regulatory and policy changes, and codes and standards changes (among others).

As discussed in Section A3, FortisBC proposes to host a targeted workshop on demand/load forecasting to review and discuss the differences between the methods employed for a single-year short-term forecast used to set rates annually and the method employed for long-term forecasting for the purposes of future infrastructure and resource planning. FortisBC also notes that as discussed in Section B3.1.1, the next long-term resource plans for FEI and FBC are expected to be filed in 2026 and 2025, respectively (i.e., during the Rate Framework term). Through the consultation and development of the long-term resource plans, BCUC staff and interveners will have the opportunity to participate in sessions specifically focused on long-term forecasting methods, and these methods will be thoroughly reviewed in the respective long-term resource plan regulatory processes.

The methods for determining the demand/load forecasts used to set rates annually during the term of the Rate Framework for each Company are described below.

4.2.1 Demand Forecasts (FEI)

FEI proposes to continue the use of the existing forecasting methods from the Current MRP for the purposes of setting delivery rates in each Annual Review over the term of the Rate Framework. FEI's forecasting methods are based on the recommendations contained in the Forecasting Method Study which was filed in the 2020-2024 MRP Application. This Forecasting Method Study was based on the culmination of research and testing over a number of years since 2015.[115] Please refer to Appendix C4-1 for a detailed description of FEI's current demand forecast methods.

FEI's forecasting methods have consistently produced a high level of accuracy when forecasting for the upcoming rate-setting year. Table C4-1 provides the aggregate variance in demand (excluding NGT and LNG customers) between actuals and forecast from 2015 to 2023. During this time the forecasting method has remained the same, with the exception that in 2020, the BCUC approved the adoption of the Exponential Smoothing (ETS) method for the use-rate forecasts of residential and commercial rate schedules (i.e., RS 1, 2, 3, and 23).[116] As demonstrated below, variances in aggregate demand have been less than five percent from 2015 to 2023 with the exception of 2016, and the Mean Absolute Percentage Error (MAPE)[117] over the period was approximately 2.7 percent.

[115] In response to the BCUC's Decision and Order G-86-15 regarding FEI's Annual Review for 2015 Delivery Rates, FEI began testing alternative forecasting methods in 2015 and included the results in a Forecasting Method Study that was filed in the 2020-2024 MRP Application.

[116] ETS was adopted for the RS 1, 2, 3, and 23 UPC forecasts as a result of the Forecasting Method Study filed as part of the 2020-2024 MRP Application. All other components of the forecasting method remained the same as the method used during the 2014-2019 PBR Plan term.

[117] MAPE measures the average absolute percentage difference between actual and forecast, i.e., average of the absolute variance in percentage.

Table C4-1: FEI's Demand Forecasting Variance (excluding NGT and LNG) from 2015 to 2023

Aggregate Demand (GJ)	2015	2016	2017	2018	2019	2020	2021	2022	2023
Actual	209,461,021	219,284,171	223,268,141	225,749,105	226,415,934	229,038,780	232,277,344	218,624,370	214,096,826
Forecast	205,083,634	205,658,686	212,768,380	226,154,710	232,598,417	231,967,326	227,138,737	228,364,535	214,583,313
Variance = (ACT-FCST)	4,377,387	13,625,485	10,499,761	(405,605)	(6,182,483)	(2,928,546)	5,138,607	(9,740,165)	(486,487)
% Variance = (Variance/ACT)	2.1%	6.2%	4.7%	-0.2%	-2.7%	-1.3%	2.2%	-4.5%	-0.2%

In addition, Table C4-2 below provides the aggregate variance (excluding NGT and LNG customers) in customer counts between actuals and forecast from 2015 to 2023. For the aggregate customer count, upon which FEI's formula O&M is based, the variances have been consistently small at less than two percent since 2015, and the MAPE for customer counts over the period is minor at approximately 0.5 percent.

Table C4-2: FEI's Customer Count Forecasting Variance (excluding NGT and LNG) from 2015 to 2023

Aggregate Customers (Year-End)	2015	2016	2017	2018	2019	2020	2021	2022	2023
Actual	979,277	991,591	1,006,043	1,027,092	1,038,354	1,051,752	1,062,480	1,073,302	1,085,331
Forecast	975,747	986,172	1,005,520	1,013,027	1,032,420	1,049,143	1,058,838	1,074,510	1,080,167
Variance = (ACT-FCST)	3,530	5,419	523	14,065	5,934	2,609	3,642	(1,208)	5,164
% Variance = (Variance/ACT)	0.4%	0.5%	0.1%	1.4%	0.6%	0.2%	0.3%	-0.1%	0.5%

The small variances since 2015 show that the existing forecasting methods for FEI have been effective in providing reasonably accurate forecasts in each Annual Review. Since the process for forecasting energy demand and customer counts will be repeated in each Annual Review with updated actuals, any ongoing changes in customer behaviour or the trend of customers' energy use profile (due to the energy transition or for other reasons) will be reflected in the actuals each year when the forecasts are developed. Furthermore, as mentioned above, FEI is proposing to continue with the RSAM and Flow-through deferral account treatment which will capture all variances between forecast and actual demand. As such, the impacts of any variances will be accounted for and flowed to customers in the following year.

Given the performance of FEI's existing forecasting methods and the short-term nature of the single test-year forecast with updates completed each year, as well as the use of deferral accounts to capture all forecasting variances, FEI considers the existing forecasting methods continue to be appropriate for the three-year term of the Rate Framework. As explained in Section C1.10, FEI is requesting that the demand methods for setting delivery rates in the Annual Reviews be approved for the term of the Rate Framework and that these methods be out of scope for the Annual Reviews during the Rate Framework term.

4.2.1.1 NGT and Non-NGT Demand Forecasts (FEI)

As part of FEI's Annual Reviews and calculation of the revenue requirement, FEI will continue to provide CNG and LNG demand forecasts related to NGT customers (for CNG and LNG for transportation) and non-NGT customers for LNG sales under RS 46, based on existing contract demand as well as ongoing discussions with existing and potential customers that are expected to secure firm contracts with FEI.

In the Annual Review for 2024 Delivery Rates Decision and Order G-334-23 (2024 Annual Review Decision), the BCUC directed FEI:[118]

> …to discuss alternative methodologies for forecasting non-NGT LNG demand and to provide an update on its forecasts for LNG export volumes related to spot purchase agreements as part of its next revenue requirements application. [Emphasis added]

FEI considers that forecasting non-NGT LNG demand consistent with its current practice continues to be the best approach at this time. FEI forecasts its non-NGT LNG demand by including a forecast of volume for which FEI has firm contract demand plus demand associated with customers that have spot purchase contracts. The spot purchase customer demand is derived from direct conversations with those customers. This approach is similar to FEI's method for forecasting Industrial customer demand, where FEI circulates a survey to its Industrial customers requesting them to forecast their own expected usage. FEI's non-NGT LNG demand is typically not backed by firm take-or-pay commitments as most are spot purchases, with the majority of this demand being for the ISOtainer LNG business. FEI's ISOtainer LNG demand is affected by factors such as LNG market price, foreign exchange, and logistics costs, making the non-NGT LNG forecast more uncertain. Therefore, FEI considers that its own customers are best able to forecast their own demand.

In response to the BCUC's directive in the 2024 Annual Review Decision, FEI considered the following alternative forecasting methods:

1. Exclude any spot demand from the forecast, which is the method FEI used prior to 2016. In the Annual Review for 2015 Delivery Rates Decision and Order G-86-15, the BCUC directed FEI "to address the issue of spot purchases more fully and provide a proposal for including some or all of these purchases in the demand forecast based on an analysis of the probability of various outcomes". In response, starting in 2016, FEI included an annual forecast of spot volumes based on discussions with customers.
2. Utilize the most recent full year of actuals as the subsequent period's forecast, without adjustment. This approach would not account for any changes in demand that FEI would be anticipating for the upcoming year based on conversations with customers (existing or potential) or developments in the market. Further, due to the timing of the Annual Reviews, there would be a two-year lag between the actuals used as the forecast for the test period (e.g., when setting rates for 2025, FEI would be using the most recent full year of actual demand, which would be 2023).

Of the two alternatives identified above, FEI considers the first alternative to be more reasonable, because it would account for expected changes in customer demand since the previous Annual Review forecast but would exclude speculation in spot related demand which is the area of the forecast that can create the largest variances.

[118] Page 9.

FEI continues to consider its current forecasting method to be the most appropriate. FEI acknowledges that there is a large degree of uncertainty in the non-NGT LNG ISOtainer demand, which also means that the likelihood of changes occurring more quickly is higher (i.e., there is a higher likelihood compared to other customer classes that spot purchase agreements could materialize and result in increased demand during the test year). Further, and similar to the Industrial customer forecasting approach, FEI is in contact with its existing and potential customers, and it therefore is reasonable to consider these conversations (including the customers' own demand expectations) when developing the upcoming test year's demand forecast.

Finally, and regardless of the method adopted, the revenue variances that result from demand variances are accounted for in FEI's Flow-through deferral account and these variances are recovered from or returned to customers in subsequent years.

4.2.2 Load Forecasts (FBC)

FBC proposes to continue the use of the existing forecasting methods from the Current MRP for the one-year forecast in each Annual Review over the term of the Rate Framework. Please refer to Appendix C4-2 for a detailed description of FBC's current load forecast methods.

FBC's forecasting methods have consistently produced a high level of accuracy when forecasting for the upcoming rate-setting year. Table C4-3 below provides the aggregate variance in load between actuals and forecast from 2015 to 2023. The forecasting method has remained the same over this period. As demonstrated below, the variances in the aggregate load have been less than three percent with the exception of 2022,[119] and the MAPE for the load forecast over this period is approximately 1.5 percent.

Table C4-3: FBC's Load Forecasting Variance from 2015 to 2023

Aggregate Demand (GWh)	2015	2016	2017	2018	2019	2020	2021	2022	2023
Actual	3,446	3,480	3,512	3,564	3,592	3,616	3,677	3,785	3,808
Forecast	3,499	3,540	3,559	3,485	3,602	3,602	3,664	3,591	3,775
Variance = (ACT-FCST)	(53)	(60)	(47)	79	(10)	14	13	194	33
% Variance = (Variance/ACT)	-1.5%	-1.7%	-1.3%	2.2%	-0.3%	0.4%	0.4%	5.1%	0.9%

In addition, Table C4-4 below provides the aggregate variance in customer counts between actuals and forecast from 2015 to 2023. For the aggregate customer count, upon which FBC's formula O&M is based, the variances have been consistently less than two percent since 2015 and the MAPE for customer counts over the period is small at approximately 0.7 percent.

[119] As explained in the Annual Review for 2023 Rates (page 23) and in the response to BCUC IR1 7.3 in the Annual Review for 2024 Rates, the larger variance in 2022 was primarily due to higher than forecast data centre load.

Table C4-4: FBC's Customer Count Forecasting Variance from 2015 to 2023

Aggregate Customers (Year-End)	2015	2016	2017	2018	2019	2020	2021	2022	2023
Actual	131,883	133,550	135,793	138,587	141,027	143,714	145,830	148,435	150,698
Forecast	132,164	133,578	134,585	136,602	139,459	142,865	143,721	148,462	152,011
Variance = (ACT-FCST)	(281)	(28)	1,208	1,986	1,569	849	2,109	(27)	(1,313)
% Variance = (Variance/ACT)	-0.2%	0.0%	0.9%	1.4%	1.1%	0.6%	1.4%	0.0%	-0.9%

The small variances since 2015 show that the existing forecasting methods for FBC have been effective in providing a one-year forecast in each Annual Review. Since the process for forecasting energy demand and customer counts will be repeated in each Annual Review with updated actuals, any ongoing changes in customer behaviour or the trend of customers' energy use profile (due to the energy transition or for other reasons) will be reflected in the actuals each year when the forecasts are developed. Furthermore, as mentioned above, FBC is proposing to continue with the Flow-through deferral account treatment which will capture all variances between forecast and actuals. As such, the impacts of any variances will be accounted for and flowed to customers in the following year.

Given the performance of FBC's existing forecasting methods and the short-term nature of the single test-year forecast with updates completed each year, as well as the use of deferral accounts to capture all forecasting variances, FBC considers the existing forecasting methods continue to be appropriate for the three-year term of the Rate Framework. As explained in Section C1.10, FBC is requesting that the demand methods for setting rates in the Annual Reviews be approved for the term of the Rate Framework and that these methods be out of scope for the Annual Reviews during the Rate Framework term.

4.3 *COST OF ENERGY*

4.3.1 Cost of Gas (FEI)

FEI's cost of gas includes the cost of the gas commodity, the cost of midstream resources (storage and transportation), and the Core Market Administration Expense (CMAE) costs associated with providing the gas supply function. With the exception of the CMAE costs, as further discussed below, FEI does not request approval of forecast gas costs as part of the Annual Review process. Instead, any rate changes related to gas costs are dealt with separately through the quarterly gas cost reports to the BCUC. Any variations between forecast and actual gas costs will continue to be returned to or recovered from customers through the existing deferral account mechanisms (i.e., the Commodity Cost Reconciliation Account (CCRA) and the Midstream Cost Reconciliation Account (MCRA)).

While FEI does not request approval of forecast gas costs as part of the Annual Review process, the forecast cost of gas is required for the calculation of FEI's annual revenue requirement over the test year of each Annual Review.

With regard to the CMAE costs, FEI has been filing for approval of the CMAE budget as part of its Annual Review process during the Current MRP term. Prior to that time, FEI submitted its annual CMAE budget for approval in its fourth quarter Gas Cost Reports.

The change in approach to filing the CMAE budget arose from BCUC Decision and Order G-79-14. In that decision, the BCUC directed FEI to include the CMAE budget in its revenue requirement applications, commencing in 2020 (i.e., after the conclusion of the 2014-2019 PBR Plan term). The BCUC stated (on page 10):

> The Panel acknowledges FEI's request to submit the CMAE budgets with the fourth quarter gas cost reports. However, the Panel is concerned that if the CMAE Budget is submitted at the same time, the Commission would have insufficient time to properly review the CMAE Budget. Further, the Panel finds that the appropriate review process for the CMAE Budget is as part of the FEI revenue requirements applications.

Further, in the FEI Annual Review for 2020 and 2021 Delivery Rates Decision and Order G-319-20 (page 16), the BCUC stated:

> The Panel directs FEI to include, in its next revenue requirements or MRP application following the MRP term, a comprehensive review of the CMAE costs including consideration of whether these costs are conducive to a formulaic approach or whether they should continue to be forecast with flow-through treatment, and whether the current allocation percentages to the CCRA and MCRA remain appropriate.

The comprehensive review directed by the BCUC in the 2020-2021 Annual Review Decision is included in Appendix C4-3 of the Application.

FEI has at various times in the past included the CMAE budget review separately (2006-2009 and 2014-2019) or as part of (2010-2013 and during the Current MRP) its rate-setting applications.

With the most recent direction from the BCUC in the 2020-2021 Annual Review Decision, FEI has taken the opportunity to complete a comprehensive review of the CMAE costs and, based on this review, FEI has concluded that: (1) forecasting the CMAE costs annually (as opposed to applying a formulaic approach) continues to be the most appropriate approach; and (2) the review of the annual CMAE costs is most appropriately undertaken as a separate application filed at or near the same time that FEI files its third quarter gas cost reports (Q3 Gas Cost Reports).

First, FEI clarifies how variances in CMAE costs are currently treated, because FEI believes that there may be some confusion as to what "flow-through" treatment means in the context of CMAE costs, and this confusion may have bearing on the BCUC's assessment of how to treat the CMAE costs going forward. While the CMAE costs were forecast annually as part of the Annual Reviews during the Current MRP, the variances in CMAE costs are not subject to "flow-through treatment" in the way that this term is used in the Annual Reviews. Since CMAE costs form part of commodity and midstream rates, and not delivery rates, variances are not captured in the Flow-through

deferral account. Variances are instead captured in FEI's commodity and midstream rates. This distinction is important because, if the CMAE costs were to be moved to form part of FEI's Base O&M (and thus be subject to the annual indexed-based formula), variances between forecast and actual costs would impact the earnings sharing mechanism, yet these costs are in reality being recovered through commodity and midstream rates. This creates a disconnect between the impact the variances would have on delivery rates (i.e., through the ESM) and the method by which the actual costs are being recovered.

Second, FEI's delivery rates do not include any gas costs (including any midstream costs), and the Annual Review process makes no other requests related to FEI's gas costs or gas cost related charges. Therefore, FEI submits that the Annual Review process is not the appropriate forum to review the CMAE costs and that these costs should be reviewed at the same time that the other gas cost items are reviewed. However, FEI acknowledges the BCUC's previous concern that including the CMAE budget in the fourth quarter gas cost report (Q4 Gas Cost Report) did not provide enough time to review the budget, as the Q4 Gas Cost Report is typically filed with the BCUC in the latter part of November. To address this issue, FEI proposes to file the CMAE budget at or near the same time as the Q3 Gas Cost Report, which is typically filed in early September. This will allow adequate time for the annual CMAE budget to be reviewed and approved prior to the end of the year.

Accordingly, FEI seeks approval to continue to forecast the CMAE budget annually, but to file the budget for review as a separate application at or near the same time as the Q3 Gas Cost Reports. Please refer to Appendix C4-3 for a detailed explanation of FEI's proposals regarding CMAE.

4.3.2 Power Supply (FBC)

FBC's power supply cost includes power purchase expense, wheeling expense, and water fees. In addition to cost variances, load variances due to customer growth, usage, or weather also contribute to variances in power purchase expense.

FBC will continue to forecast power supply costs each year and include this forecast (in the same format) in the Annual Reviews. Further, FBC proposes to continue recording variances between forecast and actual power supply costs in the Flow-through deferral account.

4.4 *OTHER REVENUE*

The Companies will continue to forecast Other Revenue each year in the Annual Reviews during the term of the Rate Framework and will include discussions of each of the items consistent with the approach in the Annual Reviews during the Current MRP term. Components of Other Revenue that currently have deferral account treatment are:

- FEI's NGT Tanker Rental Revenue and CNG & LNG Service Revenue;
- FEI's earned return and income tax expenses for the cost of service of FEI's biomethane assets;

- FEI's Southern Crossing Pipeline Third Party Revenue; and
- FBC's carbon credits for the EV DCFC service.

FortisBC proposes to continue this treatment, with the variances in the remaining components of Other Revenue continuing to result in variances in earnings and being shared through the earnings sharing mechanism.

4.4.1 Late Payment Charges

In the FEI 2024 Annual Review Decision (pages 10-11), the BCUC stated the following:

> …variances between forecast and actual Late Payment Charges are not subject to flow-through treatment, so that any variances between forecast and actuals become subject to earnings sharing between shareholders and ratepayers on a 50/50 basis under the MRP and may, therefore, be perceived as susceptible to under-forecasting of these revenues on that basis, even though there is no evidence to that effect in this proceeding. To address this concern, **the Panel directs FEI to evaluate the impacts of alternative methodologies for forecasting Late Payment Charges, including forward-looking approaches (e.g., as a function of projected revenue or customer bills) and backward-looking approaches (e.g., the current two-year versus prior three-year historical average basis) as part of its next revenue requirements application.**

Starting in FEI's and FBC's Annual Reviews for 2023 Rates, the Companies changed their approach to forecasting late payment charges. This revised approach uses the average of the previous year's actual late payment charges and the current year's projected late payment charges. Previous to the 2023 Annual Reviews, the Companies used the three-year average of historical actuals.

The primary reason for the change in forecasting approach was that in recent years, factors such as the COVID-19 pandemic, the implementation of customer relief measures, and ongoing inflationary impacts, had resulted in the historical results prior to the 2021/2022 timeframe not providing an accurate representation of the expected future late payment charges. Therefore, to account for the changes (i.e., increases) in late payment charges being experienced, both FEI and FBC shortened the historical timeframe used to calculate the forecast so that the forecast was based on the more recent and relevant years.

Tables C4-5 and C4-6 below show the approved and actual late payment charges for both Companies from 2020 to 2023 as well as the 2024 Approved late payment charges.

Table C4-5: FEI Late Payment Charges ($000s)[120]

FEI	2020	2021	2022	2023	2024
Approved	$ 1,683	$ 2,968	$ 2,719	$ 3,385	$ 3,607
Actual	822	2,635	3,638	3,863	
Variance	**(861)**	**(333)**	**919**	**478**	

Table C4-6: FBC Late Payment Charges ($000s)

FBC	2020	2021	2022	2023	2024
Approved	$ 205	$ 829	$ 875	$ 994	$ 962
Actual	203	892	962	895	
Variance	**(2)**	**63**	**87**	**(99)**	

As Table C4-5 above shows, in the three years prior to FEI changing the forecasting approach, FEI over-forecast late payment charges in two of the years; however, in 2022 the under forecast was more significant. The under-forecast was due to FEI using three years of actual results that were prior to the COVID-19 pandemic and other impacts previously discussed (i.e., 2018, 2019 and 2020). For 2023 (i.e., the first year using the revised forecasting approach), the actual late payment charges were still less than the approved, but the under-forecast was much less significant.

With regard to FBC, the actual results have been both higher and lower over the Current MRP term, though the Company notes that the result in 2023 using the revised forecasting approach is an over forecast, not an under forecast (thus the opposite of the concern stated by the BCUC in the FEI 2024 Annual Review Decision).

Further, had FortisBC continued to use the previous method (i.e., 2024 forecast based on 2020, 2021, and 2022 Actuals), then the 2024 forecasts for both FEI and FBC would have been significantly lower (FEI's forecast would be $2.365 million and FBC's forecast would be $0.686 million). FortisBC does not consider these amounts to be a reasonable forecast for 2024, as they are significantly lower than the 2023 Actuals.

Even though the economic impacts of the COVID-19 pandemic have dissipated, FortisBC considers that its current approach for both Companies remains appropriate because it excludes historical years where peak pandemic and inflationary impacts likely influenced late payment charges. At least in the near term, FortisBC anticipates that there may be continued volatility in late payment charges and, as such, the appropriate approach to forecasting is to use the most recent actual and projected results. The current forecasting approach, which uses the most recent information available, will ensure the latest upward or downward trends in the late payment charge revenue is accounted for. This holds true whether the cause of the trend is due to the general

[120] FEI's Late Payment Charges include Fort Nelson for consistency, as Fort Nelson was approved for common rates with FEI commencing in 2023.

economy or factors more specific to gas and electric customer bills such as higher usage or carbon tax changes.

FortisBC also considered a forward-looking approach such as using a percentage of the projected revenue for the forecast year to forecast the late payment charges, as suggested by the FEI 2024 Annual Review Decision. However, FortisBC could not find an observable trend between the actual late payment charges and the projected revenue that would suggest this method is reasonable.

Considering the above, FortisBC considers its current forecasting approach for late payment charges continues to be the most reasonable. At the conclusion of the three-year Rate Framework period, with the benefit of additional years of actual results using this revised forecasting approach, FEI and FBC will assess whether a different forecasting approach should be used.

4.5 *O&M*

FortisBC's O&M under the Rate Framework will continue to include both formula and forecast components. Please refer to Section C2 for details of FEI's and FBC's O&M over the three-year term of the Rate Framework.

As part of the Annual Review process, FortisBC will continue to calculate formula O&M by adjusting the previous year's Base O&M amount for the inflation factor, productivity factor and customer growth, which are discussed in Sections C1.3 through C1.5. Variances in formula O&M will result in variances in earnings and will be shared through the earnings sharing mechanism.

For those items which are forecast on an annual basis, FEI and FBC will continue to include appropriate discussion of each of the items in the Annual Reviews. FortisBC will also continue to capture the variances between forecast and actual amounts in the Flow-through deferral account, as discussed in Section C4.13.2, or through other approved deferral accounts.

4.6 *RATE BASE*

FEI's and FBC's rate base is comprised of the mid-year net plant in service of each utility, construction advances, work-in-progress not attracting AFUDC, unamortized deferred charges, working capital, deferred income taxes, and other utility plant adjustments.

The mid-year net plant in service component of rate base is increased by capital additions that result from ongoing capital expenditures and is reduced by accumulated depreciation. The treatment of Regular capital expenditures and Major Capital expenditures is discussed in Section C3 of the Application, where forecasts for FEI's Regular Sustainment and Other capital expenditures and FBC's Growth, Sustainment and Other capital expenditures are also provided. FEI's Regular Growth capital formula is also discussed. As discussed in that section, variances in Regular capital expenditures (other than flow-through capital expenditures) will result in earnings variances that are subject to the earnings sharing mechanism.

The other components of rate base listed above will continue to be forecast each year as part of the Annual Review process under the Rate Framework.

FEI and FBC will also continue to propose any new deferral accounts to be included in rate base as part of the Annual Review process, and the Companies have included a summary of their currently approved deferral accounts in Appendices C4-4 (FEI) and C4-5 (FBC).

4.7 *DEPRECIATION AND AMORTIZATION*

Annual depreciation expense will continue to be based on the approved depreciation rates[121] and the opening plant account balances which include plant additions consistent with both the forecast Regular capital expenditures and (for FEI) the formula-based Growth capital expenditures, as well as any Major Capital projects approved for inclusion in rate base.

Amortization of deferrals will also continue to be forecast each year as part of the Annual Review process with the actual amortization expense each year equal to the approved amount. FEI and FBC will also include the amortization of any proposed new deferral accounts.

4.8 *FINANCING AND RETURN ON EQUITY*

In each Annual Review, FEI and FBC will calculate their respective revenue requirements based on the deemed equity component and allowed return on equity (ROE) approved by the BCUC. The current deemed equity component and allowed ROE were determined by the BCUC in Decision and Order G-236-23, dated September 5, 2023, as part of Stage 1 of the Generic Cost of Capital (GCOC) proceeding, as follows:

- **FEI:** a deemed equity component of 45.0 percent and an allowed ROE of 9.65 percent; and
- **FBC:** a deemed equity component of 41.0 percent and an allowed ROE of 9.65 percent.

During the term of the Rate Framework, if the BCUC approves any changes to the deemed equity component and allowed ROE, FortisBC will incorporate these revised rates such that there is no variance in the revenue requirement associated with the return on equity.

Regarding the financing costs, FortisBC will continue to forecast short-term and long-term interest rates and interest expense for the test year as part of the Annual Review process. Interest expense is largely outside of the Companies' control, and interest rate variances have historically been subject to deferral account treatment (either through a specific Interest Variance deferral account or the Flow-through deferral account). Debt capital markets are dynamic and volatile, changing constantly to reflect current and expected economic conditions and government monetary and fiscal policy. While FortisBC takes appropriate measures to develop a forecast of

[121] FEI and FBC have completed updated depreciation studies and have proposed updated depreciation rates in Section D2 of the Application.

interest rates, it has no control over actual interest rates and, therefore, little control over the forecasting risk that is associated with interest rates. During the term of the Rate Framework, FortisBC proposes to continue its existing treatment of capturing variances in interest rates, volumes, and timing of issuances on long-term debt, as well as variances in interest rates for short-term debt, in the Flow-through deferral account.

