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September 21, 2022

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

Attention: Ms. Leigha Worth, Executive Director

Dear Ms. Worth:

Re: FortisBC Energy Inc. (FEI)

Annual Review for 2023 Delivery Rates (Application)

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

On July 29, 2022, FEI filed the Application referenced above. In accordance with the regulatory timetable established in British Columbia Utilities Commission Order G-240-22 for the review of the Application, FEI respectfully submits the attached response to BCOAPO IR No. 1.

For convenience and efficiency, FEI has occasionally provided an internet address for referenced reports instead of attaching lengthy documents to its IR responses. FEI intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1.0 Reference: Exhibit B-2, page 14 (PDF page 24), Table 2-2; Exhibit B-2, Appendix A2, Table A2-1, Tabs "FEI Customers" and "FEI Customer Adds"

1.1 Please provide the calculation of the "12-month Weighted Average Additions" in Table 2-2.

Response:

Please refer to Tables 1 and 2 below for the calculation of the 12-month weighted average additions shown on Line 17 of Table 2-2 of the Application. Consistent with how FEI has calculated its average customer additions in its past Annual Review applications, FEI used a 12-month weighted average to reflect the average number of customers over a year. For example, the January additions are weighted for a full year (i.e., 12 months or a weighting of 12/12), while December additions are weighted for one month only (i.e., a weighting of 1/12).

Table 1: Calculation of the 12-month Weighted Average Additions for 2020 Actual and 2021 Actual

			2020 Actual			2021 Actual		
Line	Particular	Reference	Additions	Monthly Weighting	Weighted Additions	Additions	Monthly Weighting	Weighted Additions
	(1)	(2)	(3)	(4)	(5) = (3) x (4)	(6)	(7)	(8) = (6) x (7)
1	January	Table 2-2, Line 4	1,544	12/12	1,544	2,043	12/12	2,043
2	February	Table 2-2, Line 5	1,028	11/12	942	1,162	11/12	1,065
3	March	Table 2-2, Line 6	403	10/12	336	1,178	10/12	982
4	April	Table 2-2, Line 7	722	9/12	542	395	9/12	296
5	May	Table 2-2, Line 8	726	8/12	484	(37)	8/12	(25)
6	June	Table 2-2, Line 9	921	7/12	537	(167)	7/12	(97)
7	July	Table 2-2, Line 10	824	6/12	412	(507)	6/12	(255)
8	August	Table 2-2, Line 11	848	5/12	353	256	5/12	107
9	September	Table 2-2, Line 12	338	4/12	113	862	4/12	287
10	October	Table 2-2, Line 13	2,006	3/12	502	1,797	3/12	449
11	November	Table 2-2, Line 14	2,010	2/12	335	2,035	2/12	339
12	December	Table 2-2, Line 15	2,028	1/12	169	1,711	1/12	143
13	**12-Mth Weighted Average**	**Sum of Ln 1 to 12**			**6,268**			**5,334**

Table 2: Calculation of the 12-month Weighted Average Additions for 2022 Projected and 2023 Forecast

			2022 Projected			2023 Forecast		
Line	Particular	Reference	Additions	Monthly Weighting	Weighted Additions	Additions	Monthly Weighting	Weighted Additions
	(1)	(2)	(3)	(4)	(5) = (3) x (4)	(6)	(7)	(8) = (6) x (7)
1	January	Table 2-2, Line 4	1376	12/12	1,376	1262	12/12	1,262
2	February	Table 2-2, Line 5	627	11/12	575	562	11/12	515
3	March	Table 2-2, Line 6	626	10/12	522	572	10/12	477
4	April	Table 2-2, Line 7	174	9/12	131	140	9/12	105
5	May	Table 2-2, Line 8	18	8/12	12	-12	8/12	(8)
6	June	Table 2-2, Line 9	64	7/12	37	41	7/12	24
7	July	Table 2-2, Line 10	-10	6/12	(5)	-24	6/12	(12)
8	August	Table 2-2, Line 11	678	5/12	283	290	5/12	121
9	September	Table 2-2, Line 12	582	4/12	194	526	4/12	175
10	October	Table 2-2, Line 13	1568	3/12	392	1425	3/12	356
11	November	Table 2-2, Line 14	1619	2/12	270	1489	2/12	248
12	December	Table 2-2, Line 15	1531	1/12	128	1406	1/12	117
13	**12-Mth Weighted Average**	**Sum of Ln 1 to 12**			**3,913**			**3,381**

1.2 Please fully explain when the forecast customer additions for 2022 and 2023 were prepared.

Response:

FEI prepared the 2022 Seed Year and 2023 Forecast customer additions in March/April 2022.

As described in Appendix A3 of the Application, actual data from 2018-2021 was used to develop the seed year forecast (2022) and the forecast for the test year (2023). No actual 2022 data was used for residential or commercial customer forecasts. The seed year forecast for commercial customers is developed as soon as the prior year actuals are finalized and the seed year forecast for residential customers is developed as soon as the Conference Board of Canada (CBOC) long-term forecast of single and multi-family housing starts becomes available.

1.3 Please fully discuss the impact that the recent rise in interest rates will have on new customers forecast for FEI in 2022 and 2023.

Response:

While customer additions are the result of many factors that may be both compounding and offsetting, the likely impact of increasing interest rates on the new homes market in general is that it will make buying a new home more difficult as the cost of borrowing increases, and therefore, may result in lower demand for new homes.

As the new homes market adjusts to the rising interest rates, there may be an impact on FEI's new customer additions. If the impact of rising interest rates causes the new homes market to produce fewer new homes, FEI's forecast method (and inputs to the method) will reflect fewer attachment opportunities. FEI does not anticipate receiving updated inputs with which to adjust the forecasts that are embedded in the 2023 delivery rate forecasts.

Despite the above, the impact of rising interest rates is only one of a number of issues affecting FEI's new customer forecasts. FEI expects that in addition to interest rates, customer additions will continue to be influenced by many factors, including customer behavior, economic activity, immigration levels, DSM, government policies (such as environmental policy), new technology, housing formations, etc. FEI's current forecasting methods fully account for all of these intrinsic factors.

2.0 Reference: Exhibit B-2, page 17 (PDF page 27)

Preamble: On page 17, at lines 8-12, FEI states:

> FEI is forecasting a decrease in consumption in the 2023 Forecast (2023F) compared to the 2022 Approved. The 2023F normalized load is forecast to be approximately 221.3 PJ, which is a decrease of 12.8 PJ compared to the 2022 Approved forecast. The decrease in 2023F is due to decreased load in the industrial sector, which is primarily due to FEI's contract with BC Hydro Island Generation (IG) expiring in April 2022.

2.1 Please provide a full discussion of the status of the FEI contract with BC Hydro, and any possibility for renegotiation or extension of the contract.

<u>Response:</u>

Please refer to the response to BCUC IR1 5.2.

3.0 Reference: Exhibit B-2, page 28 (PDF page 38)

Preamble: On page 28, at lines 11-13, FEI states:

> BC Hydro IG is now included in the 2023F as a fully interruptible RS 22 customer with a forecast minimum contract demand of 12 TJ per month (or 13 1.2 PJ per year).

3.1 Please provide the reasoning behind the inclusion of BC Hydro Island Generation as a fully interruptible RS 22 customer and the effective date of inclusion.

Response:

Please refer to the response to BCUC IR1 5.2.

4.0 Reference: Exhibit B-2, page 35 (PDF page 45), Table 5-1

4.1 Please provide an updated Table 5-1 which includes actual and approved amounts for 2015-2021. In the response, please fully explain any material variances and changes in trends of revenues.

Response:

Please refer to Table 1 below which shows the 2015-2021 Approved and Actual Other Revenue amounts.

Table 1: Other Revenue Approved and Actual (2015 to 2021)

	2015		2016		2017		2018		2019		2020		2021	
	Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual
Late Payment Charge	2.542	2.545	2.314	2.326	2.180	2.750	2.688	2.583	2.549	2.778	1.671	0.818	2.954	2.622
Application Charge	3.033	3.123	3.060	3.253	3.118	3.139	3.148	2.875	1.925	1.707	1.965	1.668	1.984	1.906
NSF Returned Cheque Charges	0.089	0.076	0.088	0.081	0.076	0.091	0.080	0.080	0.028	0.037	0.028	0.011	0.028	0.024
Other Recoveries	0.202	0.243	0.202	0.271	0.243	0.229	0.288	0.269	0.288	0.353	0.288	0.297	0.288	0.268
NGT Related Recoveries	2.356	2.292	2.898	2.962	4.507	3.966	4.297	4.380	4.378	3.946	3.792	4.252	3.698	3.925
Biomethane Other Revenue	(0.070)	(0.217)	0.294	0.263	0.448	0.361	0.532	0.464	0.614	0.614	0.937	0.937	0.951	0.926
SCP Third Party Revenue	15.035	15.035	14.957	14.957	14.347	14.347	16.976	16.976	17.072	17.072	10.877	10.877	14.053	14.053
LNG Capacity Assignment	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039	18.039
Total Other Operating Revenue ($millions)	41.226	41.136	41.852	42.152	42.958	42.922	46.048	45.666	44.893	44.546	37.597	36.899	41.995	41.763

On an overall basis, the annual variances between Approved and Actual Other Revenue are relatively minor (variance of less than 2 percent of the total Other Revenue in all years in the above table). FEI provides the following explanation for the notable variances or changes in trends in specific Other Revenue items:

- In 2020 and 2021 the Actual Late Payment Charges were lower than Approved because FEI suspended the collection of Late Payment Charges in early 2020 until March 2021 due to the COVID-19 pandemic. As discussed in Section 12.2.1 of the Application, the variances in 2020 and 2021 Late Payment Charges are included in the calculation of the exogenous factor impact related to the COVID-19 pandemic;

- In 2018, Actual Application Charges were less than Approved due to the charge being reduced from $25 to $15 as approved by the BCUC in the FEI 2016 Rate Design Application Decision and Order G-135-18;

- The NGT Related Recoveries and Biomethane Other Revenues vary year-over-year depending on the number of customers and throughput in each year; and

- The SCP Third Party Revenue has been reduced since 2020 due to the firm service contract with NW Natural, formerly Northwest Natural Gas Co., expiring on October 31, 2020.

5.0 Reference: Exhibit B-2, page 39 (PDF page 49) Table 5-6 and page 40 (PDF page 50)

Preamble: On page 40, lines 6-8, FEI states:

The forecast mitigation revenue for the SCP west to east capacity for 2023 is based on the current forward market price differentials for summer 2023. FEI forecasts generating net mitigation revenue in the amount of $0.002 million in 2023.

5.1 Please provide 5 years of history in Table 5-6.

Response:

Table 1 shown below provides the last five years of Approved SCP revenue components.

Table 1: 2017-2021 Approved SCP Revenue Components ($ millions)

	Approved 2017	Approved 2018	Approved 2019	Approved 2020	Approved 2021
MCRA	$ 3.600	$ 3.600	$ 3.600	$ 5.220	$ 13.284
NW Natural	6.421	6.482	5.763	4.154	-
Net Other Mitigation - West to East Capacity	4.326	6.894	7.709	1.503	0.769
Total SCP Revenue	**$ 14.347**	**$ 16.976**	**$ 17.072**	**$ 10.877**	**$ 14.053**

5.2 Please provide the market price differentials for each of the years provided in response to 4.1

Response:

FEI interprets this question as referring to the historical years provided in the response to BCOAPO IR1 5.1 (not 4.1), within which the historical forecast and approved mitigation revenues for the SCP west to east capacity was provided.

The market price differentials used in the 2017 forecast include:

Station 2 @ 1.72 CAD/GJ

Kingsgate @ 2.46 CAD/GJ

The market price differentials used in the 2018 forecast include:

Station 2 @ $1.85 CAD/GJ

Kingsgate @ $2.50 CAD/GJ

The market price differentials used in the 2019 forecast include:

Station 2 @ $1.03 CAD/GJ

Kingsgate @ 1.87 CAD/GJ

The forecast and approved mitigation revenue for the 2020 SCP west to east capacity was based on the fixed price term deals that were already transacted and in place with a counterparty for summer 2020, as the Annual Review for 2020 and 2021 Delivery Rates was prepared and filed during the summer of 2020.

The market price differentials used in the 2021 forecast include:

Station 2 @ $2.04 CAD/GJ

Kingsgate @ $2.50 CAD/GJ

The market price differentials used in the 2022 forecast include:

Station 2 @ $2.44 CAD/GJ

Kingsgate @ $2.88 CAD/GJ

The market prices (i.e., Station 2 and Kingsgate) have changed and will continue to evolve over time. Therefore, the revenues derived from west to east movements on SCP will vary as the market unfolds.

5.3 Please provide the current forward market price differentials used in the preparation of the FEI forecast, and the current estimate or market price differentials.

Response:

The market price differentials used in the 2023 Forecast provided in this Application were based on data from June 7, 2022 for the time period of April to October 2023:

Station 2 @ $5.00 CAD/GJ
Kingsgate @ $5.29 CAD/GJ

The current market price differentials (i.e., from September 19, 2022) are as follows:

Station 2 @ $4.07 CAD/GJ
Kingsgate @ $4.35 CAD/GJ

The updated market price differentials have no material impact on the forecast of mitigation revenue for the SCP west to east capacity for 2023 submitted in the Application.

6.0 Reference: Exhibit B-2, page 45 (PDF page 55)

Preamble: On page 45, FEI discusses reasons for OPEB expense variances, including changes in amortization of actuarial gains and increases in discount rates.

6.1 Please provide a copy of the actuarial report that quantifies the impact of the changes in assumptions.

Response:

Please refer to Attachment 6.1 for a copy of the 2023 net benefit cost estimate provided by FEI's actuarial consultant Willis Towers Watson (WTW). The financial data provided in this report was based on the data for the entire FortisBC Holdings Inc. group. Only FEI's portion is used to prepare pension and OPEB expenses for 2023 rate-setting. As stated in the report, the financial data is provided for FEI use only.

The table below provides the Pension and OPEB expense reconciliation from the WTW report to the 2023 Annual Review.