4.9 *PROPERTY TAXES*

Property taxes are forecast annually, and any variances are adjusted to actual at the end of the year through the Flow-through deferral account. Property taxes are driven primarily by legislation, market values of properties and/or changes in tax policies and are outside the control of the Companies. FortisBC proposes to continue this treatment over the term of the Rate Framework.

4.10 *INCOME TAXES*

Each year, FortisBC will forecast income taxes, based on currently enacted income tax rates. These rates are outside of the Companies' control, and variances have historically been subject to deferral account treatment (either through a specific Income Tax Rate variance deferral account or through the Flow-through deferral account). FortisBC has no control over whether governments change the income tax rates or laws subsequent to submitting revenue requirement forecasts to the BCUC for approval. Governments have previously made changes to tax laws and income tax rates, which have led to variances from income taxes approved for rate-setting purposes. For the Rate Framework, FortisBC proposes to continue the treatment of capturing variances in income tax rates and any underlying changes to tax laws or legislation that impact the calculation of income tax expense or income tax rates in the Flow-through deferral account.

4.11 *EARNING SHARING AND RATE RIDERS*

Each year, FortisBC will continue to calculate the earnings sharing proposed to be distributed to or recovered from customers based on 50 percent of the variances from the allowed rate of return on equity, as discussed in Section C1.7.

Furthermore, in the case of FEI, the Annual Reviews will continue to include calculations of the delivery and other rate riders approved by the BCUC, which currently include:

- The Storage & Transportation Renewable Natural Gas (S&T RNG) Rate Rider;[122]
- The RSAM Rate Rider; and
- The Fort Nelson Residential Customer Common Rate Phase-in Rate Rider.

[122] The S&T RNG Rate Rider will begin, and the Biomethane Variance Account (BVA) Rate Rider will discontinue, effective July 1, 2024.

FEI is also proposing a new Clean Growth Innovation Fund (CGIF) and to continue with its associated basic charge rate rider, which are discussed in Section C5. Consistent with the Current MRP, FEI will continue to provide progress reports on the operation and progress of its CGIF in each Annual Review.

4.12 *EXOGENOUS FACTORS*

As discussed in Section C1.6, and consistent with the Current MRP, FortisBC will continue to identify exogenous factor events that have occurred or that are forecast to occur during the term of the Rate Framework as part of the Annual Review process. In this way, the cost-of-service impacts caused by exogenous factors that are beyond the control of the Companies will be included in customers' rates. Exogenous factor treatment of such amounts will ensure that customers pay only for the actual costs in circumstances where FEI or FBC does not control the level of expenditures.

4.13 *NON-RATE BASE DEFERRAL ACCOUNTS*

FortisBC maintains both rate base and non-rate base deferral accounts. Rate base deferral accounts are included in rate base as discussed in Section C4.6 above, earning a rate base return. In contrast, non-rate base deferral accounts are outside of rate base and, subject to BCUC approval, attract a weighted average cost of capital (WACC) return (which is equal to a rate base return).

FortisBC is not proposing any changes to its existing deferral accounts in this proceeding, other than as discussed below. Any other necessary changes will be proposed through the Annual Review process. FortisBC discusses the CGIF deferral account and the Flow-through deferral account below.

4.13.1 Clean Growth Innovation Fund Deferral Account (FEI)

FEI is proposing an enhanced CGIF for the term of the Rate Framework. Please refer to Section C5 for further details.

As part of the administration of the CGIF, FEI proposes to continue using the existing approved CGIF deferral account during the term of the Rate Framework. However, as discussed in Section C5, FEI is proposing to return the unused balance of the funds collected during the Current MRP term in 2025.

Consistent with the Current MRP, the CGIF will be funded by customers in the form of a rider on the basic charge at $0.40 per customer per month so that all of FEI's customers will fund innovation equally. The amounts collected from customers will be recorded as credits in the deferral account. The expenditures (funding provided by FEI) will be recorded in the deferral account as debits. The deferral account balance will not be trued up each year but rather will continue through the term of the Rate Framework with a commitment by FEI to not spend more

than collected over the term of the Rate Framework. The deferral account will continue to be non-rate base attracting a WACC rate of return. At the end of the Rate Framework, the unused balance in the deferral account will be returned to customers.

4.13.2 Flow-Through Deferral Accounts (FEI and FBC)

FEI and FBC are proposing to continue using their existing Flow-through deferral accounts during the term of the Rate Framework. The existing Flow-through deferral accounts were approved in the MRP Decision: “The Panel approves the continuation of the general Flow-through deferral account for the MRP term of 2020 through to 2024...”

The Flow-through deferral accounts will continue to capture the annual variances between the approved and actual amounts for costs and revenues that are included in rates on a forecast basis with flow-through treatment approved (with the exception of those that have separate deferral account treatment).

Please refer to Table C4-7 below for the specific items proposed to be included in the Flow-through deferral accounts and those that will be subject to earnings sharing treatment during the term of the Rate Framework.

Table C4-7: Treatment of Variances in Revenue Requirement Items from Forecast

	FEI	FBC
Delivery Revenues (FEI):		
Residential and commercial use rate variances	RSAM	N/A
Customer variances	Flow-through deferral	N/A
Industrial and all other revenue variances	Flow-through deferral	N/A
Revenues and Power Supply (FBC):		
Revenue variances	N/A	Flow-through deferral
Power Supply variances	N/A	Flow-through deferral
Gross O&M:		
Index-based O&M variances	Subject to earnings sharing	Subject to earnings sharing
BCUC fees variances	BCUC variances deferral	BCUC variances deferral
Pension & OPEB variances	Pension/OPEB variances deferral	Pension/OPEB variances deferral
All other O&M variances [1,3]	Flow-through deferral	Flow-through deferral
Capitalized Overhead:		
Capitalized overhead variances	No variance	No variance
Depreciation and Amortization:		
Depreciation rate variances	No variance	No variance
Depreciation on Clean Growth Projects[2,3]	Flow-through deferral	Flow-through deferral
Depreciation on CPCNs/Exogenous items	Flow-through deferral	Flow-through deferral
Other depreciation variances	Subject to earnings sharing	Subject to earnings sharing
Amortization of deferrals	No variance	No variance
Property Tax:		
Property tax variances	Flow-through deferral	Flow-through deferral
Other Revenues :		
SCP Mitigation revenues variances	SCP Revenues deferral	N/A
CNG/LNG Recoveries variances	CNG/LNG Recoveries deferral	N/A
Revenues from Clean Growth Projects[2,3]	Flow-through deferral	Flow-through deferral
Revenues from CPCNs/Exogenous items	Flow-through deferral	Flow-through deferral
All other other revenue/income variances	Subject to earnings sharing	Subject to earnings sharing
Interest Expense/Cost of Debt:		
Interest on RSAM/CCRA/MCRA/Gas storage	Interest on RSAM/CCRA/MCRA/Gas Storage	N/A
Interest rate/timing variances	Flow-through deferral	Flow-through deferral
Interest on Clean Growth Projects[2,3]	Flow-through deferral	Flow-through deferral
Interest on CPCNs/Exogenous items	Flow-through deferral	Flow-through deferral
Other interest variances	Subject to earnings sharing	Subject to earnings sharing
Income Tax:		
Income tax variances due to changes in tax rates/laws	Flow-through deferral	Flow-through deferral
Income tax on Clean Growth Projects[2,3]	Flow-through deferral	Flow-through deferral
Income tax on CPCNs/Exogenous items	Flow-through deferral	Flow-through deferral
Other income tax variances	Subject to earnings sharing	Subject to earnings sharing

1: Including items forecast outside of the formula such as insurance premiums, NGT stations, renewable and low carbon gas initiatives (biomethane service and renewable gas development), variable LNG production, integrity digs, AMI project, EV charging stations, MRS triennial audits, and MRS assessment reports.

2: Cost of service for NGT fueling stations and tankers, variable LNG production, Methane Emission Mitigation, and EV DCFC stations will be captured in the Flow-through deferral account.

3: Biomethane other revenues will continue to capture the actual cost of service of the biomethane capital assets and transfer it to the BVA.

4.14 *SUMMARY*

Over the term of the Rate Framework, FEI and FBC will continue to prepare their respective annual revenue requirements for the cost and revenue items described in this section. The components that make up FEI's and FBC's annual revenue requirements will largely remain the same as in the Current MRP. FortisBC is also proposing to continue the approved treatment of capturing the majority of the variances between forecast and actuals in a single Flow-through deferral account, and as discussed in Section C5, FEI is proposing to continue with the CGIF deferral account. The items proposed to be treated as flow-through are identified in Table C4-7 above.

FortisBC is proposing to continue with its current forecasting methods for both FEI and FBC. As demonstrated in Section C4.2, the current forecasting methods for both utilities have consistently produced accurate results for the purpose of setting rates annually. As discussed in Section C1.10, FortisBC is requesting that the load/demand forecasting methods for setting rates in the Annual Reviews be approved for the term of the Rate Framework and that these methods be out of scope in the Annual Reviews.

Additionally, FEI performed a comprehensive assessment of the CMAE budget, as described in Section C4.3.1 and in Appendix C4-3. Based on this assessment, FEI seeks approval to continue to forecast the CMAE budget annually, but to file the budget for review as a separate application at or near the same time as the Q3 Gas Cost Reports.

5. FEI CLEAN GROWTH INNOVATION FUND

5.1 INTRODUCTION

The importance of the clean energy transition, supported by policy direction from all levels of government, has amplified the urgency for innovation and the adoption of new technologies in the energy sector to advance decarbonization. Recognizing this imperative, FEI is seeking to renew and enhance the Clean Growth Innovation Fund (CGIF) to expedite clean energy innovation. The CGIF supports the CleanBC goal of decarbonization by advancing innovative technologies that will help FEI reduce GHG emissions for its customers and support the transition to a lower carbon economy while optimizing the use of its gaseous energy delivery system for the benefit of its customers.

As detailed in this section, FEI is proposing to continue the CGIF for the Rate Framework term to support the clean energy transition along the gas value chain with specific enhancements, including a broader focus on cost mitigation and an additional criterion for resilience. In particular, the proposed enhancements to the CGIF will support and advance British Columbia's clean energy transition by investing in solutions that will reduce GHG emissions in the Province while mitigating costs for customers. Continuation of the CGIF will also continue the acceleration of clean energy innovation by helping to achieve performance breakthroughs and cost reductions on emerging technologies, while providing cost effective, safe, and reliable solutions for FEI's customers. This section is organized as follows:

- Section C5.2 reviews the current CGIF;
- Section C5.3 sets out FEI's CGIF proposals for the Rate Framework term; and
- Section C5.4 discusses the proposed administration process for the CGIF.

5.2 THE 2020 CGIF

The MRP Decision and Orders G-165-20 and G-166-20 approved the CGIF for FEI (the 2020 CGIF) and denied the CGIF for FBC. The BCUC denied FBC's proposed CGIF based on a limited scope of identified innovations (electricity storage and medium and heavy-duty electric vehicle charging) and insufficient funding ($2.5 million over five years) to make a meaningful contribution to the scope that was identified.

Conversely, the BCUC approved FEI's request to establish a CGIF, stating:

> In contrast to FBC, FEI needs to step up its innovation efforts in order to meet the ambitious targets pertaining to renewable gas outlined in the CleanBC Plan. As already noted, the focus on decarbonization and electrification increases FEI's risk profile as a gas utility. Greater innovation efforts are needed within FEI if natural gas is to remain a viable fuel in the long term in light of those climate objectives.

FEI has explained that existing gaps in its innovation funding remain unfilled, which its Innovation Fund is designed to address.

On August 1, 2020, subsequent to the MRP Decision, FEI began collecting a $0.40 per month per customer bill CGIF rider from its customers. FEI expects to collect approximately $5.229 million in 2024 based on the forecast average non-bypass customer count for 2024.

In finding that it was reasonable and in the public interest for FEI's customers to bear the cost of the 2020 CGIF, the BCUC identified the following benefits for customers:

- Improving gas pipeline inspections and reducing inspection costs;
- Providing cleaner and more affordable energy sources;
- Mitigating the risk of future rate increases; and
- Ensuring the long-term viability of the gas utility by reducing the risk of stranded assets through the development of new technologies.

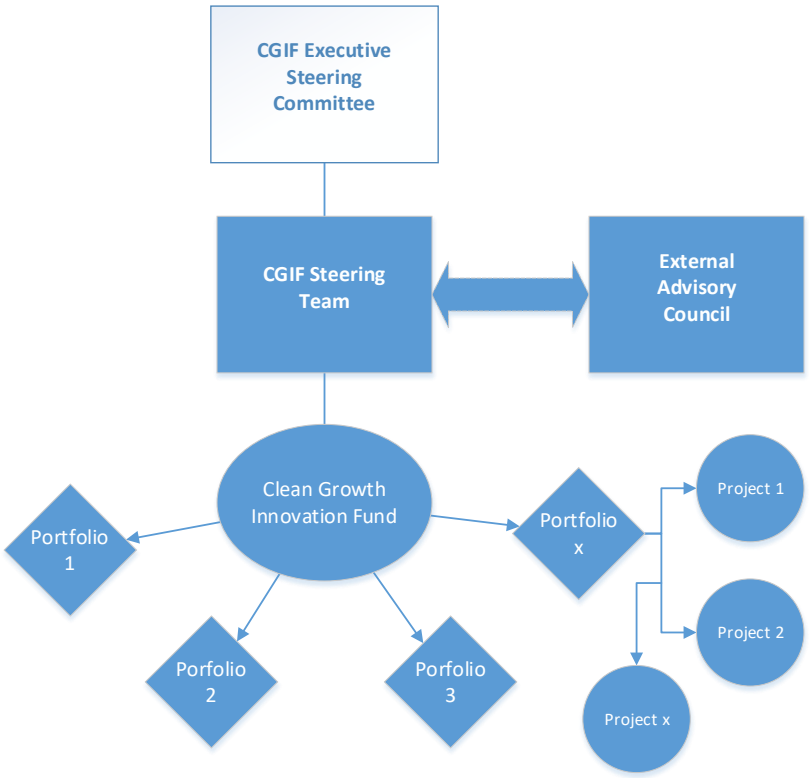
Over the term of the Current MRP, grants from the 2020 CGIF have been primarily directed toward bullets two and four: decarbonizing the gas value chain.

In the sections below, FEI reviews the underlying governance model of the 2020 CGIF, overall and application-specific expenditures during the Current MRP term (including the surplus to be returned to customers), and the fund's performance to date.

5.2.1 The Existing Governance Model Has Worked Effectively During the Current MRP Term

The governance processes established for the 2020 CGIF have been effective and contributed to the overall success of the fund in accelerating the pace of clean energy innovation. FEI established groups to review innovative proposals and provide recommendations for the 2020 CGIF, as shown in the figure below.

Figure C5-1: CGIF Governance Structure



Proposed projects are generally grouped together into portfolios to streamline the review process. To date, CGIF portfolios have contained between 1 and 25 proposals. CGIF portfolios are first reviewed by subject matter experts from throughout the Company. The recommendations of the Company's subject matter experts are reviewed by the CGIF Steering Team (CGIF-ST) and are either approved or rejected. Some proposals are approved by the CGIF-ST with conditions. The CGIF-ST is comprised of FEI senior managers that provide leadership to a variety of departments that are key to assessing the technical and business aspects of the portfolio proposals.

Proposals recommended by the Company's subject matter experts are presented to the External Advisory Council (EAC) for input and comment that will support final portfolio approvals. The input and comments from the EAC are considered throughout the decision process. The EAC currently includes representatives from the following stakeholders:

- MoveUP;
- BCSEA;
- BC Ministry of Energy, Mines and Low-Carbon Innovation;
- Foresight Cleantech Accelerator Centre;
- BC Bioenergy Network; and
- University of Victoria.

The EAC and each of the internal groups discussed above (i.e., the subject matter experts and CGIF-ST) generally meet once per CGIF portfolio cycle to review proposals against the following five 2020 CGIF criteria:

1. Amount of co-funding secured (from applicant and third parties);
2. Estimated carbon dioxide-equivalent (CO2e) reduction in British Columbia;
3. Estimated non-CO2e emission reduction (NOx, Sox) in British Columbia;
4. Estimation of energy cost reductions for customers; and
5. Relevant experience of the applicant project team.

Criteria 1 and 5 require subjective assessments of CGIF applications, which are tested and validated as part of the governance processes. Of the objective criteria, 2, 3 and 4, most of the CGIF grants approved to date have addressed criterion 2 directly (and often criteria 3 and 4 directly or indirectly), with the majority of funding approved related to production, distribution and end-use of gaseous fuels.

The CGIF Executive Steering Committee (ESC) is the final stage of portfolio review and is responsible for: (1) making a final decision regarding which projects, if any, within a given portfolio are approved; and (2) providing overall strategic direction over 2020 CGIF expenditures. The ESC reviews each portfolio with the benefit of recommendations and summaries of the commentary received from FEI subject matter experts, the CGIF-ST and the EAC to determine whether a project should be approved.

5.2.2 Unused CGIF Funds will be Returned to Customers

Table C5-1 below shows the amounts FEI expects to collect from customers, as well as the amounts expended and committed for 2020 CGIF projects, since the fund's inception in 2020 to the end of 2024. By the end of 2024, FEI expects to collect $22.827 million from customers and will have spent or committed to spend $16.895 million in grant approvals. This will leave a projected surplus in the CGIF deferral account of approximately $5.810 million.

Table C5-1: Clean Growth Innovation Fund 2020-2024[123] ($ millions)

	Actual 2020	Actual 2021	Actual 2022	Actual 2023	Projected 2024	Total
Portfolio Approvals	**$ 1.500**	**$ 2.200**	**$ 1.526**	**$ 4.169**	**$ 7.500**	**$ 16.895**
Opening Balance	**$ -**	**$ (0.791)**	**$ (3.816)**	**$ (7.186)**	**$ (10.510)**	**$ -**
Funding collected	(2.099)	(5.093)	(5.176)	(5.230)	(5.229)	(22.827)
Expenditures	1.022	1.127	0.972	1.431	6.867	11.419
Accrued committed					5.476	5.476
Tax	0.291	1.071	1.135	1.026	(1.920)	1.603
Financing	(0.005)	(0.130)	(0.301)	(0.551)	(0.494)	(1.481)
Closing Balance	**$ (0.791)**	**$ (3.816)**	**$ (7.186)**	**$ (10.510)**	**$ (5.810)**	**$ (5.810)**

As part of the MRP Decision, the BCUC directed "any unused balance in the deferral account to be returned to customers at the end of the Proposed MRP term through a disposal mechanism subject to approval by the BCUC". Accordingly, as part of this Application, FEI proposes to return the ending balance in the deferral account, currently projected at $5.810 million, through amortization of the deferral account over one year (i.e., in 2025).

5.2.3 Expenditures Supported Multiple Applications

As shown in Table C5-1 above, annual CGIF approvals and spending both increased throughout the term of the Current MRP. This acceleration in approvals and spending is due to a number of factors, including:

1. **Necessary Ramp-Up Period Delayed 2020 CGIF Expenditures:** After the 2020 CGIF was approved by the BCUC in June 2020, time was needed to establish the governance and representation, reporting, and relationships that enabled projects to be brought forward and reviewed. The number of partner relationships and degree of awareness of the CGIF continued to grow throughout the term of the Current MRP.

2. **Increased Funding Requests Supporting GHG Reductions:** The number of funding requests for projects that support the GHG emissions reduction CGIF criteria has steadily increased since the 2020 CGIF was implemented. For example, FEI's latest round of projects evaluated through the Natural Gas Innovation Fund's (NGIF) Global Cleantech Challenge (a collaboration with the International Gas Union to encourage clean technology innovators from around the world to access grant funding, demonstration host partners and technology validation for customers in Canada) received a record 55 proposals.

[123] The amount shown as "Accrued committed" in the table is for multi-year initiatives where CGIF contributions are tied to specific project milestones where the commitment has been made but the amounts will not have been paid by the end of 2024.

3. **Increased Funding Requirements as Projects Progressed Toward Commercialization:** As the Technology Readiness Level (TRL) of projects increase, so too does the funding required to continue development and reach full-scale commercialization. These higher funding requirements accelerated overall spending later in the Current MRP term.

4. **Collaboration with Other Organizations to Identify New Projects and Technologies:** By increasingly collaborating with other funding organizations, FEI has been able to identify additional projects and technologies that may qualify for CGIF funding. For example, FEI has established new relationships with organizations such as the Centre for Innovation and Clean Energy and Foresight and Carbon Management Canada and has launched challenges targeted at identifying proponents and solutions that meet the CGIF funding criteria.

FEI has provided grant funding through the 2020 CGIF for innovations along the gas value chain. The gas value chain comprises the following application areas: (1) production; (2) distribution; and (3) end-use. FEI describes each application area below:

1. **Production:** related to creating renewable, low-carbon hydrogen, RNG and syngas for distribution through the gas network or direct end-use near the production facility. This area is described further in Section C5.2.3.1 below.
2. **Distribution:** focus on accommodating renewable hydrogen in the existing gas system. This area is described further in Section C5.2.3.2 below.
3. **End-use:** focus on more effective uses of energy and the ability to use renewable fuels (with a specific category for transportation), creating hybrid energy systems that efficiently use both gaseous fuels and electricity. This area is described further in Section C5.2.3.3 below.

FEI has also provided grant funding through the 2020 CGIF for carbon capture, utilization and storage (CCUS) and generalized low-carbon investments, which are described in further detail in Sections C5.2.3.4 and C5.2.3.5, respectively, below.

Table C5-2 below shows the total approved grants from the 2020 CGIF up to the end of 2023 for each application and sub-application.

Table C5-2: 2020 CGIF Approved Investment by Application 2020-2023 ($ millions)[124]

Application	Sub-Application	Portfolio Approvals
Production	Renewable Hydrogen	2.483
	Renewable Natural Gas	1.514
	Renewable Syngas	0.344

[124] The total approved amount of $9.395 million equals to the Portfolio Approvals up to the end of 2023 (i.e., the sum of the Portfolio Approvals line for 2020, 2021, 2022 and 2023 in Table C5-1).

Application	Sub-Application	Portfolio Approvals
	Subtotal	**4.341**
Distribution	Renewable Hydrogen	**0.500**
	Subtotal	**0.500**
End-Use	Renewable Hydrogen	0.407
	Hybrid Systems	0.280
	Renewable Natural Gas	0.125
	Subtotal	**0.813**
Carbon Capture	End-Use	0.469
	Storage	0.600
	Subtotal	**1.069**
General Low-Carbon	General Initiatives	**2.672**
	Subtotal	**2.672**
TOTAL		**9.395**

These five application categories are detailed below.

5.2.3.1 Production (Upstream)

The majority of the grant funding approved through December 31, 2023 under the 2020 CGIF ($4.341 million) has been for production applications, including investments related to the production of renewable and low-carbon gases for use in FEI's gas distribution network or for direct consumption by larger customers. These renewable and low-carbon gaseous fuels support FEI's and provincial CleanBC decarbonization objectives by providing customers with renewable and low-carbon fuels, thereby reducing GHG emissions.

The 2020 CGIF has provided grant funds for novel methods of producing renewable, low-carbon hydrogen in two ways: electrolysis and pyrolysis. Electrolysis requires water and low-carbon electricity and produces hydrogen by splitting water into hydrogen and oxygen molecules. Pyrolysis produces low-carbon hydrogen by "cracking" methane and other hydrocarbons (the main component of natural gas) into hydrogen and solid carbon.

To date, the 2020 CGIF has approved grant funds to multiple renewable hydrogen production projects. One example is the Vancouver-based start-up company Ekona which makes a novel non-catalytic pulse methane pyrolysis system for low-cost, clean, hydrogen production using natural gas as a feedstock, and with a solid carbon by-product. Funding from the 2020 CGIF (along with other funding) allowed the company to build a proof-of-concept reactor in 2021 and to complete the commissioning of a brassboard system reflecting the final operational product system in 2023. Developments thus far have resulted in Ekona receiving $79 million in equity

investments from a diverse set of investors, further accelerating the commercialization of this low-carbon hydrogen production system.

In addition, the 2020 CGIF has provided grant funds for organizations that are advancing the production of low-carbon RNG (or biomethane). These expenditures have been focused on two primary areas: (1) improving the efficiency of existing RNG production facilities; and (2) expanding the range of feedstocks from which RNG can be created. FEI provides an example of each focus area below.

- **Improved Efficiency of Existing RNG Production Facilities:** The 2020 CGIF has provided funding for Metro Vancouver's effort to develop technology that will boost the methane content of RNG produced by anaerobic digestion at their wastewater treatment plants. If successful, this innovation could be adapted for use in other anaerobic digestors producing RNG.
- **Expansion of RNG Feedstocks:** The 2020 CGIF has partially funded G4 Insight's PyroCatalytic Hydrogenation (PCH) reactor. G4 Insights is a company focused on developing and commercializing proprietary PCH technology to convert forestry and agricultural crop waste into RNG. The 2020 CGIF funding will enable the company to build on this work and increase the plant scale by a factor of 10. Biomass from waste wood is the largest potential feedstock for producing renewable gases that has yet to be tapped.

  The 2020 CGIF has also granted funding to a BC-based company and an Interior pulp mill to scale-up a technology to create low-carbon syngas from wood waste and displace conventional natural gas use in the existing lime kiln. If successful, the syngas produced would eliminate the CO_2e emissions associated with the combustion of conventional natural gas at the mill. Excess syngas production could be converted to RNG to export via the existing natural gas pipelines serving the pulp mill, increasing renewable and low-carbon gas supply for FEI's customers.

5.2.3.2 Distribution

As of December 31, 2023, the 2020 CGIF had approved grant funding for distribution applications of $0.500 million focused on accommodating hydrogen in the existing gas distribution system. As RNG is chemically similar to conventional natural gas, it does not require changes to existing gas distribution assets, unlike low-carbon hydrogen. The accommodation of low-carbon hydrogen in existing assets supports provincial CleanBC decarbonization objectives by providing customers with low-carbon gaseous fuels, thereby reducing greenhouse gas emissions.

The 2020 CGIF approved grant funding for the Hydrogen Lab, which has been established at UBC Okanagan and the University of Victoria. The Hydrogen Lab is providing valuable insights into seven specific areas which will support FEI as it moves toward blending low-carbon hydrogen into existing gas infrastructure (hydrogen-enriched natural gas or HENG).

- **Subproject 1:** Analytical modelling of injection and transmission of HENG.