Estimated 2023 Net Benefit Cost ($000s)	FEI Registered Plans[1]	Supplemental Plans FEI[2]	Supplemental Plans Exec SERP[3]	FEI OPEB[4]	Total (FEI Consolidated)	Excl FN	Total (2023 Annual Review)
	(A)	(B)	(C)	(D)	(E) = (A)+(B)+(C)+(D)	(F)	(G) = (E)-(F)
Employer current service cost	19,033	208	382	2,951	22,574	33	22,541
interest cost	37,776	470	155	4,344	42,745		42,745
Expected return on assets	(46,570)				(46,570)		(46,570)
Amortization:							-
-Net actuarial (gain) loss		28		(2,275)	(2,247)		(2,247)
-Prior service cost (credit)	(1,282)				(1,282)		(1,282)
Total ($000s)	$ 8,957	$ 706	$ 537	$ 5,020	$ 15,220	$ 33	$ 15,187

Notes to table

1. FortisBC energy Inc. - Registered Pension Plans "FEI" column in "Total by Entity" section at page 7 of 10
2. FortisBC energy Inc. - Supplemental Pension Plans "FEI" column in "Total by Entity" section at page 7 of 10
3. FortisBC energy Inc. - Supplemental Pension Plans "Executive SERP" section at page 7 of 10
4. FortisBC energy Inc. - Post-Retirement Benefit Plans "FEI" column in "Total by Entity" section at page 8 of 10

6.2 Please fully explain why the amortization of actuarial gains has increased.

Response:

The actuarial gain refers to a decrease in the projections used to value FEI's defined benefit pension plan obligations. When items such as the discount rate increase compared to what was forecast in prior actuarial reports, it results in an actuarial gain, as FEI is projected to pay less in pension benefits than what was projected in prior actuarial reports. In such a case, FEI makes a required actuarial adjustment by decreasing its pension plan obligation to account for the actuarial gain, which is recorded through the US GAAP Pension & OPEB Funded Status deferral account. In accordance with US GAAP, the actuarial gain is amortized into pension expense over time.

Based on WTW's forecast, the 2023 Forecast actuarial gain amortization is $2.2 million compared to $0.2 million for 2022 Approved.

6.3 Please fully explain the change in discount rate. In the response, please provide the prior discount rate, the proposed discount rate, and the reasons for the change.

Response:

The 2022 Approved discount rate was 3.5 percent and the 2023 Forecast discount rate is 4.5 percent. As described in the Application on page 45, lines 13 to 16, the discount rates are determined with reference to the market rate of interest on high quality debt instruments (i.e., high rated corporate bond yields) at a point in time, which are established based on the trading activities of market participants, thus they reflect the consensus expectations of the capital markets. FEI does not have direct information for the reasons driving the increasing yield on long-term debt instruments, but it is likely driven by the long-term economic uncertainty related to high inflation rates, volatility in global energy supply and pricing, the war in Ukraine, and any other factors that are driving economic uncertainty.

7.0 Reference: Exhibit B-2, page 46 (PDF page 56), Section 6.3.3

7.1 Please provide a detailed analysis that demonstrates how integrity digs have been completely removed from the base O&M used in the formula based portion of O&M.

Response:

As part of FEI's 2020-2024 MRP Application, FEI provided a detailed discussion of the proposed change in the treatment of integrity dig related costs from formula based O&M (Base O&M) to flow-through O&M.

FEI provides the following excerpts from pages C-22 through C-24 of the MRP Application describing the proposed flow-through treatment which was approved by the BCUC in the MRP Decision and Order G-165-20 (please refer to the response to BCOAPO IR1 7.2 for the applicable excerpts from the MRP Decision).

> **Integrity Digs**
>
> FEI proposes to treat the costs of integrity digs, a critical element of the IMP, outside of the index-based O&M, as there is considerable uncertainty related to scope, cost, timing and volume of expected digs during the Proposed MRP term. The proposed flow through treatment of integrity dig costs during the Proposed MRPs relieves the constraints of index-based O&M on addressing pipeline safety issues and is appropriate based on the wide range of scope, costs, timing and volume of integrity digs that may be experienced over the term of the Proposed MRPs.
>
> For the period 2014 to 2019, expenditures for integrity digs have varied between a low of $2.3 million to a high of $3.2 million, with the costs incurred dependent on the required scope of work and the number of integrity digs…
>
> …To provide greater transparency, FEI believes the preferred alternative is to flow all of the integrity dig costs outside of Base O&M.
>
> Given the uncertainties associated with integrity digs, the importance of continuing to focus on this vital activity, the level of transparency gained, and the potential impacts of the IGU project, accounting for the integrity digs as a flow through provides an effective solution.

Accordingly, FEI included an adjustment to the 2019 Base O&M of $2.6 million to remove all integrity dig related expenditures. This adjustment was first shown in Table C2-1 of the MRP Application (page C-19), which was subsequently revised in the response to BCUC IR1 24.1 of the MRP Application, as shown below.

Revised Table C2-1: FEI 2019 Base O&M ($millions)

2018 actual Base O&M	$	238.693
Add temporary savings		1.677
Shared Services Studies Impact		(0.338)
Deduct 2018 actual FHI Management Fee		(12.383)
Adjusted 2018 Base O&M	$	227.649
2019 Inflator		1.02198
2019 Base O&M before adjustments	$	232.653
Adjustments:		
Exogenous Factors:		
2019 Z factor (EHT net of MSP)		0.972
Deferrals:		
FAES overhead		0.786
BCUC levies		(2.839)
NGIF funding		(0.409)
Flow Through treatment:		
Integrity Digs		(2.600)
LNG Plant O&M		5.101
2019 Normalized Forecast FHI Management Fee		11.682
2019 Reclass of FHI corporate services charged only to FEI		0.387
Total adjustments		13.081
New funding for MRP term	$	10.416
2019 Base O&M	$	256.150

7.2 Please provide the specific quote in the MRP Decision and Order G-165-20 that specifically indicates that all integrity digs are excluded from formula O&M.

Response:

FEI received approval from the BCUC to treat integrity digs as Flow-through expenses on page 74 of the MRP Decision:

> **The Panel approves FEI's proposal to capture variances in integrity digs in the Flow-through Deferral Account.** The Panel also agrees that costs associated with integrity digs are primarily outside of FEI's control. FortisBC has

> demonstrated there can be considerable uncertainty related to scope, cost, timing and volume of expected digs during the Proposed MRP term. Given the safety purpose of these digs, the Panel agrees with the CEC that there should not be cost pressure to reduce integrity digs.

This treatment was further affirmed by the BCUC in Section 4.2 of the MRP Decision (Forecast O&M Expenditures). On page 118 of the MRP Decision, the BCUC listed the items that FEI requested to forecast annually during the MRP (i.e., non-formula O&M items). One of these items was FEI integrity digs. On page 119 of the MRP Decision, the BCUC stated the following:

> The Panel agrees these proposed forecast O&M expenditures 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. Accordingly, the Panel finds it is appropriate for these O&M items to be forecast annually, for inclusion in rates for the forecast year, subject to approval of the forecast amounts by the BCUC during the Annual Review process.

8.0 Reference: Exhibit B-2, page 49 (PDF page 59), Section 6.3.3.2

Preamble: On lines 4-7 of page 49, FEI discusses CPCN related integrity expenditures and states:

> FEI is forecasting a total of $1.0 million in incremental integrity management costs due to increased integrity-related activities such as ILI data collection and analysis (as a result of the ongoing IGU project), and development of a sustainable quantitative risk assessment process (QRA) for FEI's transmission pipelines (as identified in the CTS-TIMC project CPCN application).

8.1 Please provide all references to the CPCN applications where FEI identified increased integrity related expenditures.

Response:

FEI identified increased/incremental integrity related expenditures in both the Inland Gas Upgrade (IGU) and the Coastal Transmission System Transmission Integrity Management Capabilities (CTS TIMC) CPCN applications. With respect to specific references in the CPCN applications, please refer to the following:

- For **IGU**, please refer to Section 4.3.1.3 of the IGU Project CPCN Application as well as the response to CEC IR1 31.2 which highlighted that future O&M expenditures are included in the financial analysis for the integrity digs as a result of each ILI integrity run.
- For **CTS TIMC**, please refer to Section 4.5 and Table 4-4 of the CTS TIMC Project CPCN Application where FEI discussed ongoing O&M costs associated with regular integrity management activities and provided a high-level NPV analysis of incremental O&M costs due to the EMAT ILI runs. Please also refer to Section 5.11 of the CTS TIMC Application where FEI discussed the type of post-project activities and potential timing. Specifically, FEI stated: "FEI will request approval of the incremental increase in O&M or Sustainment Capital either in the MRP Capital Forecast Update filed as part of the 2023 Annual Review, or in the next MRP or RRA filing, depending on when the runs are planned. As integrity digs have been approved for flow-through treatment during the term of the MRP, FEI will bring forward requests for any additional integrity dig costs that are associated with the capabilities enabled by the CTS TIMC Project in its annual reviews under the MRP."

8.2 Please provide all references to the CPCN decisions where the BCUC explicitly approved incremental integrity expenditures.

<u>Response:</u>

The BCUC Decisions in relation to the IGU and CTS TIMC CPCN projects resulted in the issuance of CPCNs for these projects based on the BCUC's determination that the proposed projects were in the public interest, rather than explicit approval of incremental project-related costs to be recovered in rates. In its CPCN applications, FEI provided forecasts of the incremental sustainment capital and O&M expenditures resulting from these projects, and these forecasts were reviewed and subject to information requests by the BCUC and interveners. However, consistent with past practice, FEI did not seek approval of the incremental costs in the CPCN proceeding, with the understanding that these costs would be reviewed and approved in a rate-setting proceeding.

As discussed on page 46 of the Application, footnote 26, as part of the MRP Decision and Order G-165-20, the BCUC approved the continuation of the process to review Major Projects outside of the Proposed MRPs, including bringing forward any changes to O&M or regular capital as a result of a Major Project in the appropriate **rate-setting** proceedings.

9.0 Reference: Exhibit B-2, page 59 (PDF page 69), Section 7.2.1.1.1

Preamble: In Section 7.2.1.1.1, FEI discusses significant inflationary pressures.

9.1 Please provide a detailed analysis of sustainment capital that clearly identifies:

9.1.1 The initial forecast of sustainment capital by project.

9.1.2 The impact of inflationary pressures on the initial capital forecasts by project.

9.1.3 New capital projects.

<u>Response:</u>

Please refer to the response to BCUC IR1 14.1.

9.2 Please provide a detailed analysis of the inflation included in the initial sustainment capital projects, by project.

<u>Response:</u>

Please refer to the response to BCUC IR1 14.1.

9.3 Please provide a detailed analysis of the revised inflation included in each of the initial sustainment capital projects, by project.

<u>Response:</u>

Please refer to the response to BCUC IR1 14.1.

10.0 Reference: Exhibit B-2, page 64 (PDF page 74)

10.1 Please fully explain when FEI first became aware of the issues that lead to the Kelowna Space Project?

Response:

FEI became aware of the office space issues in 2019; however, and as discussed on page 64 of the Application, FEI was only in the early stages of developing a strategy to address the issues at the time of the MRP proceeding. At that time, FEI had only started to develop a strategy and working plan to determine possible alternatives and these plans were not sufficiently advanced to a point that a preferred option (or even all feasible alternatives) had been identified, including the estimated cost of a preferred option or alternatives. Given the very preliminary stage of the project, it would not have been reasonable to include any cost estimates in the Original Forecasts for Other Capital.

10.2 Please fully explain why costs related to the Kelowna facility were not included in FEI's Original Forecasts.

Response:

Please refer to the response to BCOAPO IR1 10.1.

11.0 Reference: Exhibit B-2, page 101 (PDF page 111), Section 10.3.3.

Preamble: In Table 10.6, FEI provides an analysis of the Clean Growth Innovation fund.

11.1 Please confirm that the balances in the Clean Growth Innovation Fund are included as no cost capital. If not confirmed, please fully explain the treatment of the balances.

Response:

FEI is unsure what BCOAPO intended by the question's reference to "no cost capital" in the question, but FEI provides a description of the regulatory treatment for the Clean Growth Innovation Fund (CGIF) below.

The balances recorded in the CGIF deferral account, as shown in Table 10-6 of the Application, will be used to fund pilot projects or research related to the production and delivery of renewable gases, carbon capture, utilization and storage, as well as broad low-carbon research activities such as the Low-Carbon Resource Initiative (LCRI). As approved by the MRP Decision and Order G-165-20, the treatment of the CGIF is that both costs and customer rider recoveries are captured in a non-rate base deferral account, attracting FEI's weighted-average cost of capital (WACC). To the extent that the rider recoveries exceed the costs, which is currently the case with this deferral account, FEI would record a negative weighted-average cost of capital return on the account, effectively crediting customers at the weighted-average cost of capital rate for the net balance of customer funds held by the utility.

11.2 Please fully explain how the Forecast Gross Additions of $2.5 million in 2023 were forecast.

Response:

The Forecast Gross Additions for 2023 were determined by summing the total of a) known expenditures for approved projects, b) forecast expenditures for approved projects, and c) anticipated expenditures from future portfolios.

For clarity, categories a) and b) are related to approved Portfolio 1-4 expenditures and category c) is for Portfolio 5-6 expenditures. Portfolios 5 and 6 were not approved at the time of filing, so the Forecast Gross Additions were forecast based on expected future Portfolio approvals and estimates of known expenses (such as NGIF operating fees).

The Forecast Gross Additions in each of these three categories are:

- $0.35 million for LCRI annual fees (category a);
- $0.20 million for NGIF projects (category b);
- $0.15 million for the UBC Okanagan Hydrogen Lab (category b);
- $1.45 million for future Portfolios 5 and 6 projects (category c); and
- $0.35 million for NGIF operating fees in 2023 (category c).

FEI also notes that since this is a non-rate base deferral account, only actual additions will be recorded in the account, and the amounts forecast in the deferral have no impact on the rate proposals included in the Application.

11.3 Please confirm that, assuming the 2023 level of additions continues in 2024, that the 2023 opening balance will remain a credit balance at the end of the current MRP plan, in 2024.

Response:

Confirmed. If the 2024 gross additions are equal to the 2023 forecast level of gross additions and the 2024 recoveries from the innovation rider are also equal to the 2023 forecast level of recoveries, then the ending balance in 2024 will be in a credit position. As directed by the BCUC on page 156 of the MRP Decision and Order G-165-20, FEI is to return any unused balance in the deferral account to customers at the end of the current MRP term. FEI will propose a disposal mechanism for BCUC review when setting the rates for 2025.

11.4 Please explain why the current level of rider funding should not be suspended at the end of 2022.

Response:

FEI is working to expand the number of qualified proposals it is receiving for grant funding by working directly with proponents that are looking to pilot innovative projects in British Columbia which meet FEI's CGIF criteria.

In addition to the NGIF, UBC Okanagan and LCRI expenditures (please refer to the response to BCOAPO IR1 11.2), FEI is working on several projects outside of these organizations, including:

- An industrial hydrogen blending demonstration project in BC;
- A carbon sequestration pilot project in BC; and
- A natural gas displacement project using syngas at a BC pulp mill.

In fact, Portfolio 5, which was approved after the filing of this Application, included funding for the above-referenced industrial blending pilot. At $2.0 million, Portfolio 5 is the largest portfolio approved to date and was driven by several grants for BC-based projects:

- $1.3 million for an industrial hydrogen blending project at a site in BC;
- $0.1 million for a study into lowering greenhouse gas emissions in BC;
- $0.5 million for two UBC-led partnerships that would improve RNG yields and expand feedstocks in BC; and
- $0.1 million for data from an integrated gas/electric/geothermal residential project in BC.

It is likely that the other in-province pilots referenced above will also require larger CGIF expenditures within future Portfolios. FEI also notes that the since the CGIF was established in August 2020, there was one Portfolio approved in 2020, two in 2021 and three so far in 2022 (with the potential for a fourth before year-end).