- **Subproject 2:** Detonation and flammability of HENG.
- **Subproject 3:** Hydrogen embrittlement of metal alloys and welded joints.
- **Subproject 4:** Real-time portable sensing system for monitoring of HENG mixing and leak detection.
- **Subproject 5:** Machine learning-based modelling and design of an integrated HENG process control system based on simulation and operational data.
- **Subproject 6:** Effect of HENG on thermoacoustic oscillations (a combination of pressure change and heat transfer) and burning rate of partially premixed flames.
- **Subproject 7:** Separation of hydrogen gas from HENG.

Other projects to advance low-carbon hydrogen adoption are underway as part a separately funded broad provincial effort to assess and establish the feasibility of blending hydrogen into the provincial gas grid called the British Columbia Gas System Hydrogen Blending Study and Technical Assessment project. This effort, in partnership with the Ministry of Energy, Mines and Low Carbon Innovation and Enbridge Inc., will build upon knowledge gained through the CGIF Hydrogen Lab project to lead toward safe and efficient distribution of low-carbon hydrogen to FEI customers.

5.2.3.3 End-Use

As of December 31, 2023, the 2020 CGIF had approved grant funding for end-use applications of $0.813 million for the three sub-applications discussed in turn below: (1) HENG or hydrogen end-use product development; (2) hybrid system development; and (3) transportation.

First, funding approved for HENG and hydrogen-compatible end-use investments includes the development and testing of a 100 percent hydrogen compatible residential furnace by a Calgary-based company (as shown in Figure C5-2 below), as well as two investments in companies making HENG-compatible Combined Heat and Power (CHP) units for residential and small commercial deployments. CHP units can produce both electric power and heat, so they are both a low-carbon end-use product and a technology capable of mitigating peak demand and providing resilience in the electric system.

Figure C5-2: Prototype 100% Hydrogen Furnace

2020 CGIF grant funding was also provided for testing the installation of a CHP in a commercial building combined with solar panels and a custom control system. The system functioned well but the underlying costs were high. Continued reductions in technology costs are likely to favourably change the overall cost-effectiveness of these types of solutions.

Further, the 2020 CGIF funded a study initiated by the Greenhouse Growers' Association members and United Flower Growers members who rely heavily on the use of natural gas for the provision of heat and plant growth (currently accounting for approximately 12 percent of the cost structure for greenhouses). The grant for the study focused on evaluating decarbonization options and cost implications facing greenhouses, including:

- Low-carbon heating options, including RNG and associated reduced GHGs;
- Emerging technology review (including energy storage, heating, carbon capture, and conservation and efficiency);
- Lighting and heating, including examination of the use of CHPs for meeting heating loads and offsetting electricity costs;
- Heating decarbonization options (technology and fuel supply);
- GHG emissions including carbon capture and offsets;
- Hydrogen generation and CO_2 to produce synthetic methane;
- Carbon capture and use, as well as storage and sequestration; and
- Evaluation of the cost impacts and energy implications of HENG.

Finally, the 2020 CGIF provided grant funding for university research which assessed the GHG emission reductions from the use of natural gas/RNG instead of diesel and heavy marine fuel in marine engines.

All of the above end-use application projects have helped advance the understanding of innovative technologies and how they can help FEI's customers optimize their use of low-carbon fuels, supporting provincial CleanBC decarbonization objectives.

5.2.3.4 Carbon Capture

Carbon capture technologies provide a means of removing carbon dioxide before it is released into the atmosphere or when it is already in the atmosphere. In either case, funding from the 2020 CGIF supports CleanBC's objectives by providing a pathway to lowering GHG emissions in British Columbia. Approved grant funding for this applicable category total $1.069 million to the end of 2023.

Carbon capture grants are divided into two sub-categories: end-use and storage.

- End-use carbon capture expenditures focus on capturing and purifying carbon dioxide post-combustion. In some cases, the carbon dioxide is converted into other marketable products and in others the carbon dioxide is being selectively captured for permanent storage.
- Carbon capture storage grants focus on taking captured carbon dioxide and permanently transforming it into a non-GHG form, such as a mineral, or permanently storing it.

FEI provides an example of each sub-category below.

Funding was approved under the 2020 CGIF for an end-use carbon capture project being undertaken by a Calgary-based company developing modular, containerized carbon capture systems using patented membrane contactors to replace conventional spray towers and absorbers. The expected result of the project is a 30 percent increase in efficiency and a 50 percent reduction in absorber size, significantly decreasing carbon capture capital and operating costs. The company is currently raising capital for a significant expansion and transition to commercialization.

Funding was approved under the 2020 CGIF for two GeoscienceBC-led initiatives related to carbon capture storage. One is for a pilot project that will test the ability of certain rock formations to permanently mineralize (and therefore sequester) gaseous carbon dioxide, and the other is for a comprehensive geological study of the Georgia basin to assess the potential for permanent carbon storage. Work related to the pilot project and the study remains ongoing.

5.2.3.5 Generalized Low-Carbon

Another significant area of funding has been for generalized low-carbon applications, with approved funding to the end of 2023 of $2.672 million. These expenditures are related to low-carbon initiatives that broadly advance decarbonization of the gaseous fuel distribution system and therefore support FEI and provincial CleanBC emissions reduction objectives.

This application category includes FEI's share of the annual operating expenses of the Canadian Gas Association's NGIF, of which FEI is a member with several other Canadian utilities and oil and gas producers. In total, 27 of the 40 proposals approved for funding by the 2020 CGIF are NGIF projects that are co-funded with other Canadian utilities and oil and gas producers. This category also includes four years of FEI membership fees related to its participation in the Low Carbon Resource Initiative (LCRI), approved in Portfolio 3 of the 2020 CGIF. The LCRI is an initiative sponsored by utilities in North America that is focused on addressing the need to accelerate development and demonstration of low- and zero-carbon energy technologies to 2030 and beyond. Through partnerships with LCRI, NGIF and other funding partners, FEI has been able to support projects which are co-funded by multiple other parties, thereby increasing the impact of each dollar invested by the 2020 CGIF.

5.2.4 The 2020 CGIF Has Helped Advance the Clean Energy Transition

The 2020 CGIF performed well, approving significant funding for a variety of innovative methods of producing, distributing and utilizing low-carbon fuels. These funding grants are amplified by contributions from government, other utilities and the private sector,[125] creating a larger impact for each dollar invested. The organizations that are receiving this funding and creating the innovative products and services that will help decarbonize gas infrastructure are key to preserving the significant investment in the existing gas delivery system that has been made on

[125] The NGIF estimates that the leverage of the Industry Grants program (which is one of the main recipients of CGIF funding) is about 10x Industry Grants - NGIF Capital. This leverage ratio is further increased for FEI because it is one of up to 15 NGIF members providing the funding for the grants made by NGIF. Overall leverage for 2020 CGIF projects is estimated to be over 20x.

behalf of FEI customers. In particular, innovations that increase the availability and lower the cost of renewable and low carbon gases support the continued role of gas infrastructure.

The 2020 CGIF has also enabled benefits more broadly.

First, in addition to grant funding to support or progress development of a given project, organizations receiving funding from the 2020 CGIF benefited from the support provided by FEI and other partner utilities. This support includes, for example: (1) providing and facilitating access to utility and customer assets for testing and pilots; and/or (2) receiving utility feedback regarding how well their products and services address the needs of the utility and its customers.

Second, the information gained through the fund has helped FEI staff to understand and prioritize key pre-commercial technologies that will be required to meet the CleanBC decarbonization goals. Without the 2020 CGIF, FEI staff would have less direct exposure to the start-up companies and academic institutions developing the technologies that will decarbonize gaseous fuels, mitigate costs for customers and make the gas distribution system more resilient. The exposure to innovative ideas and technologies provided by the fund provides FEI staff with a better understanding of the different advantages and disadvantages of new technologies, often through pilot demonstrations, as well as insight into the challenges faced by start-ups when trying to move pre-production technologies into production. The development of internal knowledge through CGIF learnings is a significant benefit that will allow FEI to continue its role as a leader in the clean energy transition.

Third, the 2020 CGIF has enabled investments in a number of technologies that could reduce the cost of current and future gaseous fuels. The ongoing energy transition will drive higher costs for customers, all else equal. In the MRP Decision (pages 155-156), the BCUC recognized the need for investments to fund innovation activities that are designed to provide benefits to customers, including innovations that mitigate the risk of future rate increases. The 2020 CGIF has invested in a number of technologies that could reduce the cost of current and future low-carbon gaseous fuels; however, FEI believes that cost reductions remain an opportunity that should continue to be explored.

As discussed in Section C5.2.2 above, the 2020 CGIF, has seen a continued increase in the amount of funding approved and spent across the Current MRP term. This is in part due to increased collaborations with other funding organizations, but also because there is increasing interest and maturity in gas decarbonization technologies. Also, as shown in Section C5.2.3, the 2020 CGIF has funded innovations across the gas value chain.

As noted in Section C5.2.2 above, FEI will be returning approximately $5.8 million to customers, which represents the unspent funds collected during the Current MRP term. FEI does not consider this a failure of the 2020 CGIF, but rather, reflects the time it took to establish governance processes and establish relationships with new innovators and funding agencies. There has also been an overall increase in innovations related to the energy transition that has increased the opportunities available over the Current MRP term. As discussed below, to build on the momentum gained during the Current MRP term, there is an opportunity for the CGIF to expand

support for innovative technology pilots, particularly as some of the innovative technologies supported by the CGIF approach commercialization.

Ultimately, the 2020 CGIF has helped achieve the goals identified by the BCUC in the MRP Decision and has provided other significant benefits that will help to support the clean energy transition and CleanBC decarbonization goals. As discussed further below, based on the momentum and success of the 2020 CGIF, FEI proposes that the fund continue (as enhanced) during the Rate Framework term to support innovation activities and address key issues related to the clean energy transition for FEI customers in 2025 and beyond.

5.3 *THE 2025 CGIF*

With the clean energy transition well underway and the need for innovation and technology solutions becoming increasingly important to achieving climate and energy goals, FEI proposes to enhance the CGIF for the years 2025 to 2027 (2025 CGIF), building on the momentum established by the processes implemented and relationships established for the 2020 CGIF.

5.3.1 Proposed Enhancements to the CGIF

FEI is proposing that the 2025 CGIF continue the gas decarbonization funding activities already established under the 2020 CGIF, while expanding the scope of funding to address other impacts of climate adaption and the energy transition. In particular, a key focus area for the 2025 CGIF will be to invest in cost-effective technology solutions that will help support FEI's customers through the energy transition. Another area of focus FEI has identified relates to gas system infrastructure resilience. The impacts of climate change are already being realized in the form of extreme weather events in British Columbia. Wildfires, atmospheric rivers, polar vortexes and heat domes, weather systems that would have been considered highly anomalous in the past, are now occurrences that make energy system resilience increasingly important and a prime innovation opportunity that will benefit FEI customers.

The enhanced scope of the 2025 CGIF will allow FEI to support technologies which are vital to BC's clean energy transition, will help to achieve performance breakthroughs and cost reductions on emerging technologies, and will provide greater access to cost effective, safe, and resilient solutions for FEI customers.

To support the above funding scope, FEI proposes one addition to the 2020 CGIF evaluation criteria – energy system resilience benefits –- which is important for the reasons outlined above. The proposed 2025 CGIF evaluation criteria would then be as follows:

1. Carbon dioxide-equivalent (CO_2e) reduction potential in British Columbia;
2. Non-CO_2e emission reduction (NOx, SOx) potential in British Columbia;
3. Potential energy system resilience benefits for FEI customers;
4. Energy cost mitigation potential for FEI customers;

5. Amount of co-funding secured (from applicant and third parties); and
6. Relevant experience of the applicant project team.

Based on these criteria, and in consideration of the clean energy transition, FEI recommends that the 2025 CGIF focus on funding innovations that will help to address the following seven application categories which are key to the clean energy transition:

1. **Production:** the development of low-carbon gaseous fuel technologies;
2. **Distribution**: adapting the existing gas delivery system to distribute low-carbon gaseous fuels such as hydrogen;
3. **End Use:** the development of end-use technologies, including dual-fuel innovations, to assist FEI's customers through the energy transition;
4. **Cost Mitigation:** investment in technological solutions that reduce costs for customers;
5. **Resilience**: investment in technological solutions that will improving the resiliency of the gas delivery systems in response to adverse climatic events;
6. **Carbon Capture and Storage:** investments in end-use carbon capture and storage; and
7. **Generalized Low-Carbon:** initiatives that broadly advance decarbonization and support CleanBC emission reduction objectives.

Each of these items are addressed further in the sections below.

5.3.1.1 Production: Investments to Support the Development of Low-Carbon Gaseous Fuels

FEI considers that gaseous energy will continue to be a critical component of a decarbonized energy system in British Columbia. Existing gas infrastructure in the Province is a multi-billion dollar asset that provides reliable, safe, affordable and high-quality energy services to British Columbians.

Gas infrastructure has historically delivered conventional natural gas. However, the gas infrastructure is capable of delivering other gaseous fuels, including renewable and low-carbon fuels such as RNG and hydrogen. FEI's 2022 Long-Term Gas Resource Plan envisions having approximately 25 percent of total gas supply from renewable and low-carbon gas by 2030.

It is important for FEI to continue to invest in novel technologies and processes for creating and storing lowest-cost, low-carbon gases, to ensure the long-term viability of the gas utility and support the energy transition in British Columbia.

5.3.1.2 Distribution: Adapting the Existing Gas Delivery System to Low-Carbon Gaseous Fuels

RNG is chemically similar to conventional natural gas such that it requires no modifications to the existing gas distribution system (and to customer equipment). Although hydrogen is highly compatible with existing infrastructure when blended with natural gas (or RNG) in relatively small percentages, there are still a number of safety, regulatory and technical challenges that need to be addressed along the gas value chain.

The CGIF has already invested in research with the University of British Columbia and University of Victoria into the impacts of HENG. FEI has also now initiated the H2Transform initiative, which is a pilot project for the injection of HENG into FEI's distribution system that is currently in its early stages. FEI expects that future CGIF investment in transmission and distribution technologies will align with this work that is already underway.

5.3.1.3 Cost Mitigation: Addressing the Costs Associated with the Energy Transition for Gas Customers

The energy transition is expected to increase energy costs for British Columbians. The CGIF can play a key role in supporting cost-effective energy solutions for customers by focusing more broadly on innovations that have the potential to reduce costs. To date, the CGIF has focused on cost reductions directly related to the energy transition such as those related to reducing the cost of RNG. However, there are innovations that can help FEI reduce costs in other business areas that will also provide benefits to customers.

For example, satellite-enhanced vegetation management may be a useful tool with the potential to make vegetation management more cost effective by moving it from a time-based approach to a condition-based approach. Similarly, remote sensing and control has the potential to reduce costs for both utilities by reducing the need to physically visit or continuously monitor gas assets. Some remote sensing devices are specific to each energy system (for example hydrogen detectors) while others are useful for both gas and electric utilities (camera-based intrusion detection).

FEI proposes to also fund innovations that will help customers directly reduce their costs. Examples include combined heat and power (CHP) technologies that provide heat for industrial and agriculture requirements while providing a useful biproduct (carbon dioxide) that can be used by agricultural customers to support the growth of plants.

5.3.1.4 Resilience

Gas system climate adaption will be required to mitigate impacts from extreme temperatures, atmospheric rivers and other unusual weather conditions. Innovations are required that will increase energy system resilience, particularly for above-ground assets, related to floods, fires and other adverse climatic events. This could mean investment in new technologies that provide remote detection of adverse weather conditions or of weather-related asset failures, for example.

While FEI already has cameras (both visual and thermal) deployed at critical assets such as substations, innovations are being developed that will better utilize this data source. Artificial Intelligence (AI) algorithms can identify anomalies at these substation sites, such as intrusion and wildfires in near real-time and alert substation personnel for actions while avoiding the need for 24/7 human monitoring.

Another way to make energy systems more resilient to disruptions in transmission and distribution systems is to increase energy supply and storage capabilities close to customers. Given the technology landscape, it is likely that biomethane and low-carbon hydrogen will be produced in a distributed manner, with production facilities connected directly to the distribution systems or customers. Distributed energy resources such as these have the potential to improve both gas and electric system resilience, but only if appropriate monitoring, control and storage systems are in place. To support this, FEI will need tools to manage an increasingly complex system.

The distributed nature of hydrogen production, in particular, is likely to require distribution-scale storage systems to allow for production disruptions and large fluctuations in demand. Customers that are reliant on hydrogen will not initially have access to the large-scale production, transmission and distribution networks that can backstop smaller distribution electric and biomethane production facilities. FEI is looking at a variety of solutions in this space including one from Calgary-based Ayrton Energy,[126] which is developing liquid organic hydrogen carrier storage systems.

FEI proposes to also consider innovations that allow customers' gas equipment to continue functioning in the absence of electric supply. While whole-home battery backup systems and vehicle-to-grid would accomplish this goal, they are relatively expensive. Residential gas-fueled hot water and space heating appliances do not require large amounts of electricity and could keep running for significant periods from small, integrated battery systems, providing reliability and safety benefits for British Columbians.

Although FEI may not directly own these customer-oriented solutions if they prove successful, it is important to be aware of innovations that could be beneficial in helping customers manage and secure their energy sources in the future.

5.3.1.5 End-Use

Most FEI investments in innovative end-use technology are made as part of the Conservation and Energy Management Innovative Technology program and funded through Demand Side Management expenditures. However, as part of the 2020 CGIF, a small amount of investment has been applied to developing hydrogen-ready equipment such as residential home heating appliances. Support for hydrogen-ready end-use appliances, including those that are capable of using hydrogen, are key to the future deployment of hydrogen across FEI's service territory.

[126] https://ayrtonenergy.com/.

5.3.1.6 Carbon Capture, Utilization and Storage

The CGIF will continue to support CCUS technologies. CCUS is likely to be key to economic decarbonization of certain emission sources. For example, it may be less expensive to sequester or utilize carbon emissions in industrial applications than it would be for the customer to convert the industrial equipment to use low-carbon electricity or gaseous fuel. Similarly, when FEI is considering how to best manage CO_2 emissions from operations such as RNG and LNG facilities, it is important to understand an array of technical solutions for utilizing or storing those emissions.

FEI will continue to work with governments and other organizations to create a robust framework for carbon sequestration in BC. This means development of sequestration technologies uniquely suited to the geology in British Columbia as well as supporting research into the geology itself.

5.3.1.7 Generalized Low-Carbon

FEI proposes to continue to make expenditures related to low-carbon initiatives that broadly advance decarbonization of the combined electric and gaseous fuel distribution systems. Included in this category is FEI's share of the annual operating expenses of the NGIF and LCRI.

5.3.2 2025 CGIF Administration and Collection

FEI proposes to maintain the 2020 CGIF governance structure currently in place, which includes the CGIF-ST, the ESC, and the EAC (as outlined in Section C5.2.1 above).

FEI proposes to continue utilizing the innovation rider and to continue to collect $0.40 per month from FEI's customers' bills. Although this funding was in excess of requirements in the Current MRP, as shown in Table C5-1 above, approved funding amounts steadily increased from 2020 to 2024. FEI expects this to continue now that the CGIF is an established source of funding. Portfolio approvals totalled $4.169 million in 2023 which came close to the $5.230 million in funding collected from customers through the existing rider in that year. In 2024, FEI is forecasting approved funding of $7.5 million which is expected to significantly exceed CGIF rate rider collections. FEI has also proposed to expand the scope of funding activities (as outlined in Section C5.3.1), which will increase potential funding opportunities. The $0.40 per customer monthly rate rider would collect approximately $5.2 million in 2025, similar to the levels in 2023 and 2024. At the end of the Rate Framework, the unused balance in the deferral account will be returned to customers.

5.4 *CONCLUSION*

The 2020 CGIF has provided significant funding for a variety of innovative methods of producing, distributing and utilizing renewable and low-carbon fuels. These investments support FEI customers by providing cleaner and more affordable energy sources, seeking to lower costs, and maintaining the long-term viability of the gas utility through the development of new technologies.

FEI is proposing an enhanced 2025 CGIF that builds on the initial efforts of the 2020 CGIF and continues to support BC's clean energy transition. The 2025 CGIF will accelerate the pace of clean energy innovation by helping to achieve performance breakthroughs and cost reductions on emerging technologies, and provide cost effective, safe, and resilient solutions for FEI customers.

6. SERVICE QUALITY INDICATORS

6.1 *INTRODUCTION*

In this section, FortisBC summarizes its proposed Service Quality Indicators (SQIs) for FEI and FBC. Within a multi-year rate-making framework, SQIs form the basis for determining a utility's quality of service and represent a broad range of business processes that are important elements of the customer experience. Under the Current MRP, SQIs with approved benchmark and performance ranges set by a threshold level are used to monitor the Companies' performance to ensure that any efficiencies and cost reductions do not result in a degradation of the quality of service to customers. Other SQIs do not have benchmark or performance ranges and are instead informational indicators that provide visibility into key aspects of FortisBC's business. FortisBC proposes to continue this approach. A full discussion of the proposed SQIs for FEI and FBC is included in Appendices C6-1 and C6-2, respectively.

Maintaining a high level of service quality is important to the long-term success of the Companies. The SQIs will serve to ensure that service quality to customers is maintained at acceptable levels throughout the term of the Rate Framework. The following subsections describe the criteria used to establish SQIs, and explain how benchmarks and thresholds are selected, as well as the difference between measured SQIs and informational indicators.

6.1.1 SQI Selection Criteria

In developing the proposed suite of Service Quality Indicators for the current Application, the criteria used to establish the SQIs for the past multi-year rate plans in 1998, 2004, 2014 and 2020 were considered, as FortisBC believes that the criteria continue to remain appropriate. The criteria are presented in the following table.

Table C6-1: Criteria for the Design and Selection of SQIs

ID	Criterion	Description
1	Value to customers	The indicator must represent a service or service attributes that customers value.
2	Controllable	Only those indicators over which the Company has control should be included. SQIs should not be linked to exogenous events over which the actions of the Company's employees have little or no influence.
3	Cost effective	The information collection activities associated with the indicator must be cost effective.
4	Simple and transparent	The indicator should be simple to administer, and results should be easy to understand and interpret.
5	Traceable and Quantifiable	The indicators should have been previously tracked to ensure they are stable over time. The indicators must be quantifiable.
6	Flexible	The indicators should allow sufficient flexibility to allow modifications, additions and deletions as required over time.

6.1.2 Choice of Benchmarks

Benchmarks are reference points against which levels of service quality can be compared. The objective of SQIs is to ensure that the Companies continue to provide an "acceptable level" of service at an "acceptable level" of cost to customers. Therefore, in setting SQI benchmarks, it is necessary to consider whether customers are willing to pay for additional improvements in the indicators, as incremental costs for achieving further improvements increase as the limit of the indicator is approached. Benchmarks typically reflect either industry standards or the Companies' performance over recent prior periods.

6.1.3 Thresholds and Satisfactory Performance Ranges

Thresholds or satisfactory performance ranges used in the Current MRP were first introduced in the 2014-2019 PBR Plan as an effective way to manage SQIs. As part of the Decision regarding FortisBC's 2014-2019 PBR Plan Application, the BCUC agreed that it was not appropriate to require FortisBC to be held to a specific performance benchmark. The BCUC stated:

> The Commission Panel agrees with Fortis and determines that it is not appropriate to require Fortis to be held to a specific performance benchmark for the following reasons. First, it does not take into account why SQIs are part of the PBR in the first place; that is to help mitigate the potential of serious degradation of service levels. Does being a percentage point below a prescribed performance benchmark result in a serious degradation of service? In most cases, a drop of this amount would have minimal impact yet could result in a penalty being imposed. Second, there is the issue of averages. If averages are relied upon to determine the performance benchmarks, it follows that results will fall below the benchmark approximately one half of the time. **Taking these points into consideration, the Commission Panel determines that the most effective way to manage SQIs is to set a satisfactory performance range.**

Through a consultative process, FortisBC and stakeholders reached an agreement titled the "Consensus Recommendation"[127] on appropriate thresholds to consider. The Consensus Recommendation was approved pursuant to Order G-14-15.

6.1.4 Informational Indicators

Some SQIs do not have benchmarks or thresholds and are classified as informational indicators. An SQI works well as an informational indicator when there are factors outside of the Companies' control that may influence the metric's performance. For example, the Customer Satisfaction Index is an informational indicator as it recognizes that uncontrollable factors can have an adverse influence on customer satisfaction, such as the market price (commodity cost) of natural gas in the case of FEI and storm-related unplanned outages in the case of FBC.

[127] Please refer to Appendix C6-3 for a copy of the Consensus Recommendation.

Another consideration when determining whether an SQI should be an informational indicator is the amount of historical performance data available, as without an adequate amount of historical data available to identify trends, it is challenging to establish an appropriate benchmark or threshold.

As a result, informational indicators are generally more directional in nature, providing a high-level view into key business functions.

6.2 *SQI OVERVIEW AND STAKEHOLDER FEEDBACK*

6.2.1 SQI Overview

The BCUC approved a balanced set of SQIs for the Current MRP covering safety, responsiveness to customer needs and reliability. Of FEI's 13 approved SQIs, nine have benchmarks and performance ranges set by a threshold level, as outlined in the Consensus Recommendation, and four of the SQIs are for information only, and as such do not have benchmarks or performance ranges. Of FBC's 12 approved SQIs, eight have benchmarks and performance ranges set by a threshold level, and four of the SQIs are for information only.

The current suite of SQIs for FEI and FBC have been appropriate and useful in monitoring the Companies' performance to ensure that any efficiencies and cost reductions do not result in a degradation of service quality. For the Rate Framework, FortisBC reviewed the current SQIs to assess their continued appropriateness in measuring service quality and for the level of the benchmarks and thresholds for each metric. Based on this review, FEI and FBC are proposing updates and modifications to the existing suite of SQIs in order to build on the experience gained during the Current MRP term. Additionally, FEI is proposing to introduce a new category of informational indicators that relate to the Company's response to the energy transition.

As further discussed in the following sections, FortisBC is proposing to make the "Meter Reading Accuracy" metric an informational indicator and rename it "Meter Reading Completion" to better reflect what the metric is measuring. FortisBC is also proposing updates to the benchmarks and/or thresholds for the All Injury Frequency Rate (AIFR) indicator, FEI's Public Contact with Gas Lines indicator, and FBC's System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) indicators. In addition, FEI is proposing a new category of informational indictors specific to the energy transition.

Similar to the Current MRP, FEI and FBC will report each year's results to the BCUC and stakeholders at the Annual Reviews to allow a comparison of the Companies' SQI performance against the benchmark targets and the thresholds for each of the SQIs (as applicable). Also consistent with the Current MRP, failure to meet SQI benchmark thresholds, if determined by the BCUC after further process to be considered a serious degradation of service quality in whole or in part due to the actions (or inactions) of the Companies, may result in a reduction to the share of earnings sharing retained by the Companies, up to a maximum reduction to reflect a 60 percent

share to the customer (i.e., penalty of 10 percent of the earnings sharing earned by the Companies), instead of the standard 50 percent.

FortisBC proposes to continue using the review process outlined in the Consensus Recommendation approved by Order G-14-15 to evaluate SQI results, as this process was used successfully during the 2014-2019 PBR Plan term and the Current MRP term. The Consensus Recommendation provides guidance on the objectives of performance ranges and the review process for the SQI results, including a two-phase process (Phase 1 – Identification of Results for Discussion at the Annual Review and Phase 2 – Determination of Any Financial Consequences). As recently as in its decision on FEI's Annual Review for 2024 Delivery Rates, the BCUC confirmed that the existing process for review of SQI performance outlined in the Consensus Recommendation remains appropriate:[128]

> The Panel disagrees with RCIA's characterization of the Consensus Recommendation with respect to SQIs. The current SQI review process leaves room for the BCUC's consideration of the relevant specific circumstances which may have contributed to the results (e.g., pandemics, economic conditions, extreme weather, etc.) as opposed to the automatic imposition of a penalty for any sustained degradation of service. The Panel views this to be consistent with the spirit of the Consensus Recommendation and the BCUC's previous directives in that regard.

6.2.2 Stakeholder Feedback

FortisBC engaged with interveners and BCUC staff on its proposed SQIs during a workshop on November 20, 2023. The key highlights of the feedback received from interveners in this area are outlined below. A more detailed summary of the feedback received, and the material used by FortisBC to facilitate the discussion, is included in Appendix B2-3. Explanations regarding how FortisBC considered the feedback received at the workshop is included throughout Appendices C6-1 and C6-2 as applicable.

FortisBC received the following general comments about its proposed SQIs at the workshop:

- One intervener noted that FortisBC should ensure that customers are not burdened with extra costs due to efforts by the utility to enhance its SQI results.
- One intervener shared their thoughts on how to approach SQIs overall, including their view that SQIs should map the overall progress of the company and that four broad new SQI areas should be developed in the areas of energy transition, affordability, resiliency, and effectiveness/efficiency. This intervener also shared their view that SQIs with stable performance should instead be informational indicators (i.e., these SQIs do not warrant benchmark and performance ranges).

[128] Page 29 of Decision and Order G-334-23.

- There was general support from interveners for exploring possible leading indicators to establish a means of more effectively measuring overall employee safety.

In addition to general comments, interveners provided the following specific suggestions regarding FortisBC's proposed SQIs:

- **Customer SQIs:** First, interveners asked FortisBC to consider the value of reporting meter reading completion effectiveness once AMI is in place. Second, interveners expressed opposition to the idea of lowering the threshold on the Telephone Service Factor (TSF) (non-emergency) SQI for FEI and FBC from 68 percent to 65 percent. Third, there was a suggestion to include a metric, or provide more information, for measuring how FortisBC responds when a customer problem is not resolved on first contact and, generally, to see more and different information regarding SQI performance.
- **Reliability SQIs:** First, interveners proposed moving the Generator Forced Outage Rate (GFOR) and Interconnection Utilization from being informational indicators to having benchmarks and thresholds, as well as determining whether GFOR performance could be reported during certain times. Second, interveners raised Major Events as an area of interest and, in particular, how these events should be considered when reporting on SAIDI and SAIFI. Finally, one intervener also expressed concern that basing the benchmark and/or threshold on an increasing trend in SAIDI performance over time (i.e., higher results) may implicitly contribute to declining SAIDI performance.
- **Safety SQIs:** FortisBC did not receive any specific comments of note as part of the workshop, beyond those regarding possible leading indicators as noted above.

FortisBC appreciates the feedback received at the workshop and has carefully considered the comments and suggestions from interveners when developing its suite of SQIs for the Rate Framework. FortisBC's proposals and rationale for the proposed suite of SQIs are described in the following sections and in Appendices C6-1 and C6-2.

6.3 *FEI'S PROPOSED SERVICE QUALITY INDICATORS*

FEI reviewed the existing SQIs and believes that overall, they remain appropriate to ensure that service quality to customers is maintained throughout the term of the Rate Framework. As further explained below and in Appendix C6-1, FEI is proposing the following changes which build off of and enhance its existing suite of SQIs:

- FEI proposes to change the benchmarks and thresholds of some SQIs, recognizing recent historical performance.
- FEI proposes to change the name of the Meter Reading Accuracy metric to Meter Reading Completion to better reflect what the metric is measuring, and to change it to an informational indicator.

- FEI proposes to introduce a new suite of informational indicators to report on the results of FEI's activities related to the energy transition. While not a traditional category of SQIs, FEI considers it important to report on these metrics within the Annual Review process given the overall focus on the energy transition within the Rate Framework, and to be responsive to the comments received from both the BCUC and interveners.

The following table provides a comparison of FEI's current and proposed SQIs. The areas of the table that are shaded green reflect changes to existing indicators as well as new indicators. The changes and new indicators are discussed in the subsections below the table.

Table C6-2: Comparison of FEI Current and Proposed SQIs

Safety Indicators		Current		*Proposed*	
		Benchmark	Threshold	Benchmark	Threshold
Annual results	**Emergency Response Time**	>= 97.7%	96.2%	>=97.7%	96.2%
Annual results	**Telephone Service Factor (Emergency)**	>= 95%	92.8%	>=95%	92.8%
3 Year rolling average	**All Injury Frequency Rate**	<= 2.08	2.95	<= 1.64	2.21
Annual results	**Public Contacts with Gas Lines**	<=8	12	<=6	10
Responsiveness to Customer Needs Indicators					
Annual results	**First Contact Resolution**	>= 78%	74%	>=78%	74%
Annual results	**Billing Index**	<= 3	5	<=3	5
Annual results	**Meter Reading Completion**	>= 95%	92%	Informational	Informational
Annual results	**Telephone Service Factor (Non Emergency)**	>= 70%	68%	>=70%	68%
Annual results	**Meter Exchange Appointment Activity**	>=95%	93.8%	>=95%	93.8%
Annual results	**Customer Satisfaction Index**	Informational	Informational	Informational	Informational
Annual results	**Average Speed of Answer**	Informational	Informational	Informational	Informational
Reliability Indicators					
Annual results	**Transmission Reportable Incidents**	Informational	Informational	Informational	Informational
Annual results and 5 Year rolling average	**Leaks per KM of Distribution System Mains**	Informational	Informational	Informational	Informational
Energy Transition Indicators					
Annual results	**Scope 1 Emissions**	N/A	N/A	Informational	Informational
Annual results	**Renewable and Low Carbon Energy Supply Volume**	N/A	N/A	Informational	Informational
Annual results	**Natural Gas for Transportation Volume**	N/A	N/A	Informational	Informational
Annual results	**Demand Side Management Energy Savings**	N/A	N/A	Informational	Informational

6.3.1 All Injury Frequency Rate

FortisBC is committed to ensuring its employees can perform their work and go home safely at the end of each day.

During the November 2023 consultation session, FortisBC discussed the difference between leading and lagging safety indicators and explained that it was exploring introducing a leading safety indicator to enhance its reporting on safety, as FEI and FBC currently report on the All Injury Frequency Rate (AIFR), which is a lagging indicator. Stakeholders were generally supportive of the concept.

When measuring and monitoring safety, lagging indicators measure what happened after the fact (i.e., outcomes) and can alert the Companies to a failure in the safety system, or to the existence of an uncontrolled hazard, *following* an event. At FortisBC, such events are used to learn and improve, identifying gaps in existing safety defenses and establishing corrective actions to prevent future reoccurrences. In contrast, leading indicators are proactive and preventative measures that can shed light on the effectiveness of safety and health activities and reveal potential gaps *prior* to an event occurring.

FortisBC has been exploring potential leading indicators but does not yet have a formal, defined indicator to propose for inclusion as an SQI. Instead, FortisBC will continue to examine and develop a leading safety indicator during the term of the Rate Framework and will propose a suitable leading indicator either during the Rate Framework (as part of the Annual Review process) or subsequent to the conclusion of the three-year term of the Framework. FEI and FBC expect that any new leading safety indicator would initially be informational only, as there will likely be a lack of adequate historical information to establish a benchmark or threshold. This approach will allow FEI and FBC to evaluate suitable metrics, propose a suitable metric, and engage in discussions with the BCUC and interveners on whether the selected metric is appropriate for inclusion in the Companies' suite of SQIs.

FEI proposes to continue to report on the existing AIFR SQI. The three-year rolling average and annual results during the Current MRP term are provided in the table below.

Table C6-3: FEI AIFR History and Proposed Metrics

Description	2020	2021	2022	2023	Benchmark		Threshold	
					Current	Proposed	Current	Proposed
AIFR – three year rolling average	1.66	1.75	1.59	1.58	2.08	1.64	2.95	2.21
AIFR - annual	1.43	1.99	1.36	1.35	n/a	n/a	n/a	n/a

The results from 2020 to 2023, shown in Table C6-3 above, have been better than the currently approved benchmark of 2.08. For the term of the Rate Framework, FEI proposes to lower the benchmark based on the average of the recent three-year rolling average of the annual results

from 2021 to 2023. FEI accordingly proposes to lower the benchmark from 2.08 to 1.64. Additionally, FEI proposes to lower the threshold from 2.95 to 2.21, consistent with past practice.[129]

Please refer to Appendix C6-1 for further details on the AIFR.

6.3.2 Public Contacts with Gas Lines

FEI proposes to continue to report on Public Contacts with Gas Lines. Based on the improved performance in recent years, which FEI believes is sustainable, FEI proposes to lower the benchmark from 8 to 6.

Table C6-4: FEI Public Contact with Gas Lines History and Proposed Metrics

Description	2020	2021	2022	2023	Benchmark		Threshold	
					Current	Proposed	Current	Proposed
Public Contact with Gas Lines – annual	7	6	6	5	8	6	12	10

The results from 2020 to 2023, shown in Table C6-4 above, have been better than the currently approved benchmark of 8. The benchmark in place during the Current MRP term was based on the average of the annual results from 2016 to 2018. From 2020 to 2023, the annual results have trended downward. Increased awareness through targeted workshops with municipalities and excavating contractors, together with a higher number of calls generated by the BC 1 Call program, have contributed to the improved performance.

FEI proposes to lower the benchmark to 6, which is based on the average of the most recent three years of results from 2021 to 2023 and reflects the recent downward trend in gas line contacts. FEI proposes to revise the threshold to 10, as this is reflective of the positive historical performance observed.

Please refer to Appendix C6-1 for further details on the Public Contact with Gas Lines SQI.

6.3.3 Meter Reading Completion (formerly Meter Reading Accuracy)

FEI proposes to change the name of the Meter Reading Accuracy metric to Meter Reading Completion as the revised name better reflects what the metric is measuring (i.e., the number of scheduled meters that were read).

Further, while FEI proposes to continue to report on the Meter Reading Completion metric given the value customers place on receiving a timely and accurate bill, FEI proposes to change this metric to an informational indicator and remove the existing benchmark and threshold. The reason

[129] The threshold is set at 2 standard deviations from the recent 10-year history of the three-year rolling averages of the annual results.

for this proposed change is that during the term of the Rate Framework, FEI will be in the process of deploying AMI. As the deployment of AMI will be ongoing throughout the Rate Framework term, resulting in a mix of meter types (manual and advanced), using a benchmark and threshold will no longer provide an effective means of assessing FEI's service quality. FEI instead proposes to continue reporting on this SQI as an informational indicator until AMI is fully implemented, at which point it will assess this metric and determine if it should be re-instated as a measured SQI with adjusted benchmarks and thresholds.

Table C6-5: FEI Meter Reading Completion History and Proposed Metrics

Description	2020	2021	2022	2023
Meter Reading Completion	89%	88%	88%	95%

The currently approved benchmark and threshold for Meter Reading Completion are 95 percent and 92 percent, respectively. As shown in Table C6-5, for the first three years of the Current MRP, FEI performed worse than the threshold; however, the 2023 results indicate a return to benchmark-level performance. The results from 2020 to 2022 were discussed in detail in each of the Annual Reviews during the Current MRP term. As explained in these Annual Reviews, the lower than threshold performance of the Meter Reading Completion SQI between 2020 and 2022 was primarily a result of the COVID-19 pandemic and its broader impacts.

Please refer to Appendix C6-1 for further details on the Meter Reading Completion SQI.

6.3.4 Energy Transition Informational Indicators

As outlined in Section B2.4, feedback received on the Rate Framework suggested that FEI should be engaged in, and adapt to, the energy transition and consideration should be given to creating a new energy transition focused reporting area. In response to this feedback, FEI proposes to introduce a number of energy transition informational indicators, listed in Table C6-6 below, which align with the pillars of the Company's Clean Growth Pathway to 2050. FortisBC's pillars for the Clean Growth Pathway to 2050 seek to lower emissions by increasing the supply of renewable and low-carbon gases, investing in energy efficiency, advancing low- and no-carbon transportation, and investing in LNG for marine shipping in place of higher-carbon fuels.

These informational indicators will provide an annual assessment of FEI's GHG emissions, renewable gas supply, energy efficiency savings, and natural gas for transportation volumes. While the proposed energy transition informational indicators are a departure from FEI's more traditional SQIs, as they do not directly measure or relate to service quality, FEI considers these new indicators useful for providing context on how FEI is addressing the energy transition. Further, FEI considers it appropriate to classify the energy transition indicators as informational because of the rapidly evolving and uncertain policy and environment, trajectory of development for low-carbon technologies, and changing market circumstances which are largely outside of FEI's control but will nonetheless impact FEI's progress in the energy transition.

FEI has been tracking these informational indicators and reporting on the results through various external filings, including FortisBC's annual sustainability report and in filings to the BCUC such as the DSM annual report. The proposed new informational indicators will centralize tracking and reporting of the associated results. The table below provides the historical results from these areas over the Current MRP term for context. Please refer to Appendix C6-1 for further information on the proposed energy transition informational indicators.

Table C6-6: FEI Energy Transition Informational Indicators

Performance Measure	Description	2020 Results	2021 Results	2022 Results	2023 Results
Scope 1 Emissions	Total direct GHG emissions from FEI owned or controlled sources ($MtCO_2e$)	0.14	0.15	0.24	0.14[130]
Renewable and Low Carbon Energy Supply Volume	Acquired annual Renewable Gas and Low Carbon Energy supply (TJ)	306	790	2,295	2,778
Natural Gas for Transportation Volume	Total gas consumed by CNG and LNG customers (TJ)	2,413	2,652	3,077	3,117
Demand Side Management Energy Savings	Measure of lifetime gas savings from conservation and energy management programs (TJ)[131]	7,937	12,304	10,811	10,104

6.4 *FBC'S PROPOSED SERVICE QUALITY INDICATORS*

FBC reviewed the existing SQIs and believes that overall, they remain appropriate to ensure that service quality to customers is maintained throughout the term of the Rate Framework. As further explained below and in Appendix C6-2, FBC is proposing the following changes which build off of and enhance its existing suite of SQIs:

- FBC proposes to change the benchmarks and thresholds of some SQIs, recognizing their recent historical performance.
- FBC proposes to change the name of the Meter Reading Accuracy metric to Meter Reading Completion to better reflect what the metric is measuring and to change it to an informational indicator.

The following table provides a comparison of FBC's current and proposed SQIs. The four metrics with green shaded areas reflect changes from the current SQIs. Each change is discussed in detail below the table.

[130] 2023 GHG emissions from natural gas operations are currently being reviewed by a third-party verifier. As such, values may change.
[131] FEI calculates lifetime gas savings based on the net present value of gas savings over the lifetime of all measures implemented during the year.

Table C6-7: Comparison of FBC Current and Proposed SQIs

Safety Indicators		Current Benchmark	Current Threshold	*Proposed* Benchmark	*Proposed* Threshold
Annual results	**Emergency Response Time**	>= 93%	90.6%	>=93%	90.6%
3 Year rolling average	**All Injury Frequency Rate**	<= 1.64	2.39	<=1.31	2.56
Responsiveness to Customer Needs Indicators					
Annual results	**First Contact Resolution**	>= 78%	74%	>=78%	74%
Annual results	**Billing Index**	<= 3	5	<=3	5
Annual results	**Meter Reading Completion**	>= 98%	96%	Informational	Informational
Annual results	**Telephone Service Factor**	>= 70%	68%	>=70%	68%
Annual results	**Customer Satisfaction Index**	Informational	Informational	Informational	Informational
Annual results	**Average Speed of Answer**	Informational	Informational	Informational	Informational
Reliability Indicators					
Annual results	**System Average Interruption Duration Index - Normalized**	3.22	4.52	3.24	4.71
Annual results	**System Average Interruption Frequency Index - Normalized**	1.57	2.19	1.64	2.25
Annual results	**Generator Forced Outage Rate**	Informational	Informational	Informational	Informational
Annual results	**Interconnection Utilization**	Informational	Informational	Informational	Informational

6.4.1 All Injury Frequency Rate

FBC proposes to continue to report on the existing AIFR SQI which is a lagging indicator. Please refer to Section C6.3.1 above for a description of the leading versus lagging indicators of employee safety. Consistent with FEI, FBC proposes to explore leading indicators of safety that could be considered for future inclusion as an SQI.

The three-year rolling average and annual results of the AIFR SQI during the Current MRP term are provided in the table below.

Table C6-8: FBC AIFR History and Proposed Metrics

Description	2020	2021	2022	2023	Benchmark		Threshold	
					Current	Proposed	Current	Proposed
AIFR – three year rolling average	0.87	0.67	1.42	1.84	1.64	1.31	2.39	2.56
AIFR – annual	0.66	0.89	2.60	1.97	n/a	n/a	n/a	n/a

The results from 2020 to 2022 have been better than the currently approved benchmark of 1.64, with the 2023 results better than the threshold. For the term of the Rate Framework, FBC proposes to lower the benchmark based on the average of the recent three-year rolling average of the annual results from 2021 to 2023. FBC accordingly proposes to lower the benchmark from 1.64 to 1.31. Additionally, FBC proposes to increase the threshold from the currently approved 2.39 to 2.56, consistent with past practice.[132]

6.4.2 Meter Reading Completion (formerly Meter Reading Accuracy)

FBC proposes to change the name of the Meter Reading Accuracy metric to Meter Reading Completion, as the revised name better reflects what the metric is measuring (i.e., the number of scheduled meters that were read).

Further, FBC proposes to change this metric to an informational indicator and remove the existing benchmark and threshold. As shown in Table C6-9 below, the information gathered through the Meter Reading Completion SQI remains valuable as FBC did not achieve 100 percent performance accuracy during the Current MRP term, despite relatively stable performance. Some AMI meters are not automatically read, either because a customer has requested the radio be turned off or due to the location of the meter not allowing for a proper signal to be received. Further, failures related to weather and system issues can still occur. Having visibility on meter reading completion through the proposed informational indicator will ensure FBC remains focused on obtaining meter readings in both manual and automatic reading situations.

Table C6-9: FBC Meter Reading Completion History and Proposed Metrics

Description	2020	2021	2022	2023
Meter Reading Completion	99%	99%	99%	99%

Please refer to Appendix C6-2 for further details on the Meter Reading Completion SQI.

[132] The threshold is set at 2 standard deviations from the recent 10-year history of the three-year rolling averages of the annual results.

6.4.3 System Average Interruption Duration and Frequency Indexes

FBC proposes to continue to report on SAIDI and SAIFI and to adjust the benchmarks and thresholds.

For SAIDI, the proposed benchmark and threshold incorporate the recent 2021 to 2023 results. Consistent with the approach used to determine the benchmark in the Current MRP, the proposed benchmark is based on the average of the most recent three years' results (i.e., 2021 to 2023). As SAIDI is significantly impacted by external factors, resulting in variability in SAIDI performance, FBC considers that a three-year performance average establishes a benchmark that is consistent with the level of costs required to provide this level of service and provides a consistent methodology that allows for changes in service quality to be detected. Similar to the approach used to determine the threshold for the Current MRP, the proposed threshold is based on statistical analysis (i.e., standard deviation) of the SAIDI historical results from 2010 to 2019 and now inclusive of 2020 to 2023.

The table below provides a summary of the SAIDI results since the beginning of the Current MRP, the currently approved benchmark and threshold, and the proposed benchmark and threshold for the Rate Framework.

Table C6-10: FBC SAIDI History and Proposed Metrics

Description	2020	2021	2022	2023	Benchmark		Threshold	
					Current	Proposed	Current	Proposed
SAIDI (annual normalized results)	3.17	4.27	2.42	3.04	3.22	3.24	4.52	4.71

For SAIFI, the proposed benchmark and threshold incorporate the recent 2021 to 2023 results. Consistent with the approach used to determine the benchmark in the Current MRP, the proposed benchmark is based on the average of the most recent three years' results (i.e., 2021 to 2023). Similar to the approach used to determine the threshold for the Current MRP, the proposed threshold is based on statistical analysis (i.e., standard deviation) of the SAIFI historical results from 2010 to 2019 and now inclusive of 2020 to 2023.

Table C6-11: FBC SAIFI History and Proposed Metrics

Description	2020	2021	2022	2023	Benchmark		Threshold	
					Current	Proposed	Current	Proposed
SAIFI (annual normalized results)	1.64	2.08	1.52	1.31	1.57	1.64	2.19	2.25

Please refer to Appendix C6-2 for further details.

6.5 *CONCLUSION*

FortisBC's proposed updates and modifications to the Companies' suite of SQIs build on the experience gained during the Current MRP and are designed to ensure that any efficiencies and cost reductions do not result in a degradation of service quality during the term of the Rate Framework.

These SQIs cover responsiveness to customer needs, reliability, and safety. FEI is also proposing to introduce a new category of informational indicators, which is responsive to feedback received on the Rate Framework and will provide an annual assessment of FEI's GHG emissions, renewable energy and natural gas for transportation supply efforts, and DSM energy savings. These new indicators will provide added context on how FEI is addressing the energy transition.

Ultimately, the proposed suite of SQIs for FEI and FBC are both comprehensive and balanced.

7. INDICATIVE RATES

In this section, FortisBC provides projections of its 2025 rates under the Rate Framework. The purpose of this is twofold: (1) to illustrate how the various components of the Rate Framework fit together; and (2) to provide some insight into the upcoming rate changes for 2025.

FortisBC is not requesting approval of 2025 rates in this Application. FortisBC will file for interim 2025 rates before the end of 2024. As part of the 2025 interim rates filings, the Companies will include the impacts of various items related to the close out of the Current MRP, including the true-up of rate base, projections of the Flow-through deferral account and Earnings Sharing amounts, and the returning of unused CGIF funds from the Current MRP to FEI's customers. FEI will also propose an amortization period for the 2023 and 2024 Revenue Deficiency deferral account. After the BCUC issues its decision in relation to this Application, FEI and FBC will file for permanent 2025 rates as part of the first Annual Review, and will include any adjustments to 2025 rates resulting from the BCUC's determinations on the Rate Framework. This approach is consistent with how interim and permanent rates were determined for the first year (i.e., 2020) of the Current MRP.

However, to provide an understanding of the rate implications of the various proposals included in this Application, FEI and FBC have calculated indicative rates for 2025, which are provided below. The tables below show the indicative 2025 delivery rate increase for FEI (Table C7-1) and indicative 2025 rate increase for FBC (Table C7-2). The tables group the rate impacts into three categories:

1. **Resetting MRP:** Adjustments to revenue requirements necessary to reset rate base at the termination of the Current MRP and the resetting of Base O&M for 2025. The rate base impact is due to adding to rate base the capital expenditures excluded during the Current MRP term (expenditures over the approved amounts). The adjustments to O&M are described in Sections C2.2.1 and C2.3.1.
2. **Studies:** Adjustments for the impacts of the various accounting and allocation studies which are described in Section D. These include the depreciation, lead/lag, corporate services, and capitalized overhead studies.
3. **Projected Revenue Requirements:** Includes the level of Regular forecast capital (and formula for FEI Growth capital) expenditures set out in Section C3, as well as the Major Projects that are expected to be included in rate base for each Company in 2025. For FEI, the deferral amortization includes an assumption of a five-year amortization period for the 2023-2024 Revenue Deficiency deferral account as well as the proposed one-year amortization of the unused funds in the CGIF deferral account. FortisBC has also included high-level projections of demand/load and other revenue requirement changes for 2025.

The indicative 2025 delivery rate increase for FEI, shown in Table C7-1 below, is 6.2 percent. Of this increase, approximately 2.5 percent is due to the impact of the BCUC Stage 1 GCOC

Decision.[133] The overall rates in 2025 include the delivery rate, as well as commodity and storage and transport rates. All else equal, the annual bill increase that results from the delivery rate increase is 4.2 percent, or $3.74 per month for the average residential customer.

Table C7-1: FEI Indicative 2025 Delivery Rate Change

Particular	Incremental Revenue Requirement ($millions)
Resetting MRP	
Rate Base	14.1
Base O&M	(9.2)
Subtotal	**4.9**
Studies	
Depreciation Study	2.0
Capitalized overheads study	5.9
Corporate Services	-
Cash Working Capital - Lead Lag	-
Subtotal	**7.9**
Projected Revenue Requirements	
Customer Growth and Volume - Margin	(23.9)
Rate Base Growth (2025)	13.4
Major Project - Inland Gas Upgrades	2.4
Major Project - CTS-TIMC	7.3
Net O&M	26.9
Deferral Amortization	0.6
2023/2024 Revenue Deficiency Deferral Amortization (GCOC)	13.0
2024 Deferred Deficiency (GCOC)	15.9
Taxes	7.7
Other	(3.8)
Subtotal	**59.5**
Total	**72.3**
Margin @ Existing Rates (2024 Approved)	1,164.4
Approximate Delivery Rate Change	**6.2%**

[133] The sum of the 2023-2024 Revenue Deficiency Deferral Account amortization and the 2024 deferred deficiency (both are related to the GCOC decision) is approximately $28.9 million, thus the equivalent delivery rate impact would be 2.5 percent ($28.9 million / $1,164.4 million).

For FBC, the indicative 2025 rate increase is 5.3 percent, as shown in Table C7-2 below. This is equal to approximately $9.47 per month for the average residential customer.