FEI considers these projects critical steps toward reducing emissions in British Columbia and each project will utilize funds from the CGIF, in addition to other future projects in 2023 and 2024 which may be approved through the CGIF governance processes. FEI believes it would be counterproductive to suspend the CGIF rider at the end of 2022 when the size and frequency of the approved spending Portfolios is increasing. The CGIF and rider were approved as part of the MRP Decision and Order G-165-20 to remain in place until the conclusion of the MRP term.

12.0 Reference: Exhibit B-2, page 102 (PDF page 112)

Preamble: On lines 1-7, FEI states:

> To date, FEI has completed four portfolio reviews with approved spending of $4.3 million, with a further two portfolio reviews anticipated by year-end 2022. The fund approvals are generally focused on the production and delivery of renewable gases (renewable natural gas, syngas, hydrogen), carbon capture, as well as funding FEI's participation in broad low-carbon research activities such as the Low-Carbon Resource Initiative, which is a joint initiative between the Electric Power Research Institute and GTI Energy to accelerate the development and demonstration of low- and zero-carbon energy technologies.

12.1 Please provide a detailed analysis and explanation of each of the portfolios reviewed and approved.

Response:

Table 10-8 of the Application provides a detailed analysis and explanation of the initiatives approved within Portfolios 3 and 4.

Similarly, Table 10-7 in FEI's Annual Review for 2022 Delivery Rates Application provided a detailed analysis and explanation of the initiatives approved within Portfolios 1 and 2. FEI has reproduced Table 10-7 below.

Table 10-7: CGIF Approved Project Funding

Primary Partner	Category	CGIF Funding Approved	Project Description
NGIF	Carbon Capture	$92,015	Field pilot of carbon recycling system designed to lower oil & gas emissions directly at source. The unit captures CO2 directly from any flue stack of sufficiently large volume, and converts it into marketable mineral feedstocks.
NGIF	Carbon Capture	$28,042	Testing of an adsorption technology using waste heat from a CHP that uses less electricity vs conventional chillers.
NGIF	Carbon Capture	$51,414	Demonstration of membrane-based carbon capture technology for flue emissions.
NGIF	Carbon Capture	$150,000	Retrofit of Once-Through Steam Generator with modular decarbonization systems reduce 90 percent of the carbon emissions. If successful, this technology has potential for carbon capture in marine natural gas transportation applications.
	Carbon Capture Total	**$321,471**	
NGIF	Combined Heat & Power	$15,110	Demonstration of a commercial building using natural gas, CHP's and solar panels disconnected from the electrical grid.
	Combined Heat & Power Total	**$15,110**	

Primary Partner	Category	CGIF Funding Approved	Project Description
NGIF	Low-Carbon Syngas	$25,707	Development of patented photocatalysts to convert carbon dioxide (CO2) and methane (CH4) simultaneously into low carbon-intensity synthesis gas.
	Low-Carbon Syngas Total	**$25,707**	
UBCO	Low-Carbon Hydrogen	$500,000	Development of a novel scalable and automated hydrogen-enriched natural gas (HENG) laboratory setup for conducting an integrated experimental studies on the performance and feasibility of HENG - from injection, mixing quality, material exposure, separation and combustion, to emission.
NGIF	Low-Carbon Hydrogen	$77,122	Prototype development and testing of novel methane pyrolysis process, with two end products, hydrogen and carbon black.
NGIF	Low-Carbon Hydrogen	$42,845	Prototype development and testing of novel methane pyrolysis process, with two end products, hydrogen and carbon black.
NGIF	Low-Carbon Hydrogen	$25,707	Testing of a patented nano-catalyst that can reduce cost of PEM electrolysers used in production of hydrogen by reducing the amount of platinum catalyst required.
NGIF	Low-Carbon Hydrogen	$114,084	This project will test technology that could reduce the cost of large-scale electrolysers. The testing will be in environments which will validate some of its key features, advantages, and benefits. This project will specifically test the ability to directly couple with solar and wind applications with variable load.
NGIF	Low-Carbon Hydrogen	$70,000	The project objective of this initiative is to demonstrate a novel process which uses renewable energy to split a mineral salt and water, producing hydrogen, hydroxide, sulfuric acid and oxygen. The hydroxide is combined with CO2 and then added to seawater, permanently sequestering CO2 as bicarbonate. This project will construct and operate a negative emissions hydrogen pilot plant.
NGIF	Low-Carbon Hydrogen	$38,560	Prototype development and testing of novel methane pyrolysis process, with two end products, hydrogen and carbon black.
	Low-Carbon Hydrogen Total	**$868,318**	
NGIF	Renewable Natural Gas	$77,121	Piloting the integration of technologies to improve RNG production by allowing the co-digestion of dairy, poultry and hog manure.
NGF (UBC)	Renewable Natural Gas	$105,000	Testing of an integrated pyrolysis system coupling pre-treatment, anaerobic digester and post-treatment to improving carbon conversion efficiency and lower the biogas and renewable natural gas production cost.
NGIF	Renewable Natural Gas	$77,121	Demonstration of the conversion of wood waste into both RNG and biocoal on a commercial scale. Biocoal would allow large industrial companies to reduce their reliance on fossil coal, while the natural gas distribution industry would benefit from additional access to lower-cost RNG.

Primary Partner	Category	CGIF Funding Approved	Project Description
NGIF	Renewable Natural Gas	$77,121	Developing of technology to convert forestry waste and agricultural crop waste into renewable natural gas (RNG). The proposed project will validate the design for scaling up existing technology. The project will include detailed design, construction, and testing of a system capable of processing 1 tonne of biomass per day. Supporting subsystems for surrogate methanation gas supply, instrumentation, controls, and data collection are also be included in the project.
	Renewable Natural Gas Total	**$336,363**	
NGF (UBC)	Transportation	$65,000	Experimental and field work to reduce the GHG emissions from natural gas engines using a combination of lab-based engine experiments, as well as field measurements of GHG emissions from in-use engines. The lab-based studies will develop methodologies for in-use emission characterization and strategies for emissions reductions, based on operating conditions of field engines. This will provide technologies for low GHG emission transportation systems and provide quantitative emission characterization for inventory and policy development purposes.
	Transportation Total	**$65,000**	
NGIF	Uncategorized	$215,253	NGIF operations and administration expenses per the NGIF/FortisBC Master Funding Agreement.
NGF (UBC)	Uncategorized	$130,000	• R&D on fugitive methane emissions quantification system • LNG transfer technology • Testing prototype micro-carbon capture and utilization system • R&D on combustion emissions sensing system • R&D on engine combustion emissions mitigation technologies (e.g. cylinder deactivation, air-fuel ratio optimization) • R&D on renewable energy (e.g. RNG) production and integration systems
	Uncategorized Total	**$345,253**	
	Grand Total	**$1,977,223**	

FEI is unable to provide any further detail than what has been provided in these tables as the Company is under confidentiality obligations unless and until results are publicly released.

13.0 Reference: Exhibit B-2, Appendix C1, Wood Mackenzie Market Report, page 2 (PDF Page 248)

13.1 Please provide Wood Mackenzie's best estimate of inflation for 2022, 2023, and 2024 for each chart in Wood Mackenzie's evidence.

<u>Response:</u>

FEI clarifies that the three figures for gas transmission and distribution costs included in the Wood Mackenzie Report in Appendix C1 are based on an aggregate of multiple indices, thus showing Wood Mackenzie's forecast of cost escalation related to gas transmission and distribution. The forecasts are not isolated to just inflation (i.e., CPI).

Please refer to Tables 1 to 3 below for Wood Mackenzie's forecasts (quarterly and annually) of cost escalation in each of the three figures included in the Wood Mackenzie Report related to gas transmission and distribution.

Table 1: Wood Mackenzie's Estimate of Gas Transmission & Distribution Costs (2020 Q1 – 2024 Q4)

	Average	Average %	High	High %	Low	Low %
Quarterly						
2020Q1	100.00	0.0%				
2020Q2	97.49	-2.5%				
2020Q3	98.62	1.2%				
2020Q4	104.11	5.6%				
2021Q1	112.92	8.5%				
2021Q2	121.54	7.6%				
2021Q3	130.55	7.4%				
2021Q4	133.14	2.0%				
2022Q1	131.22	-1.4%	131.22	-1.4%	131.22	-1.4%
2022Q2	134.37	2.4%	140.50	7.1%	128.24	-2.3%
2022Q3	131.42	-2.2%	142.55	1.5%	120.30	-6.2%
2022Q4	131.35	-0.1%	143.97	1.0%	118.72	-1.3%
2023Q1	131.74	0.3%	145.52	1.1%	117.96	-0.6%
2023Q2	130.90	-0.6%	145.66	0.1%	116.15	-1.5%
2023Q3	130.75	-0.1%	146.37	0.5%	115.13	-0.9%
2023Q4	131.93	0.9%	148.34	1.3%	115.53	0.3%
2024Q1	132.99	0.8%	150.12	1.2%	115.86	0.3%
2024Q2	133.11	0.1%	150.91	0.5%	115.31	-0.5%
2024Q3	132.83	-0.2%	151.26	0.2%	114.40	-0.8%
2024Q4	132.73	-0.1%	151.76	0.3%	113.70	-0.6%
Annual						
2020Q4	104.11	4.1%				
2021Q4	133.14	27.9%				
2022Q4	131.35	-1.3%	143.97	8.1%	118.72	-10.8%
2023Q4	131.93	0.4%	148.34	3.0%	115.53	-2.7%
2024Q4	132.73	0.6%	151.76	2.3%	113.70	-1.6%

Table 2: Wood Mackenzie's Estimate of Gas Transmission & Distribution - Labour Costs (2020 Q1 – 2024 Q4)

	Average	Average %	High	High %	Low	Low %
Quarterly						
2020Q1	100.00	0.0%				
2020Q2	99.69	-0.3%				
2020Q3	101.01	1.3%				
2020Q4	103.46	2.4%				
2021Q1	104.34	0.9%				
2021Q2	106.59	2.2%				
2021Q3	107.89	1.2%				
2021Q4	109.33	1.3%				
2022Q1	111.78	2.2%	111.78	2.2%	111.78	2.2%
2022Q2	113.28	1.3%	116.97	4.6%	109.59	-2.0%
2022Q3	114.76	1.3%	120.81	3.3%	108.71	-0.8%
2022Q4	116.11	1.2%	122.72	1.6%	109.50	0.7%
2023Q1	117.12	0.9%	124.24	1.2%	110.00	0.5%
2023Q2	118.02	0.8%	125.62	1.1%	110.41	0.4%
2023Q3	118.83	0.7%	126.89	1.0%	110.76	0.3%
2023Q4	119.69	0.7%	128.20	1.0%	111.18	0.4%
2024Q1	120.53	0.7%	129.46	1.0%	111.60	0.4%
2024Q2	121.41	0.7%	130.75	1.0%	112.08	0.4%
2024Q3	122.16	0.6%	131.87	0.9%	112.44	0.3%
2024Q4	122.90	0.6%	133.00	0.9%	112.81	0.3%
Annual						
2020Q4	103.46	3.5%				
2021Q4	109.33	5.7%				
2022Q4	116.11	6.2%	122.72	12.2%	109.50	0.2%
2023Q4	119.69	3.1%	128.20	4.5%	111.18	1.5%
2024Q4	122.90	2.7%	133.00	3.7%	112.81	1.5%

Table 3: Wood Mackenzie's Estimate of Gas Transmission & Distribution – Material Costs (2020 Q1 – 2024 Q4)

	Average	Average %	High	High %	Low	Low %
Quarterly						
2020Q1	100.00	0.0%				
2020Q2	95.06	-4.9%				
2020Q3	95.97	1.0%				
2020Q4	104.79	9.2%				
2021Q1	122.27	16.7%				
2021Q2	137.86	12.8%				
2021Q3	155.30	12.7%				
2021Q4	159.16	2.5%				
2022Q1	152.48	-4.2%	152.48	-4.2%	152.48	-4.2%
2022Q2	157.45	3.3%	166.22	9.0%	148.69	-2.5%
2022Q3	149.68	-4.9%	166.32	0.1%	133.03	-10.5%
2022Q4	148.03	-1.1%	167.20	0.5%	128.87	-3.1%
2023Q1	147.75	-0.2%	168.76	0.9%	126.73	-1.7%
2023Q2	145.02	-1.8%	167.55	-0.7%	122.50	-3.3%
2023Q3	143.82	-0.8%	167.65	0.1%	119.99	-2.0%
2023Q4	145.35	1.1%	170.34	1.6%	120.36	0.3%
2024Q1	146.64	0.9%	172.68	1.4%	120.60	0.2%
2024Q2	145.93	-0.5%	172.93	0.1%	118.92	-1.4%
2024Q3	144.54	-1.0%	172.45	-0.3%	116.64	-1.9%
2024Q4	143.51	-0.7%	172.26	-0.1%	114.76	-1.6%
Annual						
2020Q4	104.79	4.8%				
2021Q4	159.16	51.9%				
2022Q4	148.03	-7.0%	167.20	5.1%	128.87	-19.0%
2023Q4	145.35	-1.8%	170.34	1.9%	120.36	-6.6%
2024Q4	143.51	-1.3%	172.26	1.1%	114.76	-4.7%

13.2 Please compare the Wood Mackenzie estimate provided in response to 13.2 above to the FEI estimate of the I factor included in the Application and explain any differences.

Response:

The escalation forecasts included in the Wood Mackenzie Report and provided in the response to BCOAPO IR1 13.1 are not comparable to FEI's inflation factor (i.e., I-Factor). As explained in the response to BCOAPO IR1 13.1, Wood Mackenzie's forecast escalation is based on an aggregate of multiple indices for costs related to gas transmission and distribution (T&D) which FEI used to validate the cost pressure that has been experiencing in its sustainment capital portfolio. These forecasts are not isolated to just CPI and AWE, which are the two components that comprise FEI's I-Factor. Due to this, any comparison between the escalation factors shown by Wood Mackenzie and FEI's I-Factor would be irrelevant.

However, in order to be responsive, please refer to Table 1 below which compares FEI's I-Factor for 2022 and 2023 against the gas T&D cost escalation shown in the Wood Mackenzie Report (i.e., Table 1 of BCOAPO IR1 13.1). FEI also provides Table 2 below which compares the AWE factors used to calculate FEI's I-Factor each year against the labour cost escalation shown in the Wood Mackenzie Report (i.e., Table 2 of BCOAPO IR1 13.1). In order to increase the comparability between these sources, the comparisons shown in Tables 1 and 2 below are based on the period that was used to calculate FEI's I-Factors. For instance, FEI's 2022 I-Factor is a lagging indicator based on actual CPI and AWE for the period from July 2020 to June 2021; as such, FEI used the 2020 Q2 to 2021 Q2 data from the Wood Mackenzie Report for the comparison. Similarly, FEI's 2023 I-Factor is calculated based on actual CPI and AWE for the period from July 2021 to June 2022; as such, FEI utilized the 2021 Q2 to 2022 Q2 data from the Wood Mackenzie Report. Comparisons to FEI's 2020 and 2021 I-Factors are not possible as the data from the Wood Mackenzie Report does not go back to 2018 Q2 and 2019 Q2.