Table C7-2: FBC Indicative 2025 Rate Change

Particular	Incremental Revenue Requirement ($millions)
Resetting MRP	
Rate Base	0.6
Base O&M	3.7
Subtotal	**4.3**
Studies	
Depreciation Study	4.3
Capitalized overheads study	(0.4)
Corporate Services	-
Cash Working Capital - Lead Lag	0.2
Subtotal	**4.1**
Projected Revenue Requirements	
Net Margin (Revenue less Power Supply)	(1.7)
Rate Base Growth (2025)	6.1
Major Project - AS Mawdsley Substation	0.3
Net O&M	2.8
Deferral Amortization, excl. GCOC Deferral	1.9
2023 Revenue Deficiency Amortization (GCOC)	1.5
Taxes	3.1
Other	1.8
Subtotal	**16.0**
Total	**24.4**
Revenue @ Existing Rates (2024 Approved)	458.9
Approximate Rate Change	**5.3%**

The indicative rate increases for 2025 fall within the range of recent rate increases for both FEI and FBC. However, these projected rate impacts for 2025 should be considered indicative only and will be updated in FortisBC's future requests for interim rates to be filed later this year. The Companies will then file for permanent 2025 rates as part of the Annual Review process, subsequent to the BCUC issuing a decision on this Application.

FortisBC Energy Inc. and FortisBC Inc.
Application for Approval of a Rate Setting Framework for 2025 through 2027

Section D:

POLICIES AND SUPPORTING STUDIES

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D: POLICIES AND SUPPORTING STUDIES

1. INTRODUCTION TO SUPPORTING STUDIES

FortisBC will continue to report on any accounting policy changes in its Annual Reviews during the term of the Rate Framework and bring forward any changes for approval as required. In this Application, FortisBC is not proposing any accounting policy changes.

In the sections that follow, FortisBC provides updated studies that will support the calculation of FortisBC's revenue requirements for the term of the Rate Framework. These include:

- Section D2 – Depreciation Studies
- Section D3 – Lead/Lag Studies
- Section D4 – Corporate Services Study
- Section D5 – Capitalized Overhead Studies

In addition to the studies referenced above, FortisBC completed a review of the Cost Driver Approach for shared services between FEI and FBC, which was previously approved for use by the BCUC for the Current MRP. Based on discussions with the departments sharing services and a review of the cost pools for the shared resources, FortisBC confirmed that the cost driver approach, using the four current cost drivers (customers, employees, Massachusetts formula and management time estimate) remain appropriate. The Cost Driver Approach is simple to understand, easy to administer, and stable over time, and therefore superior to the timesheet approach used prior to the Current MRP.

As part of the Cost Driver Approach, during the Rate Framework term, FortisBC will annually review the allocation basis for each cost driver (e.g., for costs allocated using the number of customers, the number of FEI and FBC customers will be updated to determine the allocation percentage used), and update the percentages as required.

2. DEPRECIATION STUDIES

2.1 *INTRODUCTION*

In this Application, FEI and FBC are proposing updates to their respective depreciation rates and net salvage based on the results of the depreciation studies included in Appendix D2-1 (FEI) and Appendix D2-2 (FBC) (2022 Depreciation Studies). The filing of the 2022 Depreciation Studies in this Application complies with the BCUC directive in the MRP Decision and Orders G-165-20 and G-166-20 that FortisBC "update the depreciation studies for FEI and FBC prior to or along with its next RRA following the Proposed MRPs."

FortisBC retained Concentric to perform a review of the Companies' depreciation rates. The results of this review are included in the 2022 Depreciation Studies and have been prepared based on FEI's and FBC's plant-in-service balances as of December 31, 2022. The last depreciation studies were prepared using the plant-in-service balances for FEI and FBC as of December 31, 2017 (2017 Depreciation Studies).

Consistent with the 2017 Depreciation Studies, Concentric has estimated the depreciation rates using the straight-line method and the Average Life Group (ALG) procedure applied on a remaining life basis for each depreciable group of assets. The life and net salvage rates were developed using various statistical methods such as Iowa type survivor curves and "goodness of fit" criterion, a review of actual retirement activity, operational interviews with FEI and FBC staff, and informed judgement based on their experience in the gas and electric industries. The process followed by Concentric involves the determination of an estimated average service life for each asset class and whether certain assets have depreciation surpluses or deficits, both of which drive the recommended depreciation rates. Straight-line depreciation is developed for the assets in a particular class beginning with the original cost, the estimated average and remaining service life characteristics, and accounting for the accumulated depreciation already booked in that class.

In preparing the depreciation study for FEI, Concentric and FEI considered whether accelerated depreciation methods should be explored. As discussed in Section B3.2.2.4 of the Application, FEI does not consider it appropriate at this time to accelerate depreciation and thereby increase costs for customers. This is supported by Concentric in Section 3.1.2 of the 2022 Depreciation Study. While there is strong evidence that the future of conventional natural gas may be impacted by climate change legislation, the extent that this may change the useful life of FEI's assets remains unknown. An example cited in the 2022 Depreciation Study is the impact of hydrogen blending, which may potentially have a life lengthening impact on the transmission and distribution systems. However, additional research will be required across the entire hydrogen and natural gas supply chain to fill the current knowledge gap and better inform future decisions as to the impacts of hydrogen blending on the useful lives of the existing gas assets.

On pages 3-3 and 3-4 of the 2022 Depreciation Study, Concentric discusses the developments in other jurisdictions regarding the assessment and adoption of accelerated depreciation. Concentric's review did not identify any jurisdictions that have adopted economic planning

horizons – a form of accelerated depreciation – for setting depreciation rates for natural gas distribution utilities.

Concentric concludes on page 3-4 of the 2022 Depreciation Study:

> At this time, the future impacts of the relevant climate change legislation have not been sufficiently studied, nor have specific programs been put into place that would provide the indications of the changes in utilization levels. As the energy transition continues to evolve, a change in depreciation methodology may or may not be required in the future, depending on the impact that the energy transition has on the existing gas asset system.

The future impacts and whether they may require the introduction of an economic planning horizon into the depreciation rate calculations are better addressed in a future depreciation study filing and therefore were not included in the calculation and determination of depreciation rates in this Application.

As a result, the 2022 Depreciation Studies were prepared using methodologies consistent with the 2017 Depreciation Studies. The 2022 Depreciation Studies recommend updates for both depreciation rates and net salvage rates for FEI and FBC. The studies are summarized below.

2.2 *2022 DEPRECIATION STUDY FOR FEI*

FEI implemented the depreciation and net salvage rates from the 2017 Depreciation Study effective January 1, 2020 pursuant to the MRP Decision and Order G-165-20. FEI's 2022 Depreciation Study included in Appendix D2-1 was prepared based on its gas plant-in-service as of December 31, 2022.

The overall results of the 2022 Depreciation Study, consisting of the aggregate of rates for depreciation, net salvage and amortization of CIAC rates, are shown in Tables D2-1 and D2-2 below. Implementation of the rates from the 2022 Depreciation Study results in a net increase of aggregate depreciation and net salvage expense of approximately $2.0 million per year, a 0.02 percent overall increase to the composite depreciation rate compared to the current approved rates.

Table D2-1: Impact of Implementing Depreciation Study Recommendations for FEI ($ millions)

	Existing	Recommended	Change
Depreciation	201.9	198.0	(3.9)
Net Salvage	57.1	63.0	5.9
CIAC	(7.7)	(7.7)	0.0
Total	**251.3**	**253.3**	**2.0**

Table D2-2: Depreciation Study Average Rate Recommendations for FEI (%)

	Existing	Recommended	Change
Depreciation	2.50	2.45	(0.05)
Net Salvage	0.71	0.78	0.07
Total	**3.21**	**3.23**	**0.02**

Further discussion of Concentric's recommended changes to depreciation, net salvage and amortization of CIAC follows.

2.2.1 Depreciation Rates

The 2022 Depreciation Study was developed using the ALG depreciation methodology, consistent with the 2017 Depreciation Study. The 2022 Depreciation Study recommends an average composite depreciation rate of 2.45 percent for FEI, which is a decrease of 0.05 percent from the 2.50 percent derived from the 2017 Depreciation Study.

While there are certain specific asset classes that are expected to have slightly longer service lives based on actual retirement history, the overall decrease in the average composite depreciation rate is not indicative of overall longer expected service lives for FEI's assets. Instead, the adjustment downward in the average composite depreciation rate is primarily attributable to depreciation surpluses for certain asset classes that put downward pressure on the depreciation rates. The existence of depreciation surpluses and deficits occur in the normal course of asset retirements and one of the objectives for undertaking a depreciation study on a cyclical basis is to recommend depreciation rates that will prospectively unwind such variances.

As a result, FEI's total depreciation expense is decreasing by approximately $3.9 million due to the changes in the depreciation rates. This change excludes the effects on depreciation expense resulting from future additions and retirements to property, plant and equipment (PP&E), as well as changes to the net salvage rates. The recommended depreciation rates are set out in Table D2-3 below. Rates noted with an asterisk are not included in the depreciation study since they are calculated separately by reference to other criteria (for example, lease structures and vehicles are depreciated based on specific lease terms).

Table D2-3: Impact of Implementing Recommended Depreciation Rates for FEI

Line #	Class	Description	2017 Depreciation Study Rate	2022 Depreciation Study Rate	Depreciation Based on 2017 Depreciation Study Rate	Depreciation Based on 2022 Depreciation Study Rate	Increase + / Decrease -
1	175-00	Unamortized Conversion Expense - Squamish*	10.00%	10.00%	-	-	-
2	175-10	Unamortized Conversion Expense *	1.00%	1.00%	1,087	1,087	-
3	178-00	Organization expense	1.00%	1.00%	7,281	7,281	-
4	401-01	Franchises and Consents	1.08%	2.50%	2,127	4,923	2,796
5	402-01	Computer S/W-Applic 8 Year	12.50%	12.50%	9,745,779	9,745,779	-

Line #	Class	Description	2017 Depreciation Study Rate	2022 Depreciation Study Rate	Depreciation Based on 2017 Depreciation Study Rate	Depreciation Based on 2022 Depreciation Study Rate	Increase + / Decrease -
6	402-02	Computer S/W-Applic 5 Year	20.00%	20.00%	5,187,441	5,187,441	-
7	402-03	Intangible Plant	2.50%	2.50%	47,665	47,665	-
8	432-00	Mfg. Gas Structures	2.50%	2.50%	32,801	32,801	-
9	433-00	Mfg. Gas Equipment	5.00%	5.00%	60,057	60,057	-
10	434-00	Mfg. Gas Holders	2.50%	2.50%	73,702	73,702	-
11	436-00	Mfg. Gas Compressor Equipment	4.00%	4.00%	14,663	14,663	-
12	437-00	Mfg. Gas Meas/Reg Equipment	5.00%	5.00%	108,524	108,524	-
13	442-00	LNG Gas Structures - Tilbury	2.20%	3.70%	2,238,729	3,765,136	1,526,407
14	443-00	LNG Gas Equipment - Tilbury	1.23%	1.71%	2,259,197	3,140,835	881,638
15	448-11	LNG Gas - Piping - Tilbury	2.45%	2.50%	1,294,644	1,321,065	26,421
16	448-21	LNG Gas - Pre-Treatment - Tilbury	3.84%	4.01%	1,309,402	1,367,371	57,969
17	448-31	LNG Gas - Liquefaction Equipment - Tilbury	2.45%	2.50%	2,176,167	2,220,579	44,412
18	448-41	LNG Gas - Send Out Equipment - Tilbury	2.41%	2.50%	257,279	266,887	9,608
19	448-51	LNG Gas - Sub-Station and Electrical - Tilbury	2.41%	2.50%	921,708	956,129	34,421
20	448-61	LNG Gas - Control Room - Tilbury	6.09%	6.75%	280,632	311,046	30,414
21	449-00	LNG Gas Other Equipment - Tilbury	2.77%	2.10%	802,060	608,060	(194,000)
22	442-01	LNG Gas - Structures Mt Hayes	3.85%	3.06%	735,286	584,409	(150,877)
23	443-05	LNG Gas Equipment Mt Hayes	1.65%	1.65%	1,020,302	1,020,302	-
24	448-10	LNG Gas - Piping Mt Hayes	2.45%	2.43%	311,504	308,962	(2,542)
25	448-20	LNG Gas - Pre-Treatment Mt Hayes	3.84%	3.71%	1,126,953	1,088,801	(38,152)
26	448-30	LNG Gas - Liquefaction Equipment Mt Hayes	2.45%	2.42%	709,019	700,337	(8,682)
27	448-40	LNG Gas - Send Out Equipment Mt Hayes	2.41%	2.43%	572,212	576,961	4,749
28	448-50	LNG Gas - Sub-Station and Electrical Mt Hayes	2.41%	2.43%	525,097	529,455	4,358
29	448-60	LNG Gas - Control Room Mt Hayes	6.09%	5.01%	405,880	333,902	(71,978)
30	448-65	LNG Gas - Mt. Hayes Inspection*	20.00%	20.00%	314,372	314,372	-
31	449-01	LNG Gas - Other Equipment Mt Hayes	3.08%	3.47%	188,911	212,831	23,920
32	465-30	LNG - Mains Mt Hayes	1.54%	1.54%	97,127	97,127	-
33	467-00	LNG - Measuring and Regulating Equipment Mt Hayes	2.34%	2.28%	138,748	135,190	(3,558)
34	462-00	TP Compressor Structures	3.32%	2.97%	1,531,788	1,370,304	(161,484)
35	463-00	TP Meas/Reg Structures	2.13%	2.19%	553,574	569,167	15,593

Line #	Class	Description	2017 Depreciation Study Rate	2022 Depreciation Study Rate	Depreciation Based on 2017 Depreciation Study Rate	Depreciation Based on 2022 Depreciation Study Rate	Increase + / Decrease -
36	464-00	TP Other Structures	3.62%	3.31%	248,731	227,431	(21,300)
37	465-00	TP Transmission Pipeline	1.46%	1.48%	24,524,862	24,860,819	335,957
38	465-20	TP Mains - Inspection *	15.20%	15.20%	5,782,682	5,782,682	-
39	465-10	TP Mains - Byron Creek *	5.03%	5.03%	68,966	68,966	-
40	466-00	TP Compressor Equipment	2.42%	2.31%	4,913,889	4,690,530	(223,359)
41	466-10	TP Compressor Equipment - Overhauls *	10.19%	10.19%	887,899	887,899	-
42	467-10	TP Meas/Reg Equipment	2.12%	2.27%	1,977,089	2,116,978	139,889
43	467-20	TP Telemetry Equipment	8.97%	6.01%	1,967,271	1,318,094	(649,177)
44	467-30	TP Meas/Reg Equipment - Byron Creek *	2.41%	2.41%	7,023	7,023	-
45	468-00	TP Communications Equipment	0.00%	0.00%	-	-	-
46	465-11	IP Transmission Pipeline (Whistler Pipeline)	1.54%	1.53%	909,244	903,340	(5,904)
47	467-31	IP Meas/Reg Equipment (Whistler Pipeline)	2.26%	2.14%	7,082	6,706	(376)
48	472-00	DS Structures	2.15%	2.01%	1,169,978	1,093,794	(76,184)
49	472-10	DS Structures - Byron Creek *	4.67%	4.67%	5,773	5,773	-
50	473-00	DS Services	2.18%	2.11%	33,469,477	32,394,769	(1,074,708)
51	474-00	DS Meters/Regulators Installations	7.45%	4.35%	2,767,849	1,616,126	(1,151,723)
52	474-02	DS Meters/Regulators Installations New	4.55%	4.55%	10,922,774	10,922,774	-
53	475-00	DS Mains	1.35%	1.42%	30,801,754	32,398,882	1,597,128
54	476-00	DS NGV Fuel Equipment	0.00%	0.00%	-	-	-
55	477-30	DS Meas/Reg Equipment - Byron Creek	0.00%	0.00%	-	-	-
56	477-20	DS Telemetering	3.59%	4.97%	1,042,409	1,443,112	400,703
57	477-10	DS Meas/Reg Additions	2.51%	2.66%	5,711,764	6,053,105	341,341
58	478-10	DS Meters	6.06%	3.38%	7,649,628	4,266,624	(3,383,004)
59	478-20	DS Instruments	2.92%	2.86%	458,658	449,234	(9,424)
60	472-20	Biogas - Structures and Improvements	2.69%	2.69%	40,830	40,830	-
61	475-10	Biogas - Mains on Municipal Land	1.56%	1.54%	27,344	26,993	(351)
62	475-20	Biogas - Mains on Private Land	1.56%	1.53%	6,401	6,278	(123)
63	418-10	Biogas - Purication Overhaul	5.00%	5.00%	1,021	1,021	-
64	418-20	Biogas - Purification Upgrader	5.00%	5.00%	502,598	502,598	-
65	477-40	Biogas - Reg and Meter Equipment	3.22%	3.24%	139,103	139,967	864
66	474-10	Biogas - Reg and Meter Installations	5.32%	5.08%	42,676	40,751	(1,925)

Line #	Class	Description	2017 Depreciation Study Rate	2022 Depreciation Study Rate	Depreciation Based on 2017 Depreciation Study Rate	Depreciation Based on 2022 Depreciation Study Rate	Increase + / Decrease -
67	478-30	Biogas - Meters	4.89%	5.19%	4,118	4,371	253
68	476-10	NGV - Transport CNG Dispensing Equipment	5.00%	5.00%	856,043	856,043	-
69	476-20	NGV - Transport LNG Dispensing Equipment	5.00%	5.00%	685,688	685,688	-
70	476-30	NGV - Transport CNG Foundations	5.00%	5.00%	158,062	158,062	-
71	476-40	NGV - Transport LNG Foundations	5.00%	5.00%	52,440	52,440	-
72	476-50	NGV - Transport LNG Pumps	10.00%	10.00%	7,688	7,688	-
73	476-60	NGV - CNG Dehydrator	5.00%	5.00%	40,202	40,202	-
74	482-10	GP (Frame) Structures	3.17%	2.75%	862,349	748,094	(114,255)
75	482-20	GP (Masonry) Structures	1.52%	1.36%	2,006,579	1,795,360	(211,219)
76	482-30	GP (Leased) Structures *	9.49%	9.49%	329,752	329,752	-
77	483-10	GP Computer Hardware	25.00%	25.00%	12,678,703	12,678,703	-
78	483-20	GP Computer Systems Software	12.50%	12.50%	1,068,140	1,068,140	-
79	483-30	GP Office Equipment	6.67%	6.67%	153,629	153,629	-
80	483-40	GP Furniture	5.00%	5.00%	828,787	828,787	-
81	484-00	GP Vehicles	11.07%	7.15%	6,057,656	3,912,578	(2,145,078)
82	484-10	Vehicles-Leased*	9.44%	9.44%	69,134	69,134	-
83	485-10	GP Heavy Work Equipment	5.14%	4.04%	37,154	29,202	(7,952)
84	485-20	GP Heavy Mobile Equipment	6.09%	8.51%	741,722	1,036,463	294,741
85	486-00	GP Small Tools/Equipment	5.00%	5.00%	2,970,799	2,970,799	-
86	488-10	GP Telephone Equipment	6.67%	6.67%	81,590	81,590	-
87	488-20	GP Radio Equipment	6.67%	6.67%	1,138,352	1,138,352	-
88		**Total Annual Depreciation**			**201,935,080**	**198,001,327**	**(3,933,753)**
89							
90		**Annual Composite Rate**			**2.50%**	**2.45%**	**-0.05%**

Note: Numbers above are in dollars with depreciation calculated using the January 1, 2023 gross asset values.

The asset categories with the more significant changes in depreciation expense as compared to the 2017 Depreciation Study are:

- LNG Gas Structures – Tilbury (442-00)
- LNG Gas Equipment – Tilbury (443-00)
- Services (473-00)
- Distribution Mains (475-00)

- Meters and Regulators Installations (474-00, 474-02)
- Meters (478-10)
- GP Vehicles (484-00)

Each of these asset categories is discussed below. Please refer to pages 3-7 to 3-21 of the 2022 Depreciation Study for further details and discussion.

2.2.1.1 LNG Gas Structures – Tilbury (442-00)

For LNG Gas Structures – Tilbury (442-00), Concentric recommends a 28-year life, an increase from the 25-year service life recommended in the 2017 Depreciation Study.

A review of retirements, additions, and other plant transactions for the period 1972 to 2022 along with the recent Tilbury 1A (T1A) additions into rate base suggest that an average service life of 28 years is more indicative for this account and is also consistent with the average service life for the Mt. Hayes plant. Extending the average life by three years is also in alignment with operational and management staff opinion and supported by Concentric's professional judgment. Please refer to page 3-7 of Appendix D2-1 for further details.

The large new additions that this asset class has experienced in the past five years and the true-up for the depreciation rate over the remaining life of the assets result in an increase of approximately 1.5 percent in the depreciation rate for LNG Gas Structures – Tilbury. The inclusion of a true-up in the development of the depreciation rate is necessary to recognize that over the life of a group of assets, differences may arise (i.e., due to change in the expected life of assets) between the booked and the calculated (theoretical) accumulated depreciation reserve.

2.2.1.2 LNG Gas Equipment – Tilbury (443-00)

For 443-00 LNG Gas Equipment – Tilbury, Concentric recommends a 57-year life, an increase from the 40-year service life recommended in the previous study.

Account 443-00 LNG Gas Equipment – Tilbury, includes both the more recent T1A additions and the existing Base Plant assets. With the addition of the costs for T1A to this account since the 2017 Depreciation Study, the estimated life used for depreciation for account 443-00 LNG Gas Equipment – Tilbury has been revised to 57 years based on the Iowa curve 57-S4, and represents an increase from the 40 years previously estimated. The estimated 60-year life for the T1A LNG Gas Equipment is also applied to account 443-05 LNG Gas Equipment Mt. Hayes. Please refer to pages 3-8 and 3-9 of Appendix D2-1 for further details.

The large new additions that this asset class have experienced in the past five years and the true-up for the depreciation rate over the remaining life of the assets results in an increase of 0.48 percent in the depreciation rate for LNG Gas Equipment – Tilbury.

2.2.1.3 Services (473-00)

For Services (473-00), Concentric recommends a 47-year life, consistent with the 2017 Depreciation Study.

A review of retirements, additions, and other plant transactions for the period 1963 to 2022 suggests that an average service life of 47 years continues to be reflective of the historical retirement activity and future expectations for retirements and falls within the typical range of lives used for this account.

The average age of retirement experienced from 2017 through 2022 indicated no material changes since the last study; therefore, the 47-year life still captures the initial retirements up until age 30. Additionally, in determining the recommended 47-year life, Concentric reviewed a selection of peer Canadian natural gas distribution companies and the average service life estimates among these peers ranged from 45 through 70 years.

Please refer to pages 3-14 and 3-15 of Appendix D2-1 for further details.

The true-up for the depreciation rate over the remaining life of the assets result in a decrease of 0.07 percent in the depreciation rate for Services.

2.2.1.4 Distribution Mains (475-00)

For Distribution Mains (475-00), Concentric recommends a 65-year life, consistent with the 2017 Depreciation Study. The Distribution Mains account contains both steel and plastic distribution mains, with plastic mains first being installed in 1981. FEI has an ongoing mains replacement program based on age and risk of future problems. Almost all of the pipe being replaced is older vintages, suggesting the life of mains should be on the longer end of the range experienced by peer utilities, where service life estimates ranged from an average of 55 through 80 years.

A recent review of retirements, additions, and other plant transactions for the period 1924 to 2022 suggest that an average service life of 65 years continues to be reflective of the historical data. Discussions with operational and management staff indicated that the currently approved life is still a good representation of the historical life and future expectations for Distribution Mains which is further supported by the professional judgement of Concentric.

The average age of retirement experienced from 2017 through 2022 indicated no material changes since the last study and the future expectations for retirements are expected to remain consistent.

Please refer to pages 3-16 and 3-17 of Appendix D2-1 for further details.

The true-up for the depreciation rate over the remaining life of the assets results in an increase of 0.07 percent in the depreciation rate for Distribution Mains.

2.2.1.5 Meters and Regulators Installations (474-00, 474-02) and Meters (478-10)

The Meters and Regulators Installations (474-00 and 474-02) and Meters (478-10) accounts will be impacted by the exchange of new AMI meters for existing meters as part of the approved AMI project. Below, FEI provides the accounting for these accounts and a discussion of the recommended depreciation rates, incorporating the expected impacts of the AMI project.

2.2.1.5.1 RECOVERY OF EXISTING METERS AND INSTALLATION COSTS AND PREVIOUSLY RETIRED METERS AND INSTALLATION COSTS

FEI's existing meters and their installation costs will be removed from service as they are exchanged with new AMI meters in phases over the term of the AMI project. In accordance with Decision and Order C-2-23, the remaining rate base value of meters to be exchanged as part of the AMI project (account 478-10), along with the associated meter installation costs (accounts 474-00, 474-02), are to be captured in the "Existing Meter Cost Recovery" deferral account with a rolling amortization period of five years.

The same treatment was approved for the remaining rate base value of previously retired meters and meter installation costs, which currently reside in accumulated depreciation for accounts 478-10, 474-00 and 474-02, except that these amounts are captured in a separate account called the "Previously Retired Meter Cost Recovery" deferral account.

2.2.1.5.2 METERS AND REGULATORS INSTALLATIONS (474-00, 474-02)

In developing the recommended depreciation rate for Meters and Regulators Installations (474-00), Concentric excluded the recovery of historical losses for previously retired assets from the calculation, as the historical losses are being recovered using the Previously Retired Meter Cost Recovery deferral account. The historical losses are currently recorded in the accumulated depreciation account and will be transferred to the Previously Retired Meter Cost Recovery deferral account beginning January 1, 2025.

For Meters and Regulators Installations (474-00), approximately 77 percent of this account relates to the installation costs of older gas meters that follow an amortization accounting method and are expected to be completely retired in 2035 or sooner as part of the AMI project. The remaining 23 percent of this account is for assets relating to installation of station regulators that are almost fully amortized, following traditional regulatory retirement accounting practices, and are expected to be in service until the end-of-life of the asset.

For the recovery of the remaining net book value of the meter assets (meter installation and station regulators) recorded in 474-00, Concentric recommends an Iowa 23-SQ, a change from the previously approved weighted approach of an Iowa 20-S0 and 23-SQ for this account. The Iowa 23-SQ is recommended for the meter installation and station regulator assets based on indications from management and operations, and on the professional judgement of Concentric. As the majority of the investment in this account relates to assets under amortization accounting, there was no retirement rate analysis prepared. The recommended depreciation rate applies to

the assets that are being retired in phases through the AMI project and to those assets expected to remain in service until their end-of-life.

For the Meters and Regulators Installations 474-02 account, which was established to capture new plant additions only, similar to the reasons outlined for 474-00, Concentric recommends an Iowa 22-SQ, resulting in similar recommended depreciation rates for both accounts 474-00 and 474-02.

For the meter installations that are being retired in phases due to the AMI project, the remaining net book value will be transferred to the Existing Meter Cost Recovery deferral account.

Please refer to pages 3-15 and 3-16 of Appendix D2-1 for further details.

This change and the true-up of the depreciation rate over the remaining life of the assets result in a decrease of 3.10 percent in the depreciation rate for this asset category.