Table 1: Comparison between FEI's 2022 and 2023 I-Factors and Wood Mackenzie's Forecast Escalation for Gas T&D over the Same Period

	2022 (2020 Q2 – 2020 Q2)	2023 (2021 Q2 – 2022 Q2)
FEI's I-Factor	3.920%	4.580%
Wood Mackenzie Gas T&D Cost Escalation	24.669%	10.556%

Table 2: Comparison between AWE used in FEI's Calculation of the 2022 and 2023 I-Factors and Wood Mackenzie's Labour Escalation for Gas T&D over the Same Period

	2022 (2020 Q2 – 2020 Q2)	2023 (2021 Q2 – 2022 Q2)
AWE used for I-Factor Calculation	6.455%	4.235%
Wood Mackenzie Gas T&D Labour Cost Escalation	6.921%	6.276%

As Tables 1 and 2 above show, FEI's AWE is similar to the labour cost escalation shown in the Wood Mackenzie Report. For CPI, which is the other component of FEI's I-Factor and which is applied to non-labour formula O&M, the inflation is not comparable to that included in the Wood Mackenzie Report. The CPI component of the I-Factor provides a broad view of inflation that applies to all of FEI's formula non-labour O&M expense. FEI's non-labour costs consist of fees and administration costs, contractor costs, facilities, computer costs, materials and supplies, vehicle costs and employee expenses. These are the types of expenses to which CPI is more applicable. This confirms that the comparison is not relevant since the cost escalation shown by Wood Mackenzie includes many indices for costs, not just CPI and AWE.

14.0 Reference: Exhibit B-2, General

14.1 Please provide the FEI calculation of Weighted Average Cost of Capital, including return on debt and return on equity, for each of 2020, 2021, and projected for 2022, 2023 and 2024.

Response:

Please refer to Table 1 below for the calculation of the Weighted Average Cost of Capital (after-tax WACC), return on debt, and return on equity (ROE), for 2020 to 2021 Approved and Actual, 2022 Approved, and 2023 Forecast. FEI does not have information regarding long-term and short-term debt for 2024, thus 2024 is not included in Table 1 below.

Table 1: FEI's After-tax WACC, Return on Debt, and ROE from 2020 to 2023

Line	Particular	Reference	2020	2021	2022	2023
1	**Approved/Forecast**					
2	Equity Thickness	G-129-16	38.50%	38.50%	38.50%	38.50%
3	Return on Equity (ROE)	G-129-16	8.75%	8.75%	8.75%	8.75%
4	Long-Term Debt		57.09%	59.14%	59.50%	57.24%
5	Long-Term Debt Rate		4.91%	4.78%	4.65%	4.70%
6	Short-Term Debt		4.41%	2.36%	2.00%	4.26%
7	Short-Term Debt Rate		1.65%	2.19%	2.31%	3.95%
8	Tax		27.00%	27.00%	27.00%	27.00%
9						
10	Return on Debt	Line 4 x Line 5 + Line 6 x Line 7	2.88%	2.88%	2.81%	2.86%
11	Return on Equity (ROE)	Line 3	8.75%	8.75%	8.75%	8.75%
12	AT-WACC	Line 2 x Line 3 + (Line 4 x Line 5 + Line 6 x Line 7) x (1 - Tax rate)	5.47%	5.47%	5.42%	5.46%
13						
14	**Actual**					
15	Equity Thickness		38.50%	38.50%		
16	ROE		8.87%	8.76%		
17	Long-Term Debt		57.49%	59.43%		
18	Long-Term Debt Rate		4.91%	4.74%		
19	Short-Term Debt		4.01%	2.07%		
20	Short-Term Debt Rate		1.78%	1.26%		
21	Tax		27.00%	27.00%		
22						
23	Return on Debt	Line 17 x Line 18 + Line 19 x Line 20	2.89%	2.84%		
24	Return on Equity (ROE)	Line 16	8.87%	8.76%		
25	AT-WACC	Line 15 x Line 16 + (Line 17 x Line 18 + Line 19 x Line 20) x (1 - Tax rate)	5.53%	5.45%		

Attachment 6.1

June 3, 2022

Elliott He
Manager, Corporate Accounting
FortisBC Inc.
Suite 100 – 1975 Springfield Road
Kelowna, BC V1Y 7V7

FORTISBC ENERGY INC. & FORTISBC INC. ESTIMATED 2023 NET BENEFIT COSTS

Dear Elliott,

As requested by FortisBC Inc. & FortisBC Energy Inc. (collectively, the "Company"), we have prepared financial information with respect to the employee future benefits programs in accordance with the Section 715 of the Financial Accounting Standards Board's Accounting Standards Codification ("ASC 715"). Towers Watson Canada Inc. ("WTW") has prepared an updated estimate of the 2023 net benefit costs for the Company which are presented in this letter. WTW was objective in preparing this letter and is free from material financial interest in the outcome of the results presented.

The principal purpose of the letter is to present information on the estimated net benefit cost for 2023 with a discount rate of 4.50%, determined using corporate bond yields as at April 30, 2022.

All other assumptions remain the same as those disclosed in the Financial Information for Employee Future Benefit Programs as at December 31, 2021 in Accordance with ASC 715 reports for FortisBC Energy Inc. and FortisBC Inc. (collectively, the "Accounting Reports").

This letter is provided solely for the Company's use and for the specific purposes indicated above. It is not intended for, and may not be suitable for, use in any other context or for any other purpose. Except where we expressly agree in writing, this letter should not be disclosed or provided to any third party, other than as provided above. WTW accepts no responsibility for any consequences arising from any other party relying on this letter or any advice relating to its contents. There are no other intended third-party users of this letter or the work underlying it.

In preparing these results, we have relied upon information and data provided to us orally, electronically and/or in writing by the Company and other persons or organizations designated by the Company. We have relied on all the data and information provided, including plan provisions, membership data and asset information, as being complete and accurate. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We have not independently verified the accuracy or completeness of the data or information provided, but we have performed limited checks for consistency.

We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

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Towers Watson Canada Inc.

The results presented in this letter are directly dependent upon the accuracy and completeness of the underlying data and information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this letter and such inaccuracies may produce materially different results that could require that a revised letter be issued.

The results summarized in this letter involve actuarial calculations that require assumptions about future events. Other assumptions may also be reasonable and appropriate and their use would produce different results.

The summary of the 2023 net benefit costs and estimated funded statuses as at December 31, 2022 are presented below:

Estimated 2023 Net Benefit Cost ($000 CDN)				
	RPP	**SPP**	**PRB**	**Total**
FortisBC Energy Inc.	$9,941	$2,445	$5,231	***$17,617***
FortisBC Inc.	$(891)	$180	$955	***$244***

Estimated Pre-funded (Accrued) as at December 31, 2022 ($000 CDN)				
	RPP	**SPP**	**PRB**	**Total**
FortisBC Energy Inc.	$(7,293)	$(29,922)	(139,068)	***$(176,283)***
FortisBC Inc.	$(4,189)	$(2,248)	$(41,170)	***$(47,607)***

Further details on methods and assumptions used to perform our calculations can be found in Appendix A and Appendix B of this letter and a detailed breakdown of financial information by business unit has been included in Appendix C and Appendix D of this letter.

Actuarial Opinion

In our opinion:

- the membership data on which the financial information are based are sufficient and reliable for purposes of the valuation;
- the assumptions and methods employed in the valuation are appropriate for the purposes of the calculations; and
- the calculations have been made in accordance with our understanding of the requirements of ASC 715 and the Company's accounting policies.