2.2.1.5.3 METERS (478-10)

In developing the recommended depreciation rate for Meters (478-10), Concentric excluded the recovery of historical losses for previously retired meter assets from the calculation, as the historical losses are being recovered using the Previously Retired Meter Cost Recovery deferral account. The historical losses are currently recorded in the accumulated depreciation account and will be transferred to the Previously Retired Meter Cost Recovery deferral account beginning January 1, 2025.

For Meters (478-10), approximately 60 percent of the assets residing in the account relate to meters subject to retirement under the AMI project, while the remaining 40 percent of assets in this account follow traditional regulatory retirement accounting practices and are expected to be in service until the end-of-life of the asset.

For the recovery of the remaining net book value of the meter assets, Concentric recommends changing the annual depreciation accrual to be weighted in accordance with the retirement practices for each of the two groups of assets in this account. Concentric recommends an Iowa 5-SQ for meters subject to retirement under the AMI project and an Iowa 18-R4 for the remainder of the assets in this account. These recommended survivor curves are based on indications from management and operations, and on the professional judgement of Concentric. This approach results in recognizing both the straight-line amortization accounting treatment as well the typical retirement patterns of the non-amortized metering assets. The recommended depreciation rate applies to both the meters that are being retired in phases through the AMI project and to those meters expected to remain in service until their end-of-life.

For meters that are being retired in phases due to the AMI project, the remaining net book value will be transferred to the Existing Meter Cost Recovery deferral account.

Please refer to pages 3-18 and 3-19 of Appendix D2-1 for further details.

This change and the true-up of the depreciation rate over the remaining life of the assets result in a decrease of 2.68 percent in the depreciation rate for this asset category.

2.2.1.6 GP Vehicles (484-00)

For GP Vehicles (484-00), Concentric recommends a 10-year life, an increase from the 7-year service life recommended in the 2017 Depreciation Study.

A review of retirements, additions, and other plant transactions for the period 1957 to 2022 suggests that an average service life of 10 years is more reflective of the historical retirement activity, and 10 years falls within the typical range of lives used for this account by peer companies which is between 7 and 16 years. Most of the retirements in this account occur up until age 21. Therefore, lengthening the life by three years provides a better fit with the historical data and is aligned with the views of FEI operational and subject matter experts that the recommended 10-year life is consistent with the future retirement activity expected for this account.

Please refer to pages 3-20 and 3-21 of Appendix D2-1 for further details.

This change and the true-up of the depreciation rate over the remaining life of the assets result in a decrease of 3.92 percent in the depreciation rate for this asset category.

2.2.2 Net Salvage

As approved by the BCUC, FEI provides for net salvage (removal costs less salvage proceeds) on its existing assets as a cost of providing service, recovered from customers over the useful life of the asset:[134]

> The Commission Panel directs the FEU to continue forecasting salvage costs in each test period and to include this estimate in future revenue requirements applications.

The 2022 Depreciation Study includes updated estimates of net salvage rates which FEI has included in amortization expense. As directed by the BCUC, FEI records its negative salvage provision in its deferral schedules rather than within the plant continuity schedules:[135]

> Therefore, the Commission Panel directs the FEU to establish a rate base credit account to tabulate the total net negative salvage provisions less actual salvage costs. The Panel does not approve the presentation of the net negative salvage provision as a component of plant-in-service within the Utilities' assets.

The result is that the net salvage expense is included as a component of deferred charge amortization expense.

[134] FortisBC Energy Utilities (FEU) 2012-2013 Revenue Requirements and Rates Decision and Order G-44-12, p. 85.
[135] FEU 2012-2013 Revenue Requirements and Rates Decision and Order G-44-12, p. 84.

The updated net salvage rates based on gas plant-in-service as of December 31, 2022 are included in Appendix D2-1, Section 5.

The asset classes where net salvage is included are shown in Table D2-4 below, comparing the recommended and existing net salvage rates and the impact on net salvage expense. As recommended by the 2022 Depreciation Study, the average composite net salvage rate increases from 0.71 percent using the current approved rates to 0.78 percent using the recommended rates. The recommended net salvage rate increase is supported by the increases in FEI's actual cost of asset removal activities. This change results in an increase to net salvage expense of approximately $5.9 million.

1 **Table D2-4: Impact of Implementing Recommended Net Salvage Rates for FEI**

Line #	Class	Description	Net Salvage 2017	Net Salvage 2022	2017 Depreciation Study Net Salvage Rate	2022 Depreciation Study Net Salvage Rate	Net Salvage Based on 2017 Rate	Net Salvage Based on 2022 Rate	Increase + / Decrease -
1	437-00	Mfg. Gas Meas/Reg Equipment	n/a	n/a	0.00%	0.00%	-	-	-
2	442-00	LNG Gas Structures	-10%	-10%	0.68%	0.30%	691,971	305,281	(386,690)
3	443-00	LNG Gas Equipment - Tilbury	-20%	-20%	1.12%	0.30%	2,057,155	551,024	(1,506,131)
4	449-00	LNG Gas Other Equipment	-10%	-5%	0.82%	-0.17%	237,433	(49,224)	(286,657)
5	442-01	LNG Gas - Structures Mt. Hayes	-10%	-10%	0.49%	0.40%	93,582	76,393	(17,189)
6	443-05	LNG Gas Equipment Mt. Hayes	-20%	-20%	0.36%	0.36%	222,611	222,611	-
7	448-10	LNG Gas - Piping Mt. Hayes	-10%	-10%	0.28%	0.28%	35,601	35,601	-
8	448-11	Piping - Tilbury	-10.00%	-10.00%	0.28%	0.24%	147,959	126,822	(21,137)
9	448-20	LNG Gas - Pre-Treatment Mt Hayes	-10%	-10%	0.50%	0.48%	146,739	140,869	(5,870)
10	448-21	Pre-treatment - Tilbury	-10.00%	-10.00%	0.50%	0.34%	170,495	115,937	(54,558)
11	448-30	LNG Gas - Liquefaction Equipment Mt Hayes	-20%	-20%	0.57%	0.57%	164,955	164,955	-
12	448-31	Liquefaction Equipment - Tilbury	-20.00%	-20.00%	0.57%	0.46%	506,292	408,587	(97,705)
13	448-40	LNG Gas - Send Out Equipment Mt Hayes	-10%	-10%	0.28%	0.28%	66,481	66,481	-
14	448-41	Send Out Equipment - Tilbury	-10.00%	-10.00%	0.28%	0.25%	29,891	26,689	(3,202)
15	448-50	LNG Gas - Sub-Station and Electrical Mt Hayes	-20%	-20%	0.56%	0.57%	122,014	124,193	2,179
16	448-51	Substation and Electrical - Tilbury	-20.00%	-20.00%	0.56%	0.48%	214,173	183,577	(30,596)
17	449-01	LNG Gas - Other Equipment Mt Hayes	-10.00%	-5.00%	0.32%	0.14%	19,627	8,587	(11,040)
18	465-30	LNG - Mains Mt Hayes	-20%	-20%	0.30%	0.31%	18,921	19,552	631

Line #	Class	Description	Net Salvage 2017	Net Salvage 2022	2017 Depreciation Study Net Salvage Rate	2022 Depreciation Study Net Salvage Rate	Net Salvage Based on 2017 Rate	Net Salvage Based on 2022 Rate	Increase + / Decrease -
19	467-00	LNG - Measuring and Reg Equip Mt Hayes	-7.00%	-5.00%	0.21%	0.13%	12,452	7,708	(4,744)
20	462-00	TP Compressor Structures	-3%	-3%	0.11%	0.12%	50,752	55,366	4,614
21	463-00	TP Meas/Reg Structures	-15.00%	-15.00%	0.62%	0.46%	161,134	119,551	(41,583)
22	464-00	TP Other Structures	-5%	-5%	0.29%	0.25%	19,926	17,178	(2,748)
23	465-00	TP Transmission Pipeline	-20.00%	-23.00%	0.42%	0.47%	7,055,097	7,894,990	839,893
24	467-20	TP Telemetry Equipment	n/a	0.00%	0.00%	0.02%	-	4,386	4,386
25	466-00	TP Compressor Equipment	-3.00%	-3.00%	0.07%	0.10%	142,137	203,053	60,916
26	467-10	TP Meas/Reg Equipment	-5%	-5%	0.16%	0.14%	149,214	130,563	(18,651)
27	465-11	IP Transmission Pipeline (Whistler Pipeline)	-20%	-20%	0.34%	0.33%	200,742	194,838	(5,904)
28	467-31	IP Meas/Reg Equipment (Whistler Pipeline)	-7.00%	-7.00%	0.35%	0.19%	1,097	595	(502)
29	472-00	DS Structures	-15%	-20%	0.52%	0.53%	282,971	288,413	5,442
30	473-00	DS Services	-70%	-85%	2.09%	2.47%	32,087,709	37,921,838	5,834,129
31	474-00	DS Meters/Regulators Installations	-20.00%	-20.00%	3.37%	0.87%	1,252,034	323,225	(928,809)
32	474-02	DS Meters/Regulators Installations New	n/a	0%	0.00%	0.00%	-	-	-
33	475-00	DS Mains	-25.00%	-30.00%	0.50%	0.56%	11,408,057	12,777,024	1,368,967
34	477-20	DS Telemetering	-5.00%	-5.00%	0.48%	0.31%	139,375	90,013	(49,362)
35	477-10	DS Meas/Reg Additions	-12.00%	-12.00%	0.45%	0.40%	1,024,021	910,241	(113,780)
36	478-10	DS Meters	n/a	0%	0.00%	-0.17%	-	(214,594)	(214,594)
37	472-20	Biogas - Structures and Improvements	-10%	-10%	0.29%	0.28%	4,402	4,250	(152)
38	475-10	Biogas - Mains on Municipal Land	-25.00%	-25.00%	0.39%	0.38%	6,836	6,661	(175)
39	475-20	Biogas - Mains on Private Land	-25%	-25%	0.39%	0.39%	1,600	1,600	-

Line #	Class	Description	Net Salvage 2017	Net Salvage 2022	2017 Depreciation Study Net Salvage Rate	2022 Depreciation Study Net Salvage Rate	Net Salvage Based on 2017 Rate	Net Salvage Based on 2022 Rate	Increase + / Decrease -
40	477-40	Biogas - Reg and Meter Equipment	n/a	0.00%	0.00%	0.01%	-	432	432
41	418-20	Biogas - Purification Upgrader	-5.00%	-5.00%	0.24%	0.25%	24,125	25,130	1,005
42	474-10	Biogas - Reg and Meter Installations	-25%	-25%	1.44%	1.29%	11,551	10,348	(1,203)
43	478-30	Biogas - Meters	n/a	0.00%	0.00%	-0.02%	-	(17)	(17)
44	482-10	GP (Frame) Structures	-4.00%	-4.00%	0.37%	0.38%	100,653	103,373	2,720
45	482-20	GP (Masonry) Structures	-4%	-10%	0.08%	0.18%	105,609	237,621	132,012
46	484-00	GP Vehicles	15%	15%	-3.70%	-1.55%	(2,024,691)	(848,181)	1,176,510
47	485-10	GP Heavy Work Equipment	5%	5%	-0.67%	-0.18%	(4,843)	(1,301)	3,542
48	485-20	GP Heavy Mobile Equipment	15.00%	0.00%	-0.67%	1.72%	(81,602)	209,485	291,087
49		**Total Annual Net Salvage**					**57,076,258**	**63,001,724**	**5,925,466**
50									
51		**Annual Composite Rate**					**0.71%**	**0.78%**	**0.07%**

Note: Numbers above are in dollars with depreciation calculated using the January 1, 2023 gross asset values.

The asset categories that account for the majority of the change in net salvage expense are:

- LNG Gas Equipment – Tilbury (443-00)
- Services (473-00)
- Distribution Mains (475-00)
- GP Vehicles (484-00)

Each of these accounts is discussed below. Please refer to pages 3-7 to 3-21 of Appendix D2-1 for further details and discussion.

2.2.2.1 LNG Gas Equipment – Tilbury (443-00)

For LNG Gas Equipment – Tilbury (443-00), Concentric recommends a negative 20 percent rate to represent the net salvage expectations, consistent with the 2017 Depreciation Study. There have been no recorded retirements since 2008 for this account, and no net salvage has been recorded in the years since the 2017 Depreciation Study. Even though the net salvage percent remains at negative 20 percent, Concentric recommends a decrease in the net salvage provision rate of approximately 0.82 percent for this asset category to true up the accumulated net salvage surplus as a result of increasing the expected average service life of the asset category from 40 to 57 years.

2.2.2.2 Services (473-00)

For Services (473-00), Concentric recommends a negative 85 percent rate to represent the net salvage expectations, an increase from the negative 70 percent recommended in the 2017 Depreciation Study. This account continues to experience a significant amount of net salvage activity consistent with prior years. A recent review of the retirements and discussions with FEI's management indicates that the historical results are a reasonable basis for future expectations for the equipment in this account. The recommended increase by negative 15 percent leads to an increase of approximately 0.38 percent in the overall net salvage rate for this asset category.

2.2.2.3 Distribution Mains (475-00)

For Distribution Mains (475-00), Concentric recommends a negative 30 percent rate to represent the net salvage expectations, an increase from the negative 25 percent recommended in the 2017 Depreciation Study. This account continues to experience a significant amount of net salvage activity consistent with prior years. A recent review of the retirements and discussions with FEI's management indicates that the historical results are a reasonable basis for future expectations for the equipment in this account. The recommended increase by negative 5 percent leads to an increase of approximately 0.06 percent in the overall net salvage rate for this asset category.

2.2.2.4 GP Vehicles (484-00)

For GP Vehicles (484-00), Concentric recommends a positive 15 percent rate to represent the net salvage expectations, consistent with the 2017 Depreciation Study. Even though the net salvage percent remains at positive 15 percent, Concentric recommends an increase in the net salvage provision rate of approximately 2.15 percent for this asset category primarily to true up the accumulated net salvage surplus. The inclusion of a true-up in the development of the net salvage depreciation rate is necessary to recognize that over the life of a group of assets, differences may arise (i.e., due to change in expected life of assets) between the booked and the calculated (theoretical) net salvage provision.

2.2.3 Amortization of Contributions in Aid of Construction

Consistent with past practice, the amortization rate for CIAC is calculated as a function of the depreciation rates for Transmission and Distribution plant, the asset types that CIAC is received for.

The recommended amortization rates of 1.72 percent[136] for Distribution CIAC and 1.48 percent[137] for Transmission CIAC are based on the average of the recommended depreciation rates for the Distribution Services, Mains and Meters/Regulators Installation costs and Transmission Pipeline and IP Transmission Pipeline. The decrease of 0.02 percent in the Distribution CIAC amortization rate is offset by a 0.02 percent increase in the Transmission CIAC amortization rate, resulting in no impact on the overall CIAC amortization expense.

2.3 *2022 DEPRECIATION STUDY FOR FBC*

FBC implemented the depreciation and net salvage rates from the 2017 Depreciation Study effective January 1, 2020 pursuant to the MRP Decision and Order G-166-20. FBC's 2022 Depreciation Study, which is included in Appendix D2-2, has been prepared based on the electric plant-in-service as of December 31, 2022. The overall results of the 2022 Depreciation Study, consisting of the aggregate of rates for depreciation, net salvage and amortization of CIAC rates, are compared to the overall results of the 2017 Depreciation Study and are shown in Tables D2-5 and D2-6 below. Implementation of the rates from the 2022 Depreciation Study results in a net increase of aggregate depreciation and net salvage expense of approximately $4.3 million per year, an approximate 0.20 percent overall increase in the composite depreciation rate compared to the current approved rates.

[136] For FEI Distribution CIAC, the rate is calculated by dividing the sum of the depreciation for DS Services, Mains and Meter installation costs by the sum of their original cost at December 31, 2022.
[137] For FEI Transmission CIAC, the rate is calculated by dividing the sum of the depreciation for Transmission Pipeline and IP Pipeline by the sum of their original cost at December 31, 2022.

Table D2-5: Impact of Implementing Depreciation Study Recommendations for FBC ($ millions)

	Existing	Recommended	Change
Depreciation	53.8	57.0	3.2
Net Salvage	16.0	17.2	1.2
CIAC	(4.7)	(4.8)	(0.1)
Total	**65.3**	**69.6**	**4.3**

Table D2-6: Depreciation Study Average Rate Recommendations for FBC (%)

	Existing	Recommended	Change
Depreciation	2.26	2.40	0.14
Net Salvage	0.71	0.77	0.06
Total	**2.97**	**3.17**	**0.20**

Further discussion of the recommended changes by Concentric to the depreciation, net salvage, and amortization of CIAC follows.

2.3.1 Depreciation Rates

The 2022 Depreciation Study was developed using the ALG depreciation methodology consistent with the previous 2017 Depreciation Study. The implementation of the recommended 2022 Depreciation Study rates results in an increase to the average composite depreciation rate for FBC from 2.26 percent to 2.40 percent. This results in FBC's total depreciation expense increasing by approximately $3.2 million. This change excludes the effects on depreciation expense resulting from future additions and retirements to PP&E as well as changes to the net salvage rates. The recommended depreciation rates, excluding the net salvage rates, are set out in Table D2-7 below.

Table D2-7: Impact of Implementing Recommended Depreciation Rates for FBC

Line #	Class	Description	2017 Depreciation Study Rate	2022 Depreciation Study Rate	Depreciation Based on 2017 Depreciation Study Rate	Depreciation Based on 2022 Depreciation Study Rate	Increase + / Decrease -
1	330.10	Land Rights	1.07%	1.02%	10,287	9,806	(481)
2	331.00	Structures and Improvements	1.38%	1.42%	289,925	298,329	8,404
3	332.00	Reservoirs, dams, and waterways	1.41%	1.32%	1,639,574	1,534,920	(104,654)
4	333.00	Water wheels, turbines, and generators	1.36%	1.36%	1,662,886	1,662,886	-
5	334.00	Accessory electrical equipment	2.25%	2.15%	1,163,775	1,112,051	(51,724)
6	335.00	Other power plant equipment	1.75%	2.15%	804,901	988,878	183,977
7	336.00	Roads, railroads, and bridges	1.44%	1.42%	18,539	18,282	(257)
8	350.20	Surface and mineral	1.27%	1.27%	107,306	107,306	-
9	353.00	Substation equipment	1.68%	1.65%	4,606,344	4,524,088	(82,256)

Line #	Class	Description	2017 Depreciation Study Rate	2022 Depreciation Study Rate	Depreciation Based on 2017 Depreciation Study Rate	Depreciation Based on 2022 Depreciation Study Rate	Increase + / Decrease -
10	355.00	Poles, towers, and fixtures	1.64%	1.71%	2,129,782	2,220,687	90,905
11	356.00	Conductors and devices	1.77%	1.81%	2,259,314	2,310,372	51,058
12	359.00	Roads and trails	1.96%	1.86%	21,990	20,868	(1,122)
13	360.20	Surface and mineral	1.25%	1.26%	156,963	158,218	1,255
14	362.00	Substation equipment	1.84%	1.89%	5,353,692	5,499,172	145,480
15	364.00	Poles, towers, and fixtures	1.75%	1.81%	4,590,797	4,748,196	157,399
16	365.00	Conductors and devices	1.54%	1.61%	6,495,084	6,790,315	295,231
17	368.00	Line transformers	2.31%	2.55%	4,772,811	5,268,688	495,877
18	369.00	Services	0.51%	1.80%	17,500	61,766	44,266
19	370.10	AMI Meters	6.25%	5.56%	2,620,938	2,331,587	(289,351)
20	372.00	EV Stations	10.00%	10.00%	525,956	525,956	-
21	373.00	Street lighting and signal systems	4.06%	3.73%	569,223	522,956	(46,267)
22	390.10	Structures-Masonry	2.37%	2.47%	1,223,884	1,275,525	51,641
23	390.20	Operations Building	1.50%	1.61%	270,775	290,632	19,857
24	391.00	Office furniture and equipment	4.42%	5.54%	228,976	286,998	58,022
25	391.10	Computer Hardware	21.60%	25.00%	2,827,942	3,273,082	445,140
26	391.20	Computer Software	8.96%	10.73%	4,534,962	5,430,820	895,858
27	391.60	AMI Computer Software	10.00%	10.00%	958,169	958,169	-
28	392.10	Light Duty Vehicles	4.79%	11.17%	228,872	533,715	304,843
29	392.20	Heavy Duty Vehicles	6.50%	7.13%	1,965,995	2,156,545	190,550
30	394.00	Tools and work equipment	4.11%	5.39%	346,630	454,583	107,953
31	397.00	Communications structures and equipment	2.84%	4.75%	380,248	635,978	255,730
32	397.10	Fiber	6.97%	6.67%	719,001	688,054	(30,947)
33	397.20	AMI Communications structures and equipment	6.67%	6.67%	331,481	331,481	-
34		**Total Annual Depreciation**			**53,834,522**	**57,030,909**	**3,196,387**
35							
36		**Annual Composite Rate**			**2.26%**	**2.40%**	**0.14%**

Note: Numbers above are in dollars with depreciation calculated using the January 1, 2023 gross asset values.

The asset categories that account for the majority of the forecast change in depreciation expense are:

- Line Transformers (368.00)
- Light Duty Vehicles (392.10)
- Computer Hardware (391.10)
- Computer Software (391.20)

Each of these is discussed below. Please refer to pages 3-3 to 3-18 of the 2022 Depreciation Study included as Appendix D2-2 for further discussion.

2.3.1.1 Line Transformers (368.00)

For Line Transformers (368.00), Concentric recommends a 40-year service life, which is a decrease from the 42-year service life recommended in the 2017 Depreciation Study. A review of retirements, additions, and other plant transactions for the period 1940 to 2022 suggests that an average service life of 40 years is more reflective of the historical retirement activity, and 40 years falls within the typical range of lives used for this account by peer utilities which is between 30 and 50 years. This account has experienced an increase in retirements from age interval 25 onwards. Therefore, shortening the service life by two years supports the early- to mid-term retirements.

Please refer to page 3-15 of Appendix D2-2 for further details.

The recommended shorter life of the Line Transformers and the true-up of the depreciation rate over the remaining life of the assets result in an increase of 0.24 percent in the depreciation rate for this asset category.

2.3.1.2 Light Duty Vehicles (392.10)

For Light Duty Vehicles (392.10), Concentric recommends a 12-year life, consistent with the 2017 Depreciation Study. A review of retirement transactions suggests that an average life of 12 years continues to be consistent with the historical retirement activity and 12 years falls within the typical range of lives used for this account by peer utilities, which is between 6 and 14 years. In discussions with operational staff and management, expectations are that an average service life of 12 years is a good representation of historical life and future expectations for this account.

Even though there is no change in the service life, the true-up of the depreciation rate over the remaining life of the assets results in an increase of 6.38 percent in the depreciation rate for this asset category.

2.3.1.3 General Plant Accounts

While the 2017 Depreciation Study adopted the amortization accounting method for certain General Plant accounts, there are still a number of General Plant accounts for which the depreciation rate is not yet indicative of the amortized amount. This is due to the true-up inherent in the depreciation rate calculation as a result of historical differences between the book reserve and the calculated accrued amortization for these accounts.

The asset classes that account for the biggest change in the depreciation rates as a result of the amortization accounting method are Computer Hardware (391.10) and Computer Software (391.20).

2.3.1.3.1 COMPUTER HARDWARE (391.10)

For Computer Hardware (391.10), Concentric recommends a 4-year life which is consistent with the 2017 Depreciation Study. As a result of the true-up of the depreciation reserve, the depreciation rate has increased from 21.60 percent to 25 percent, which is indicative of the recommended 4-year average service life for this asset category. This change results in an increase of approximately 3.40 percent in the depreciation rate.

2.3.1.3.2 COMPUTER SOFTWARE (391.20)

For Computer Software (391.20), Concentric recommends an 8-year life which is consistent with the 2017 Depreciation Study. The recommended amortization accounting for this asset category and the true-up of the depreciation rate over the remaining life of the assets result in an increase of approximately 1.77 percent in the depreciation rate for this asset category.

2.3.2 Net Salvage

As approved by the BCUC in the FBC Annual Review for 2016 Rates Decision and Order G-202-15, FBC provides for net salvage (removal costs less salvage proceeds) on its existing assets as a cost of providing service, recovered from customers over the useful life of the asset.

The 2022 Depreciation Study includes updated estimates of net salvage rates which FBC has included in depreciation expense. The updated net salvage rates are based on the electric plant-in-service as of December 31, 2022, and are included in Appendix D2-2, Section 5.

Table D2-8 below compares the recommended and existing net salvage rates and the impact on net salvage expense (i.e., depreciation expense). As recommended by the 2022 Depreciation Study, the average composite net salvage rate increases from 0.71 percent to 0.77 percent using the recommended rates. The recommended net salvage rate increase by 0.06 percent is primarily driven by the increases in FBC's actual cost of removal activities as well the upward and downward changes in the net salvage percentage for various asset classes outlined in Table D2-8 below. This change results in an increase to net salvage expense of approximately $1.2 million.

Table D2-8: Net Salvage Rates by Asset Class for FBC

Line #	Class	Description	Net Salvage 2017	Net Salvage 2022	2017 Depreciation Study Net Salvage Rate	2022 Depreciation Study Net Salvage Rate	Net Salvage Based on 2017 Rate	Net Salvage Based on 2022 Rate	Increase + / Decrease -
1	331.00	Structures and Improvements	-10%	-10%	0.30%	0.29%	63,027	60,926	(2,101)
2	332.00	Reservoirs, dams and waterways	-25%	-30%	0.49%	0.67%	569,781	779,088	209,307
3	333.00	Water wheels, turbines and generators	-25%	-30%	0.43%	0.50%	525,765	611,355	85,590
4	334.00	Accessory electrical equipment	-20%	-25%	0.88%	0.85%	455,165	439,648	(15,517)
5	335.00	Other power plant equipment	-15%	-5%	0.37%	0.11%	170,179	50,594	(119,585)
6	353.00	Substation equipment	-25%	-30%	0.65%	0.74%	1,782,217	2,028,985	246,768
7	355.00	Poles, towers and fixtures	-35%	-40%	0.88%	1.09%	1,142,810	1,415,526	272,716
8	356.00	Conductors and devices	-30%	-35%	0.75%	0.95%	957,336	1,212,626	255,290
9	362.00	Substation equipment	-30%	-30%	0.77%	0.73%	2,240,404	2,124,019	(116,385)
10	364.00	Poles, towers and fixtures	-35%	-40%	0.98%	1.11%	2,570,846	2,911,877	341,031
11	365.00	Conductors and devices	-35%	-35%	0.84%	0.85%	3,542,773	3,584,949	42,176
12	368.00	Line transformers	-25%	-30%	0.82%	1.02%	1,694,245	2,107,475	413,230
13	370.10	AMI Meters	0%	0%	0.00%	0.01%	-	4,194	4,194
14	373.00	Street lighting and signal systems	-15%	-15%	0.89%	0.76%	124,780	106,554	(18,226)
15	390.10	Structures - Masonry	-5%	-5%	0.16%	0.29%	82,625	149,758	67,133
16	390.20	Operations Buildings	-5%	-5%	0.13%	0.13%	23,467	23,467	-
17	392.10	Light Duty Vehicles	15%	10%	-0.98%	-4.34%	(46,826)	(207,370)	(160,544)
18	392.20	Heavy Duty Vehicles	15%	10%	0.00%	-1.14%	-	(344,805)	(344,805)
19	397.00	Communications structures and equipment	0%	0%	0.60%	0.86%	80,334	115,146	34,812
20		**Total Annual Net Salvage**					**15,978,928**	**17,174,012**	**1,195,083**
21									
22		**Annual Composite Rate**					**0.71%**	**0.77%**	**0.06%**

Note: Numbers above are in dollars with depreciation calculated using the January 1, 2023 gross asset values.

Overall, the 2022 Depreciation Study results in a recommended combined depreciation and net salvage rate of 3.17 percent (depreciation of 2.40 percent plus net salvage of 0.77 percent), which is slightly higher than the existing composite depreciation rate of 2.97 percent.

2.3.3 Amortization of Contributions in Aid of Construction

The amortization rate for Distribution CIAC is calculated as a function of the depreciation rates for Distribution plant, which is the main asset type for which CIAC is received.

Consistent with past practice, the recommended amortization rate of 2.05 percent for Distribution CIAC is based on the average of the recommended depreciation rates for the Distribution Poles, Towers and Fixtures, Distribution Conductors and Devices, Distribution Line Transformers, and Distribution Meters Plant. With the higher recommended depreciation rates for the majority of these asset classes, the amortization rates for CIAC will also be higher, resulting in an increase to CIAC amortization of approximately $0.1 million per year.

For EV Stations CIAC, the amortization rate is based on the average of the recommended depreciation rates for EV assets residing in the Distribution Poles, Towers and Fixtures, Distribution Conductors and Devices, Distribution Line Transformers, and EV Stations asset categories. As a result, the amortization rate for EV stations CIAC is recommended to increase by 0.75 percent, from 8.37 percent to 9.12 percent.

2.4 *CONCLUSION*

The adoption of the depreciation rates as outlined in the 2022 Depreciation Studies for FEI and FBC is necessary in order to properly reflect the assets' useful lives and a fair allocation and recovery of depreciation expense between current and future ratepayers.

For FEI, implementation of the rates from the 2022 Depreciation Study results in a net increase of aggregate depreciation and net salvage expense of approximately $2.0 million per year, a 0.02 percent overall increase to the composite depreciation rate compared to the current approved rates.

For FBC, implementation of the rates from the 2022 Depreciation Study results in a net increase of aggregate depreciation and net salvage expense of approximately $4.3 million per year, an approximate 0.20 percent overall increase to the composite depreciation rate compared to the current approved rates.

3. LEAD-LAG STUDIES FOR CASH WORKING CAPITAL

3.1 *INTRODUCTION AND SUMMARY*

In this Application, FortisBC is requesting approval to adopt updated lead-lag days as determined in the 2023 Lead-Lag Studies included in Appendix D3-1 for FEI and Appendix D3-2 for FBC. The updated lead lag days will be used for the calculation of cash working capital requirements in the Companies' 2025 and future rate applications until another lead-lag study is performed. The filing of the 2023 Lead-Lag Studies in this Application is consistent with the BCUC's statement on page 137 of the MRP Decision that "the Panel agrees with FortisBC that an update in 2025 is appropriate."

Cash working capital is defined as the average amount of capital provided by investors in a company, over and above investments in plant and intangibles, to bridge the gap between the time expenditures are required to provide service and the time collections are received for that service. The periods are usually expressed in terms of lead or lag days and are supported by a lead-lag study. The study recognizes that there are timing differences between when FEI and FBC provide a service and when they receive payment (revenue lag) as well as the time between when they receive a service and subsequently make payment (expense lead). The difference between the total revenue lag and total expense lead is the net lag. A net lag number greater than zero indicates a cash working capital shortfall position which is added to rate base; this occurs when the payment of an expense precedes the collection of its related revenue stream. In some cases, however, revenue may be received prior to payment for the related expense (a net lead or negative net lag), which indicates a cash working capital surplus position, and a reduction to rate base.

The methodology and approach used to determine each of the individual components of the 2023 Lead-Lag Studies are included in Appendix D3-1 for FEI and Appendix D3-2 for FBC, with the methodology results of the studies summarized below. Consistent with the traditional approach in Canada and the 2018 Lead-Lag Studies, the 2023 studies include only cash operating expenditures, whereas depreciation, interest and equity return are excluded from the studies and the calculation of cash working capital.

3.2 *2023 LEAD-LAG STUDY FOR FEI*

FEI's 2023 Lead-Lag Study is included in Appendix D3-1. The following is a summary of the methodology and results of the study.

Summary of Methodology

- FEI used 2022 actual data, which was the most recent full year of available actual data, to perform the analysis and derive the "Proposed Lead Lag Days" in the table below.

- The study is similar in scope and methodology to FEI's previous study performed in 2018 using 2017 actual data.
- The results of the study using the new lead and lag days have been compared to the results using the lead and lag days derived in the 2018 study.

Summary of Results

- When applied to 2024 approved data,[138] the 2023 Lead-Lag Study results in a net lag of 5.1 days, which is consistent with the net lag of 5.1 days that results when using the 2018 Lead-Lag Study.
- This difference of 0.0 days is the result of a 1.2 day decrease in expenditure lead days, offset by a 1.2 day decrease in revenue lag days. The decrease in expenditure lead days is primarily attributable to a shorter payment lead for carbon tax and PST remittances as well as a shorter service lead for O&M expenditures. The decrease in revenue lag days is primarily attributable to a decrease in collection lag for residential customers.

A summary of the results of the 2023 Lead-Lag Study for FEI is presented in the table below, comparing the impact to 2024 Forecast revenue requirements of the proposed 2023 Lead-Lag Study results versus the currently approved 2018 Lead-Lag Study results. The table shows that the updated study has no impact to total cash working capital requirements.

[138] Compliance Filing to the FEI Annual Review for 2024 Delivery Rates Decision and Order G-334-23, Appendix A, Schedule 14, Line 27, Column 5.

Table D3-1: Summary of FEI Lead-Lag Study Results

Line	Particulars	2024 Forecast ($000's $)	Proposed Lead Lag Days	Dollar Days	2024 Forecast ($000's $)	Approved Lead Lag Days	Dollar Days
1	**Sales Revenue**						
2	Residential Tariff Revenue	1,092,727	38.5	42,068,285	1,092,727	40.3	44,036,898
3	Commercial Tariff Revenue	586,461	37.6	22,061,744	586,461	37.8	22,168,226
4	Industrial Tariff Revenue	193,678	45.3	8,774,971	193,678	47.7	9,238,441
5	Bypass and Special Rates	41,569	40.0	1,663,382	41,569	37.6	1,562,994
6							
7	**Total Sales Revenue**	1,914,435	39.0	74,568,383	1,914,435	40.2	77,006,559
8							
9	**Other Revenues**						
10	Late Payment Charges	3,607	52.9	190,660	3,607	53.8	194,057
11	Application Charges	1,797	38.1	68,391	1,797	39.0	70,083
12	Other Utility Income	37,075	38.1	1,411,017	37,075	39.0	1,445,925
13							
14	**Total Other Revenues**	42,479	39.3	1,670,068	42,479	40.3	1,710,065
15							
16	**TOTAL REVENUES**	1,956,914	**39.0**	76,238,451	1,956,914	**40.2**	78,716,624
17							
18	Energy Purchases	744,149	40.1	29,875,690	744,149	40.0	29,765,960
19	Operating & Maintenance	305,157	29.9	9,129,398	305,157	31.8	9,703,993
20	Property Taxes	83,359	0.6	47,922	83,359	1.3	108,367
21	Operating Fees	12,248	343.9	4,211,485	12,248	352.9	4,322,319
22	Carbon Tax	615,283	28.9	17,755,764	615,283	30.7	18,889,188
23	GST	47,796	33.3	1,593,709	47,796	39.7	1,897,501
24	PST	48,479	40.9	1,983,666	48,479	45.8	2,220,338
25	Income Tax	87,400	15.2	1,328,480	87,400	15.2	1,328,480
26							
27	**TOTAL EXPENDITURES**	1,943,870	**33.9**	65,926,113	1,943,870	**35.1**	68,236,146
28							
29	**NET LEAD-LAG DAYS (Line 16 - Line 27)**		**5.1**			**5.1**	
30							
31	**CASH WORKING CAPITAL (Line 27/365 x Line 29)**		**$ 27,161**			**$ 27,161**	
32							

3.3 *2023 LEAD-LAG STUDY FOR FBC*

FBC's 2023 Lead-Lag Study is included as Appendix D3-2. The following is a summary of the methodology and results of the study.

Summary of Methodology

- FBC used 2022 actual data, which was the most recent full year of actual available data, to perform the analysis and derive the "Proposed Lead Lag Days" in the table below.
- The study is similar in scope and methodology to FBC's previous study performed in 2018 using 2017 actual data.
- The results of the study using the new lead and lag days have been compared to the results using the lead and lag days derived in the 2018 study.

Summary of Results

- When applied to 2024 approved data,[139] the 2023 Lead-Lag Study results in a net lag of 12.7 days as compared to a net lag of 9.6 days that results when using the 2018 Lead-Lag Study.
- The difference of 3.1 days is the result of a 4.7 day decrease in expenditure lead days offset by a 1.6 day decrease in revenue lag days. The decrease in expenditure lead days is primarily due to automation of the power purchase payment process, resulting in a shorter payment lead. This was offset by a decrease in revenue lag days primarily due to a decrease in service lag days for residential customers due to an increase in customers billed monthly vs bi-monthly.
- When applied to the forecast revenues and operating expenses for 2024, this change in net days would have resulted in an increase of approximately $2.4 million in cash working capital ($3.7 million increase from expenses offset by a $1.3 million decrease from revenues).

A summary of the results of the 2023 Lead-Lag Study for FBC is presented in the table below, comparing the impact to the 2024 Forecast revenue requirements of the proposed 2023 Lead-Lag Study results versus the currently approved 2018 Lead-Lag Study results. The table shows the increase in total cash working capital requirements of $2.450 million ($10.037 million less $7.587 million).

[139] Evidentiary Update to FBC Annual Review for 2024 Rates, Appendix A, Schedule 14, Line 29, Column 5.

Table D3-2: Summary of FBC Lead-Lag Study Results

Line	Particulars	2024 Forecast (000's $)	Proposed Lead Lag Days	Dollar Days	2024 Forecast (000's $)	Approved Lead Lag Days	Dollar Days
1	**Sales Revenue**						
2	Residential Tariff Revenue	219,891	54.2	11,909,656	219,891	56.0	12,313,896
3	Commercial Tariff Revenue	118,276	44.0	5,198,789	118,276	45.1	5,334,248
4	Wholesale Tariff Revenue	59,319	36.7	2,178,116	59,319	37.5	2,224,463
5	Industrial Tariff Revenue	53,156	35.7	1,899,426	53,156	38.0	2,019,928
6	Lighting Tariff Revenue	2,371	44.0	104,258	2,371	34.6	82,037
7	Irrigation Tarrif Revenue	4,234	39.8	168,368	4,234	47.0	198,998
8							
9	**Total Sales Revenue**	457,247	46.9	21,458,612	457,247	48.5	22,173,569
10							
11	**Other Revenues**						
12	Apparatus and Facilities Rental	6,199	90.3	559,851	6,199	90.0	557,910
13	Contract Revenue	2,260	60.0	135,478	2,260	62.2	140,563
14	Transmission Access Revenue	1,723	60.2	103,725	1,723	65.2	112,340
15	Late Payment Charges	962	53.7	51,602	962	54.0	51,922
16	Connection Charge	561	38.4	21,543	561	30.5	17,104
17	Other Utility Income	388	55.3	21,451	388	63.4	24,606
18							
19	**Total Other Revenues**	12,092	73.9	893,650	12,092	74.8	904,444
20							
21	**TOTAL REVENUES**	469,339	**47.6**	22,352,262	469,339	**49.2**	23,078,013
22							
23	Power Purchases	173,694	45.8	7,957,100	173,694	51.5	8,945,261
24	Wheeling	7,324	39.7	290,820	7,324	46.9	343,514
25	Water Fees	12,513	1.9	24,094	12,513	1.4	17,518
26	Operating and Maintenance	63,174	23.9	1,509,851	63,174	28.6	1,806,768
27	Property Tax	18,573	4.1	76,543	18,573	4.9	91,008
28	GST	703	39.4	27,718	703	45.4	31,916
29	Income Tax	12,484	15.2	189,757	12,484	15.2	189,757
31							
32	**TOTAL EXPENDITURES**	288,466	**34.9**	10,075,883	288,466	**39.6**	11,425,742
33							
34	**NET LEAD-LAG DAYS (Line 21 - Line 32)**		**12.7**			**9.6**	
35							
36	**CASH WORKING CAPITAL (Line 32/365 x Line 34)**		**$ 10,037**			**$ 7,587**	
37							

4. CORPORATE SERVICES STUDY

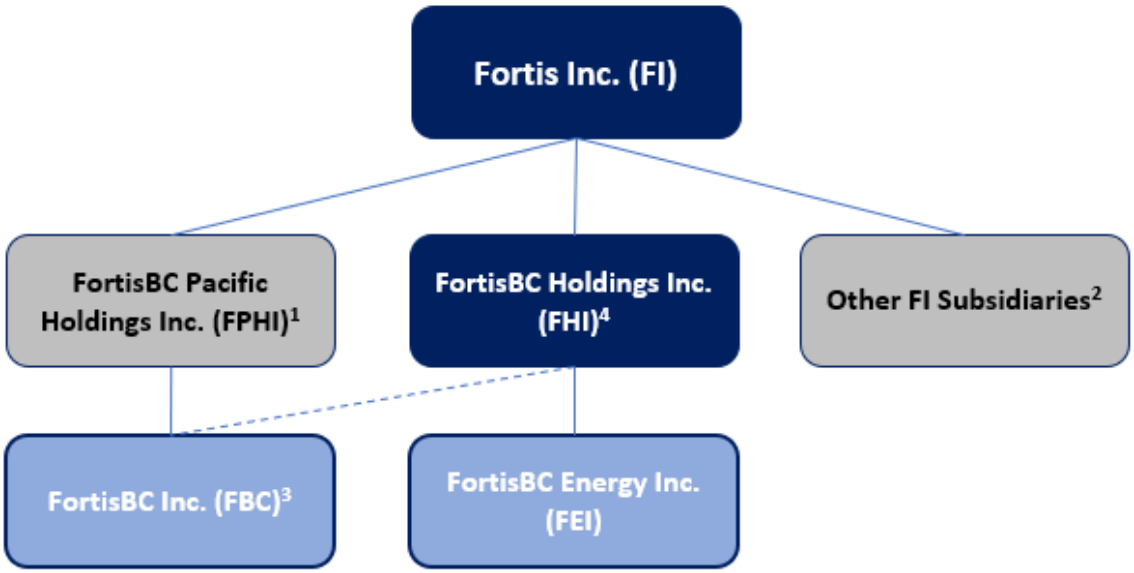
4.1 *INTRODUCTION*

In this Application, FortisBC is requesting approval of the methodologies of allocating common corporate service costs from Fortis Inc. (FI) and FortisBC Holdings Inc. (FHI) to FEI and FBC. The allocation methodologies include a formula that is based on total assets, excluding goodwill, and controllable operating expenses for FI corporate services, and the use of a Massachusetts Formula for FHI corporate service allocations. Both methodologies and the nature of the FI and FHI corporate service costs have been reviewed and endorsed by KPMG in the 2023 Corporate Service Cost Study (2023 CSC Study) included as Appendix D4-1. FortisBC is seeking approval of the allocation methodology, rather than the forecast of corporate service costs. The actual costs and allocation percentages will vary each year of the Rate Framework term depending on the size of the eligible corporate cost pool at FI and FHI, as well as the relative size of the FI and FHI allocators.

The corporate services function consists of certain specialized functions that reside in FI and FHI. FI provides corporate service functions for FHI and then FHI passes along a majority of these activities to FEI and FBC, along with FHI corporate services. As a result, both FI and FHI provide expertise and corporate services to FEI and FBC, resulting in economies of scale to those companies.

In Figure D4-1 below, the entities that provide the corporate services (FI and FHI) are in the dark blue boxes and the BCUC-regulated entities that share in the corporate services (FBC and FEI) are in the light blue boxes.

Figure D4-1: 2023 Corporate Services Study Organizational Chart



Notes:

[1] FPHI is not regulated by the BCUC and does not receive corporate services from either FI or FHI. While FPHI is the legal parent of FBC, it has no employees and provides no services to FBC. FPHI does have contracts in place to provide operation and management services to non-regulated third-party generation owners. These non-regulated services utilize resources provided by FBC, which are charged through to FPHI in accordance with the Code of Conduct and Transfer Pricing Policy, meaning that regulated FBC customers receive the benefit of a margin on such services.

[2] Other FI subsidiaries that benefit from FI corporate services and therefore are included in the allocation include CH Energy Group, UNS Energy Corp., ITC Holdings Corp, FortisAlberta, Newfoundland Power, Maritime Electric, FortisOntario, Caribbean Utilities, and Fortis Turks and Caicos.

[3] While FBC is a direct subsidiary of FPHI, it receives corporate service support from FHI and therefore is considered as part of the sharing allocation pursuant to the 2023 CSC Study.

[4] Up until November 1, 2023, FHI owned FortisBC Midstream Inc. (FMI), the parent company and owner of the Aitken Creek Gas Storage Facility (ACGS). Consistent with the 2018 Corporate Service Cost Study (2018 CSC Study) that was approved as part of the MRP Decision, ACGS received a portion of the FI and FHI corporate service cost allocation. On November 1, 2023, FMI was sold to a subsidiary of Enbridge Inc. and consequently no longer received a portion of the FI and FHI corporate service costs.

4.2 REVIEW OF CHANGES SINCE 2018 CORPORATE SERVICES STUDY

The following changes have occurred with respect to FI and FHI corporate service costs that are incurred for the benefit of FEI and FBC and the approach in allocation to FEI and FBC since the 2018 CSC Study:

- FI removed the position of EVP – Western Utility Operations at the end of 2019, the costs of which were previously allocated only to FHI and FortisAlberta Inc. As noted in the 2018 CSC Study, the 2018 Forecast amount for this charge was $0.4 million allocated to FHI.
- ACGS has been removed from the sharing methodology of FI and FHI corporate service costs. This is a result of the entity no longer being part of the Fortis group effective November 1, 2023, when FMI, the parent company and owner of ACGS, was sold to a subsidiary of Enbridge Inc. The removal of ACGS from the sharing methodology has resulted in a proportional decrease to the amount of corporate service costs allocated to FHI by FI of approximately $0.3 million if ACGS was removed for all of 2023 because the size of the FHI group became smaller in comparison to the overall FI entity. The removal of ACGS also resulted in a proportional increase to the total allocation of corporate service costs to FEI and FBC by FHI of approximately $0.8 million if ACGS was removed for all of 2023 because there are fewer entities in the FHI group to allocate its eligible costs to. This is discussed in Section 6 of the 2023 CSC Study.

While there have been changes from the 2018 CSC Study, the general process, nature of eligible corporate service costs, and allocation methodology of corporate services costs from FI and FHI is generally consistent. FortisBC will continue to rely on these corporate services during the term

of the Rate Framework, using the same cost allocation methodology as supported by the 2023 CSC Study.

4.3 *DESCRIPTION OF FI CORPORATE SERVICES*

4.3.1 FI's Stand-Alone Business Operating Model

FI is a holding company which, directly or indirectly, owns utility operations in 10 US states, five Canadian provinces and three Caribbean countries. FI has a stand-alone business operating model, whereby its subsidiaries operate substantially autonomously from FI and each other, other than FEI and FBC who have a common Board of Directors, Executive Leadership Team, and have integrated many corporate functions. Each operating subsidiary is responsible for its own operations and regulatory activities. Since FI is a public holding company, its business operations are different than those of its operating subsidiaries. FI activities are in support of its ability to provide and maintain an equity investment in the operating subsidiaries, and to provide a market return to its widely held shareholder base. In addition, FI provides strategic oversight, strategic planning, and corporate governance, as well as managing and administering the group-wide insurance program and the coordination of cross-functional sharing of best practices across the operating subsidiaries.

While FI provides these services, each operating subsidiary has its own board of directors and executive management team based in the area served by the subsidiary. The subsidiary executive management is accountable to its own board of directors and responsible for key aspects of utility operations such as safety, customer satisfaction, service continuity, environment and sustainability impacts, cost management, financial performance, and community involvement. The subsidiary executive and management teams also determine human resource requirements and hiring practices, negotiate collective bargaining agreements, establish operating and capital budgets, and serve as the direct contact and decision-making authorities in regulatory matters. With this structure and operating philosophy, FI has a relatively low number of employees and level of operating costs.

4.3.2 FI Functional Areas and Corporate Services

The functional areas of FI that provide corporate services include the board of directors, executive, financial reporting, treasury and taxation, legal, planning and forecasting, internal audit, insurance/risk management, investor relations, human resources, communications and corporate affairs, sustainability, information systems, and cybersecurity. These functional areas support the following overarching business activities of FI, which are:

- Maintaining and providing additional equity to operating subsidiaries by raising equity through the Canadian and US public capital markets;
- Complying with public company securities requirements, resulting from being registered with the Ontario Securities Commission and the US Securities and Exchange

Commission, and corresponding listings on the TSX and NYSE, for which compliance is required to support its equity investment in the operating subsidiaries;

- Providing strategic oversight and coordinating and sharing best practices among the FI group of companies; and
- Administering the corporate-wide group insurance program.

The majority of the operating costs for each of the FI functional areas providing these corporate services are recovered from the operating subsidiaries. The nature of these functional area operating costs is generally consistent with those corporate services provided by FI to FHI, and to FEI and FBC by way of the FHI management fee.

4.3.2.1 Benefits of Provision of Equity Capital by FI

FI is listed on the TSX and NYSE. The liquidity of FI's stock in both Canada and the US, together with its dividend reinvestment plan (DRIP) and other share plans, provides a large and robust equity platform for its utility operations to draw upon. The group of FI's operating subsidiaries is diversified across multiple jurisdictions, and are primarily regulated utilities. This diversified portfolio of regulated electric and natural gas utilities allows FI to access capital markets on a cost efficient and effective basis. The operating subsidiaries benefit from FI's financial strength and access to capital markets as it allows them to obtain and maintain capital to meet their individual operational needs.

The operating subsidiaries benefit from the services provided, as the equity maintained and supplied by FI is required to ensure that the operating subsidiaries' capital structures are consistent with those approved by their respective regulators. Specifically, FEI and FBC obtain debt to finance their approved capital structures, while FI provides the remaining required equity financing under FEI's and FBC's approved capital structures. If FI did not supply the necessary equity capital, the operating subsidiaries would have to obtain the equity capital from other sources individually and incur the associated costs. FI utilizes the public markets to access the equity needed in support of its operating subsidiaries, provides shareholder relations services, and ensures overall corporate governance requirements of equity market regulators are effectively met for the operating subsidiaries. FEI and FBC, as regulated utility entities, will require incremental equity financing provided by FI in order to fund their regular capital expenditures and major projects over the coming years. These services provided by FI are outlined in Sections 4.2 and 4.3 of the 2023 CSC Study, but specifically excluded from the FI costs are the direct, incremental costs of issuing debt or equity by FI.

4.3.2.2 Benefits of Strategic Oversight and Sharing of Best Practices from FI

The operating subsidiaries benefit from the strategic oversight and sharing of best practices across the group of FI companies. The strategic oversight provided by FI enhances the corporate governance at the local operating subsidiary level while still allowing each operating subsidiary the ability to manage its local operations and make key business decisions in a substantially autonomous manner. The sharing of best practices allows each operating subsidiary to leverage

the cumulative knowledge and experience of its affiliated subsidiaries across many functional areas, including operations and safety, human resources, customer service, communications, sustainability, financial reporting, planning and forecasting, information technology, risk management, cybersecurity, legal, regulatory, and internal audit. Sharing of best practices allows for more effective and efficient operations at the local operating subsidiary level than if the subsidiary was operating on a stand-alone basis separate from the Fortis group. The collaboration also provides for certain cost efficiencies, such as through joint procurement activities. FI's operating subsidiaries, including FEI and FBC, would not have the benefit of this strategic oversight and sharing of best practices if they were not under the umbrella of FI.

4.3.2.3 Benefits from FI Administered Company-wide Group Insurance Program

FortisBC's customers benefit from lower insurance premiums due to economies of scale obtained with the consolidated Fortis group of companies as compared to if FEI and FBC were required to seek out their insurance premiums on a stand-alone basis. The actual insurance premiums are charged directly to FHI, FEI, FBC, and other FHI subsidiaries (including ACGS while it was still owned by FHI) based on replacement value for property insurance and revenue for liability policies. In addition to insurance premiums, FI corporate services include FI's cost to manage and administer the insurance program. The FI risk management department is responsible for group property and casualty insurance policies renewal processes, determining and developing risk transfer strategies, determining policy limits and optimal retention levels, handling and administration of FI group first party property damage claims and third-party claims, and overseeing risk and loss control inspections including the management of recommendations and subsequent response.

4.4 *FI CORPORATE SERVICES ALLOCATION METHODOLOGY*

The costs of the FI corporate services, as described in Section D4.3 above, are allocated to FHI, FEI and FBC (together defined as the FortisBC Subsidiaries), as well as to ACGS while it was still owned by FHI, on a percentage basis. The allocation is calculated using the following factors:

1. Controllable operating costs for the FortisBC Subsidiaries as a percent of all Fortis group operating costs; and
2. Total assets (excluding goodwill) for the FortisBC Subsidiaries as a percent of all Fortis group total assets.

The use of more than one factor for the cost allocation reflects a balanced methodology, consistent with the approach used by other utility holding companies and their subsidiaries. Using more than one factor recognizes that there is not one perfect allocator, and mitigates the inherent risk associated with using one measure for calculating general cost allocations.

The two cost allocation factors are weighted as follows: (i) 75 percent to total assets (excluding goodwill); and (ii) 25 percent to total controllable operating expenses. The 75 percent weighting

recognizes that assets provide the basis upon which regulated utilities earn a return, with total assets (excluding goodwill) closely correlating with the equity investment required by the operating subsidiaries. The lower 25 percent weighting for controllable operating expenses recognizes that FI's subsidiaries operate in a substantially autonomous manner, and directly manage most costs.

The FI allocator formula is as follows:

(FortisBC Subsidiaries' portion of Total FI Assets (Excluding Goodwill) x 75%)
+
(FortisBC Subsidiaries' portion of Total FI Controllable Cost Allocation x 25%)
=
Total Allocation to FortisBC Subsidiaries (FHI, FEI, FBC, and ACGS while it was still owned by FHI)

After applying the above allocator formula, the percentage allocation of FI corporate services to FortisBC Subsidiaries is as shown in Table D4-1 below.

Table D4-1: FI Corporate Services 2023 Allocation to FortisBC Subsidiaries

Allocation Factor	Weighting	FortisBC Subsidiaries 2023 Allocation
Asset Allocation (excluding Goodwill)	75%	21.3%
Controllable Cost Allocation	25%	23.3%
Total Allocation from 2023 CSC Study		21.8%[1]
Total Allocation from 2018 CSC Study		21.4%

Note:

[1] *Includes ACGS. As outlined in Section 6 of the 2023 CSC Study, the removal of ACGS from the Fortis group would result in an approximate 0.9 percent decrease to the total allocation.*

The application of the above total allocation of 21.8 percent results in allocations of business activities performed by FI to support the FortisBC Subsidiaries as shown in Table 7 of the 2023 CSC Study.

The total allocation of FI corporate services is generally consistent with the 2018 CSC Study. The amount increased slightly as the proportion of FortisBC Subsidiaries' total assets and controllable costs within the group of FI entities has increased, though the increase has been partially offset by the removal of an EVP, Western Utility Operations that existed in FI in the 2018 CSC Study that was allocated to the FortisBC Subsidiaries and FortisAlberta specifically.

In addition, as outlined in Section 6 of the 2023 CSC Study, the total allocation of FI corporate services has been recalculated to remove ACGS, resulting in a decrease in the total allocation from 21.8 percent to 20.9 percent. This amount is also lower than the 21.4 percent determined in

the 2018 CSC Study. The recalculated, lower percentage is representative of the expected FI corporate services allocation rate over the term of the Rate Framework.

FortisBC notes that the actual charges each year will be updated based on FI eligible corporate service costs and a recalculation of the allocation factors using the same methods described above.

4.5 *DESCRIPTION OF FHI CORPORATE SERVICES*

In addition to the FI corporate services described above, FHI, the parent company of FEI, provides key corporate functions directly to FEI, FBC and certain of FHI's other subsidiaries. FHI corporate services provided to FEI and FBC are incremental to the corporate services provided by FI, and are described by department as follows:

- **Governance and Board of Directors:** FHI ensures all continuous disclosure and governance activities required by external regulators, stakeholders, and third parties are appropriately carried out, manages the relationship and corporate activities of the FEI and FBC common Board of Directors, and develops and maintains governance procedures and policies.
- **External Financial Reporting:** FHI is responsible for the preparation of monthly, quarterly and annual financial statements for FHI, FEI, FBC and other FHI subsidiaries, coordination with external auditors, analysis of financial information for advisory purposes within FEI and FBC, technical accounting analysis and position papers, preparing continuous disclosure document filings (e.g., quarterly and annual Management Discussion and Analysis and the Annual Information Form), managing consistent accounting policy treatment across the FortisBC group of companies, oversight of compliance with securities regulations such as sustainability requirements and SEC registration, and maintaining internal controls over financial reporting.
- **Internal Audit:** FHI is responsible for planning and conducting audits and operational reviews of all areas of the gas and electric utilities, as well as facilitating the annual enterprise risk management assessment process. This department monitors and evaluates the effectiveness and efficiency of internal controls and risk management strategies for FEI and FBC, as well as providing both assurance and advisory services to support operational areas, enhancing information system controls and data analysis, and ensuring ongoing compliance with regulatory requirements.
- **Legal:** FHI provides legal services and counsel on issues including regulatory, environmental, business development, employment, securities, financing, and intellectual property, and manages legal matters that have been outsourced to outside legal counsel.
- **Insurance and Risk Management:** FHI is responsible for managing the insurance program on a day-to-day basis. The insurance and risk management department is responsible for managing the claims process, renewal of all third party insurance, and for overseeing the allocation of cost of the premiums paid for those policies.

- **Taxation:** FHI provides a full range of services in income and commodity taxes, including financial reporting for taxes (year-end and quarterly tax provisions for current and future income taxes), tax compliance (filing of tax returns, coordination of tax audits), regulatory tax accounting (tax calculations for rate filings and annual reports), tax planning, including guidance and support for significant transactions, and tax dispute management and resolution.
- **Treasury and Financial Planning:** FHI is responsible for the execution of short-term and long-term financing, cash management and forecasting, the arrangement of operating credit facilities, and the negotiation of bank-service fees for all FortisBC companies. FHI is also responsible for treasury related controls and compliance, compliance reporting, hedging of interest rate and foreign exchange risks, providing information in support of credit ratings, maintaining bank and debt investor relationships, and assisting in the preparation of certain regulatory submissions, including in support of ROE, capital structure, and financing related matters.
- **Facilities and Support:** FHI provides building space strategy, certain computer software support, and administration and computer outsourcing.

In addition to the corporate services specifically provided by FHI, the FI corporate service costs, as described in Section D4.3 above and as outlined in Table 7 of the 2023 CSC Study, are also included in the pool of eligible FHI corporate service costs. The pool of eligible FHI corporate service costs allocated to FEI and FBC excludes certain costs that are specific to FHI or are non-recoverable from ratepayers, including:

- Services directly charged to other related entities, including those services provided to and remaining in FHI;
- Business development costs;
- Legal fees incurred for non-regulated entities;
- Pension bonus amounts for defined benefit supplemental pension plans; and
- Ineligible components of the FI management fee related to stock compensation costs.

The nature of FHI corporate service costs, after the previously mentioned exclusions, are generally consistent with those that existed in FHI during the Current MRP term. The methodology of how these costs are allocated to FEI and FBC is discussed in the next section.

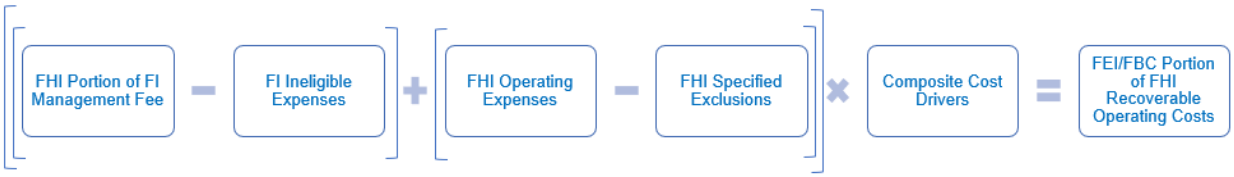
4.6 *FHI CORPORATE SERVICES ALLOCATION METHODOLOGY*

The eligible pool of the FHI corporate service costs is allocated to FEI and FBC using what is commonly known as the Massachusetts Formula, which consists of a hybrid of an activity-based costing method and a financial composite cost allocator. The Massachusetts Formula is a widely used and accepted method for allocating costs in the utility industry in North America. The Massachusetts Formula is generally used when there is substantial sharing of costs amongst

entities. It is calculated as an average of: (i) gross margin (revenue less cost of gas or energy); (ii) payroll; and (iii) average net book value (NBV) of tangible capital assets plus inventories. The forecast amounts for each of the three components are estimated for all applicable entities and given equal weight. An average is then computed for each operating entity which, when compared to the total, calculates a ratio used to allocate its share of the cost pool.

FEI and FBC have applied the Massachusetts Formula to allocate common costs in previously approved rate setting filings, including during the Current MRP term and the previous 2014-2019 PBR Plan term. Continuing to apply this same cost allocation methodology to corporate service costs charged to FEI and FBC allows for a consistent and familiar methodology which has previously been reviewed and tested in regulatory proceedings. The following figure depicts the Massachusetts Formula allocator methodology, taking into account both the FI corporate service costs and the FHI corporate service costs.

Figure D4-2: Application of Massachusetts Formula to Allocate FHI Corporate Service Costs



After applying the Massachusetts Formula, the allocation percentages of FHI corporate services to be applied to FEI and FBC are approximately 77 percent and 23 percent, respectively, excluding ACGS, as outlined in Table 13 of the 2023 CSC Study. If this method was in place for 2023, allocations of business activities performed by FI and FHI to support FEI and FBC would be as shown in Table D4-2, which is a combination of the summary of 2023 budgeted FHI corporate service costs from Table 10 of the 2023 CSC Study, and the updated Massachusetts Formula allocation from Table 13 of the 2023 CSC Study.

Table D4-2: 2023 FHI Corporate Services Costs Allocation

FHI Corporate Services Cost Pools Eligible for Allocation	FHI Operating Costs	Specified Exclusions	Eligible Costs (Cost Pools)	FEI (77.2%) [2]	FBC (22.8%) [2]
Governance & Board of Directors	$ 2,052,945	$ (67,361)	$ 1,985,584	$ 1,532,596	$ 452,988
External Financial Reporting	917,818	(258,686)	659,132	508,759	150,373
Internal Audit	1,707,758	(153,698)	1,554,060	1,199,519	354,541
Legal	3,281,011	(1,165,247)	2,115,764	1,633,077	482,687
Insurance & Risk Management	381,816	(9,545)	372,271	287,342	84,929
Taxation	1,340,076	(279,486)	1,060,590	818,629	241,961
Treasury & Financial Planning	1,717,916	(571,652)	1,146,264	884,757	261,507
Facilities & Support	1,429,529	(187,343)	1,242,186	958,796	283,390
Fortis Inc. Management Fee [1]	10,550,000	(2,992,000)	7,558,000	5,833,730	1,724,270
Estimated Impact of ACGS Disposal [1]	(435,550)	123,523	(312,027)	(240,842)	(71,185)
Other Excluded Costs	7,440,020	(7,440,020)	-	-	-
Total	**$ 30,383,339**	**$ (13,001,515)**	**$ 17,381,824**	**$ 13,416,363**	**$ 3,965,461**

Notes:

[1] The FI Management Fee has been adjusted in a separate line in Table D4-2 above to reflect the disposal of ACGS. As outlined in Section 6 of the 2023 CSC Study, the removal of ACGS from the Fortis group results in an approximate 0.9 percent decrease to the total FI Management Fee cost allocation.

[2] For presentation purposes, the Massachusetts Formula has been calculated to reflect the disposal of ACGS. Prior to the sale, ACGS absorbed approximately 4.4 percent of total FI and FHI corporate service costs, as represented in Table 11 and Table 12 of the 2023 CSC Study.

The above table calculates an FHI management fee of approximately $13.4 million and $4.0 million for FEI and FBC, respectively, if this model had been in place for 2023. Please note that the above table provides an illustration of how the methodology to allocate corporate service costs is applied, and is not intended to represent the actual allocations that occurred during 2023. The actual costs and the formula indicators will be known in the years when the services are provided. However, for context, the FHI management fee represented in the 2018 CSC Study, using the same approach, was $11.0 million and $3.4 million for FEI and FBC, respectively.

As outlined in Section 6 of the 2023 CSC Study, the removal of ACGS from the Fortis group influences both the proportion of corporate service costs allocated by FI to FHI, and the proportion of FHI corporate service costs allocated to FEI and FBC. In particular, the FI corporate service costs allocated to FHI would decrease from approximately 21.8 percent to 20.9 percent of the total, while the Massachusetts Formula used to allocate costs from FHI to FEI and FBC would increase by approximately 3.4 percent and 1.0 percent for FEI and FBC, respectively, as a result of this change.

4.7 CONCLUSION

The allocation of FI and FHI corporate service costs has been reviewed by KPMG in the 2023 CSC Study. In Section 7 of the 2023 CSC Study, KPMG states:

> KPMG evaluated FI's and FHI's corporate service cost allocation methodologies in alignment with evaluation criteria introduced in Section 2.3 of the 2023 CSC Study. Overall, both allocation methodologies appear to be a reasonable mechanism to allocate corporate service costs.

Based on the recommendations from the 2023 CSC Study, FortisBC will continue to apply the methodology of aggregating its common corporate service costs from FI and FHI and allocating them to FEI and FBC using the methodologies described above and in more detail in the 2023 CSC Study.

5. CAPITALIZED OVERHEAD STUDIES

5.1 INTRODUCTION

For the term of the Rate Framework, FEI is proposing to apply a capitalized overhead rate of 14.5 percent of gross O&M, net of biomethane O&M transferred to the BVA, and FBC is proposing to apply a capitalized overhead rate of 15.5 percent of gross O&M, to regular capital expenditures. This compares to the 16 percent for FEI and 15 percent for FBC used during the term of the Current MRP. The capitalized overhead rates reflect a reasonable basis for capitalization of costs related to capital activities for both FEI and FBC, that have not been directly charged to capital projects. The allocation of capitalized overhead costs is consistent with the methodology from prior years' studies and filings, and corroborated with established rate-regulated utility practice, the BCUC's Uniform System of Accounts (USofA), and US GAAP.

While certain jurisdictions do not require regular filing and approval of the allocations for capitalized overhead costs, FortisBC has a practice of periodically filing updated capitalized overhead studies and requesting regulatory approval of the methodology used and associated rate to ensure that its capital expenditures include the appropriate level of capitalized overhead costs.

Consistent with past practice, FortisBC engaged KPMG to perform a review of its capitalized overhead methodology for the term of the Rate Framework and prepare a capitalized overhead study for each of FBC and FEI (referred to as the 2023 Capitalized Overhead Studies). The 2023 Capitalized Overhead Study for FEI is included as Appendix D5-1 and the 2023 Capitalized Overhead Study for FBC is included as Appendix D5-2.

In the sections below, FortisBC discusses the basis for allocating overhead costs to capital projects, FortisBC's methodology for capitalized overhead studies, and the results of the most recent capitalized overhead studies for FEI and FBC.

5.2 OVERHEAD COSTS ALLOCATED TO CAPITAL PROJECTS

Utilities operate in a capital-intensive industry where an ongoing capital program is required to sustain the current system, address public and employee safety, and ensure reliability of energy supply to customers. Utilities' capital expenditures include the physical construction or purchase of property, plant and equipment. Multiple business activities of the utility are involved to construct and bring an item of property, plant and equipment into service.

Certain activities incurred during the construction or acquisition of a capital asset are considered direct costs, as they meet the definition of costs to be capitalized under US GAAP by being associated with the acquisition, development, and construction activities to bring an asset to the condition necessary for it to be capable of operating for its intended use. Examples of direct costs include labour and employee benefits, travel costs, vehicle costs, engineering services, procurement activities, consulting costs, and certain overhead costs. Directly attributable activities

can be charged directly to the capital project or may be charged to capital projects from O&M indirectly through a capitalization methodology. For several directly attributable activities that support the construction of multiple capital projects, the use of a capitalized overhead allocation is a more efficient process to allocate direct costs as compared to direct charging each individual activity to each specific project.

Other activities that are not directly attributable to a specific project, such as certain activities performed by human resources, finance, legal, facilities, and information systems, may also be capitalized. These activities are integral in supporting a utility's capital program, and therefore allocating these indirect overhead costs to capital projects for regulated utilities is an accepted practice embedded in US GAAP. Accounting Standards Codification 980, Regulated Operations (ASC 980) explicitly acknowledges the capitalization of indirect costs as approved by a regulator.

In addition to generally accepted accounting principles, the capitalization of overhead costs is embedded in the BCUC's USofA. Both the BCUC Gas USofA, initially established in the 1960s, and the BCUC Electric USofA, initially established in the 1980s, include "Cost of overhead charged to construction" as a cost item to be included in section 6, "plant acquired or constructed", as defined below:

> Cost of overhead charged to construction includes engineering, supervision, administrative salaries and expenses, construction engineering and supervision, legal expenses, taxes and other similar items. The assignment of overhead costs to particular jobs or units shall be on the basis of actual and reasonable costs.

While the Federal Energy Regulatory Commission (FERC) does not have jurisdiction within Canada, its accounting guidelines can be referenced for establishing regulated utility industry practice of costs incurred to support capital expenditures. FERC's USofA "Electric Plant Instruction, Number 4, Overhead Construction Costs" is clear that capital expenditures should contain all costs, direct charged and indirectly allocated, related to construction activity. While no single guideline, statement or source exists that is universally accepted by utilities and regulators as the definitive standard, all of the above support that both direct and indirect overhead costs are appropriately allocated to capital projects for rate-regulated utilities.

5.3 *METHODOLOGY FOR FORTISBC CAPITALIZED OVERHEAD STUDIES AND APPLICATION OF CAPITALIZED OVERHEAD RATES*

FortisBC assesses the activities of its various business areas in support of its capital program. Depending on the level of capital work, these activities may be increasing, decreasing, or remaining constant.

FortisBC's O&M includes the costs for activities that are primarily for operating the business, independent of the levels of capital. However, a portion of O&M is required to initiate and enable capital activity, which is then allocated to capital expenditures as overheads capitalized. For FortisBC, capitalized overhead is calculated by applying the overhead capitalization rate to gross O&M costs, after O&M has been reduced by direct charges to capital and other non-O&M

accounts. While the capitalized overhead rate is calculated on an aggregate basis at the entity level, the resulting capitalized overhead amount is allocated to capital on a more detailed pro-rata basis (based on capital additions in the period) to the appropriate asset accounts for each individual capital project.

The capitalized overhead rates determined in the 2023 Capitalized Overhead Studies are assigned to regular capital, which excludes CPCNs and certain other major capital projects. The rationale is that the majority of costs and activities for these types of projects, including incremental external contractor costs, have been charged directly to CPCNs and major projects and therefore do not require a mechanism such as a capitalized overhead rate to allocate additional costs from O&M. Consistent with historical and current practice, the actual amount of overheads capitalized will be recorded at the forecast amount so that there will be no variances in either the capital additions or O&M related to the total amount of capitalized overhead in any given year.

As in 2018, FortisBC engaged KPMG to perform a review of its capitalized overhead methodology. KPMG's 2023 Capitalized Overhead Studies use a similar approach as was undertaken in the capitalized overhead studies prepared in 2018 and approved as part of the MRP Decision.

As indicated in the 2023 Capitalized Overhead Studies, KPMG reviewed FortisBC's capitalized overhead methodology in detail and evaluated it against nine criteria, the first of which is cost causality. As stated by KPMG, its review of the available guidance highlighted a common general principle: "That any assignment of indirect costs to a capital project should be done based upon some reasonable causal link or association with the capital activity." KPMG found that FortisBC's methodology satisfied this criterion, concluding that the mechanisms used to estimate the proportions of capital related costs demonstrate a reasonable causal link to capital projects.

Overall, for FEI, KPMG concludes, at page 3: "KPMG's evaluation finds that FEI's capital overhead cost allocation methodology is a reasonable mechanism to establish the overhead capitalization rate." Similarly, for FBC, KPMG similarly concludes, at page 3: "FBC's capital overhead cost allocation methodology is a reasonable mechanism to establish the overhead capitalization rate."

5.4 *RESULTS OF CAPITALIZED OVERHEAD STUDY FOR FEI*

For the term of the Rate Framework, FEI proposes a capitalized overhead rate of 14.5 percent of gross O&M, net of biomethane O&M transferred to the BVA, as compared to the current 16 percent rate approved by the MRP Decision. According to KPMG, the decrease in the rate can be attributed to: (1) certain process improvements, where direct charging mechanisms to individual projects by the engineering and operations functional areas end up requiring less need to account for their costs through an indirect overhead rate; and (2) stability in the rate of capital spending over time, as compared to the assessment performed in the 2018 Capitalized Overhead Study for FEI. The decrease in the rate is also explained by a general increase in operating costs

of functional areas which are not generally involved in capital activity. These areas include renewable gas development, LNG operations, Indigenous and external relations, customer service, and certain areas of engineering and operations. As these areas grow in proportion to the overall O&M budget, the relative proportion of functional areas which are involved in initiating and enabling capital activity decreases, leading to a decrease in the blended overhead rate.

The results of the 2023 Capitalized Overhead Study for FEI indicate that certain areas of engineering and operations who do not direct charge to capital continue to be a major driver of the capitalized overhead allocation for FEI, but that the overall increase in O&M for these groups has increased to manage operations as opposed to facilitate capital. As a result, the relative proportion of engineering and operations involved in capital activity has decreased compared to the prior study. Consistent with the prior study, there also continues to be requirements from various other business areas to enable the capital program, such as procurement, information systems, legal, human resources, and finance.

The table below provides a comparison of the results of the 2023 Capitalized Overhead Study for FEI against prior levels of gross O&M, approved capitalized overhead rates, the net O&M, and the resulting capitalization rate as a percentage of capital expenditures over the past six years. This comparison includes the period covered by the last capitalized overhead study prepared in 2018 and approved by the MRP Decision, effective for the term of the Current MRP, as well as the year immediately prior.

Table D5-1: FEI Capital, O&M and Capitalized Overhead 2019-2024 ($000s)

	2019 Approved	2020 Approved	2021 Approved	2022 Approved	2023 Approved	2024 Approved	2024 Revised [1]
Gross O&M	281,148	314,410	329,307	333,303	354,647	370,207	370,207
Capitalized OH Rate on Gross O&M	12%	16%	16%	16%	16%	16%	14.5%
Capitalized OH	(33,738)	(50,306)	(52,689)	(53,328)	(56,744)	(59,233)	(53,680)
Net O&M	247,410	264,104	276,618	279,975	297,903	310,974	316,527
CapEx (excl OH)	189,281	242,349	254,715	301,782	336,373	285,505	285,505
Capitalization Rate on CapEx	18%	21%	21%	18%	17%	21%	19%

[1] 2024 Revised is representative of changes to 2024 Approved had the capitalized overhead rate from the 2023 Capitalized Overhead Study for FEI included in Appendix D5-1 been used.

As shown in Table D5-1 above, a 14.5 percent capitalized overhead rate for 2024 (applied to gross O&M net of biomethane O&M transferred to the BVA) results in a level of net O&M (gross O&M less capitalized overhead) that is higher compared to prior years, which is expected given the higher operating costs required in various departments as discussed in Section C2.2 of this Application. The proportion of capitalized overhead to the annual capital expenditures is presented as the capitalization rate. FEI's proposed capitalized overhead rate of 14.5 percent and the resulting capitalization rate of 19 percent are within a reasonable range compared to the prior years shown.

FEI estimates that the impact on customer delivery rates of a change to the capitalized overhead rate is approximately 0.35 percent for every 1 percent change in the capitalized overhead rate. Therefore, all else equal, decreasing the capitalized overhead rate from 16 percent to 14.5 percent would increase customer delivery rates by approximately 0.52 percent in the year of implementation (2025 in this case).

5.5 *RESULTS OF CAPITALIZED OVERHEAD STUDY FOR FBC*

For the term of the Rate Framework, FBC proposes a capitalized overhead rate of 15.5 percent of gross O&M, as compared to the current 15 percent rate approved by Order G-166-20. The increase in the rate is marginal and is generally a result of a recalculated general allocator for several support groups, partially offset by processes implemented to increase direct charging to capital in the operations and engineering functional areas, which resulted in a corresponding lower amount allocated to capital indirectly through the capitalized overhead rate.

The results of the 2023 Capitalized Overhead Study for FBC resulted in lower amounts of indirect capital in the areas of engineering and operations. There continue to be requirements from various other business areas to enable the capital program, such as procurement, information systems, legal, human resources, and finance.

KPMG also assessed FBC's Direct Overhead, which is a loading pool of supervisory and other administrative costs that are directly involved in capital projects. These costs are collected in standing orders and allocated to transmission & distribution capital projects at the end of the year. The primary reason for this approach is the administrative burden associated with charging certain costs to individual projects. Costs included in FBC's Direct Overhead are excluded from the O&M used for determining the indirect capitalized overhead rate, and are instead included directly as part of forecast Regular capital expenditures. The methodology to determine FBC's Direct Overhead remains consistent with prior years and is considered reasonable by KPMG. Based on the results of the Direct Overhead loading model for 2023, the estimated Direct Overhead loading pool is approximately $5.5 million, as compared to approximately $5.0 million in the capitalized overhead study prepared in 2018 for FBC.

The table below provides a comparison of the results of the 2023 Capitalized Overhead Study for FBC against prior levels of gross O&M, approved capitalized overhead rates, the net O&M, and the resulting capitalization rate as a percentage of capital expenditures over the past six years. This comparison includes the period covered by the last capitalized overhead study prepared in 2018 and approved by the MRP Decision, effective for the term of the Current MRP, as well as the year immediately prior.

Table D5-2: FBC Capital, O&M and Capitalized Overhead 2019-2024 ($000s)

	2019 Approved	2020 Approved	2021 Approved	2022 Approved	2023 Approved	2024 Approved	2024 Revised [1]
Gross O&M	59,201	62,200	65,302	68,032	72,667	74,322	74,322
Capitalized OH Rate on Gross O&M	15%	15%	15%	15%	15%	15%	15.5%
Capitalized OH	(8,880)	(9,330)	(9,795)	(10,177)	(10,900)	(11,148)	(11,520)
Net O&M	50,321	52,870	55,507	57,855	61,767	63,174	62,802
CapEx (excl OH)	57,633	93,244	87,573	83,140	93,776	93,933	93,933
Capitalization Rate on CapEx	15%	10%	11%	12%	12%	12%	12%

Note:

[1] *2024 Revised is representative of changes to 2024 Approved had the capitalized overhead rate from the 2023 Capitalized Overhead Study for FBC included in Appendix D5-2 been used.*

As shown in Table D5-2 above, a 15.5 percent capitalized overhead rate for 2024 results in a level of net O&M (gross O&M less capitalized overhead) that is higher compared to prior years, given the increases in gross O&M and the slight increase in the rate. The proportion of capitalized overhead to the annual capital expenditures is presented as the capitalization rate. FBC's proposed capitalized overhead rate of 15.5 percent and the resulting capitalization rate of 12 percent are within a reasonable range compared to the prior years shown.

FBC estimates that the impact on customer rates of a change to the capitalized overhead rate is approximately 0.17 percent for every 1 percent change in the capitalized overhead rate. Therefore, all else equal, increasing the capitalized overhead rate from 15 percent to 15.5 percent would decrease customer rates by approximately 0.09 percent in the year of implementation (2025 in this case).

5.6 CONCLUSION

Based on the conclusions of the 2023 Capitalized Overhead Studies conducted by KPMG, FEI is proposing to apply a capitalized overhead rate of 14.5 percent of gross O&M, net of biomethane O&M transferred to the BVA, and FBC is proposing to apply a capitalized overhead rate of 15.5 percent of gross O&M, to regular capital expenditures for the term of the Rate Framework.