This letter has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada.

The undersigned consultants with actuarial credentials meet the requirements of the Canadian Institute of Actuaries to render the actuarial opinions contained herein. There is no relationship between FortisBC Inc. or FortisBC Energy Inc. and WTW that impairs our objectivity.

Sincerely,

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Enclosures

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Appendix A: Covered Benefits, Accounting Policies, Data, Assets, Methods and Assumptions

Covered Benefits

Below is a list of each of the plans under which the covered benefits are provided.

- **Registered Pension Plans under FortisBC Inc.:**
  - FortisBC Retirement Income Plan (the "FRIP")
  - FortisBC IBEW Pension Plan (the "IBEW Plan")
  - MoveUP – FortisBC Pension Plan (the "MoveUp Plan")
- **Registered Pension Plans under FortisBC Energy Inc.:**
  - FortisBC Energy Inc. Retirement Plan for Management and Exempt Employees (the "M&E Plan")
  - FortisBC Energy (Vancouver Island) Inc. Employee's Retirement Plan (the "VI Plan")
  - FortisBC Energy Inc. Pension Plan for IBEW and MoveUp Members (the "Union Plan")
- **Supplemental Pension Arrangements under FortisBC Inc.:**
  - The Electric Supplemental DB Plan
  - The Electric Supplemental DC Plan
- **Supplemental Pension Arrangements under FortisBC Energy Inc.:**
  - FortisBC Energy Inc. Supplemental Retirement Plan (the "Supplemental M&E Plan")
  - FortisBC Energy (Vancouver Island) Inc. Supplemental Retirement Plan (the "Supplemental VI Plan")
  - Supplemental Pension Plan for Employees of FortisBC Holdings Inc. (the "Supplemental Energy Plan")
  - FortisBC Holdings Inc. Supplemental Executive Retirement Plan (the Executive SERP")
- **Post-Retirement Benefits Other Than Pensions for employees of FortisBC Inc. (the "Electric PRB Plan")**
- **Post-Retirement Benefits Other Than Pensions under FortisBC Energy Inc.:**
  - Programs covering non-union employees of FortisBC Energy Inc. ("FortisBC Non-Union PRBs")
  - Programs covering union employees of FortisBC Energy Inc. ("FortisBC Union PRBs")
  - Programs covering employees of FortisBC Energy (Vancouver Island) Inc. ("VI PRBs")

Our calculations are based on the provisions of each plan as at December 31, 2021. A summary of each plan provisions can be found in our reports titled, *FortisBC Energy Inc. Financial Information for Employee Future Benefit Programs as at December 31, 2021 in Accordance with ASC 715*, and *FortisBC Inc. Financial Information for Employee Future Benefit Programs as at December 31, 2021 in Accordance with ASC 715* (collectively, the “Accounting Reports”), dated January 21, 2022.

Accounting Policies

Please refer to Section 4 of the Accounting Reports for details.

Data, Assumptions, Methods and Plan Provisions

Except as noted below, the results presented are based on the data, assumptions, methods, plan provisions and other information, outlined in our Accounting Reports as at December 31, 2021. Therefore, such information, and the reliance and limitations of the valuation report and their use, should be considered part of this letter.

Value of Assets

The fair value of plan assets and information with respect to cash flows during the fiscal year were provided by RBC Investor & Treasury Services. The fair value of assets for each plan has been relied upon by WTW following tests of reasonableness with respect to contributions, benefit payments and investment income. WTW does not take responsibility for information provided by RBC Investor & Treasury Services.

Extrapolations

The projected benefit obligations and current service costs were first determined as at the date of compilation of the membership data, as disclosed in our Accounting Reports. The projected benefit obligations were then extrapolated to the applicable measurement date based on the actuarial assumptions, including actual benefit payments, assumed current service costs and the assumption that there have been no experience gains or losses between the date of compilation of the membership data and the measurement date. No formal materiality guidelines were employed in conducting the valuations or the extrapolations.

The market value of assets as at December 31, 2022 has been extrapolated from the market value of assets as at March 31, 2022, as reported by RBC Investor & Treasury Services.

Please note that we have not reflected the results of the December 31, 2021 actuarial funding valuations of the FEI Plan or Union Plan, since those results are not final at this stage. However, we expect the valuations to reveal a lower employee contribution rate than is currently in place. Since the total accounting service cost for 2023 is ‘fixed’, the lower employee contributions would result in an increase to the employer service cost, thus increasing the 2023 net benefit cost.

Appendix B: Projection Assumptions

For purposes of determining the estimated 2023 net benefit costs, certain assumptions have been used to project the funded position of each plan from March 31, 2022 to December 31, 2022. The market values of assets as at March 31, 2022 for each plan have been projected using index returns for each asset class to the end of April 30, 2022 and the applicable expected return on asset assumption between April 30, 2022 and December 31, 2022. The pension obligations and estimated 2023 net benefit costs were determined using a discount rate of 4.50%. The discount rate of 4.50% was determined using the April 30, 2022 market conditions.

Appendix C: Estimated 2023 Net Benefit Cost Details (in $000s)

FortisBC Energy Inc. - Registered Pension Plans

	M&E Plan				VI Plan	Energy Plan								Union Plan	Total by Entity				Total
	FEI Reg OP	*FHI Holdings Inc.*	*FHI Non-Reg*	*Total*	*FEI Reg OP*	*FEI Reg OP*	*FHI Holdings Inc.*	*FHI Non-Reg*	*FEI VI*	*FEI MoveUp*	*FMI*	*FAES*	*Total*	*FEI Reg OP*	FEI	FHI	FMI	FAES	
Estimated 2023 Net Benefit Cost																			
Employer current service cost	$ -	$ -	$ -	$ -	$ 792	$ 8,158	$ 637	$ -	$ 399	$ 793	$ 452	$ 117	$ 10,556	$ 8,891	$ 19,033	$ 637	$ 452	$ 117	$ 20,239
Interest cost	1,973	94	-	2,067	2,171	8,097	598	-	362	452	180	98	9,787	24,721	37,776	692	180	98	38,746
Expected return on assets	(1,237)	(56)	-	(1,293)	(2,073)	(11,384)	(832)	-	(500)	(534)	(171)	(133)	(13,554)	(30,842)	(46,570)	(888)	(171)	(133)	(47,762)
Amortization:																			
- Net actuarial (gain) loss	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- Prior service cost (credit)	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,282)	(1,282)	-	-	-	(1,282)
- Transition (asset) liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	$ 736	$ 38	$ -	$ 774	$ 890	$ 4,871	$ 403	$ -	$ 261	$ 711	$ 461	$ 82	$ 6,789	$ 1,488	$ 8,957	$ 441	$ 461	$ 82	$ 9,941

FortisBC Energy Inc. – Supplemental Pension Plans

	Supplemental M&E Plan				Supplemental VI Plan	Supplemental Energy Plan						Total by entity				Total	Executive SERP	Grand Total
	FEI Reg OP	*FHI Holdings Inc.*	*FHI Non-Reg*	*Total*	*FEI Reg OP*	*FEI Reg OP*	*FHI Holdings Inc.*	*FHI Non-Reg*	*FMI*	*FAES*	*Total*	*FEI*	*FHI*	*FMI*	*FAES*			
Estimated 2023 Net Benefit Cost																		
Employer current service cost	$ -	$ -	$ -	$ -	$ -	$ 208	$ 58	$ -	$ 49	$ -	$ 315	$ 208	$ 58	$ 49	$ -	$ 315	$ 382	$ 697
Interest cost	288	500	307	1,095	30	152	52	52	12	-	268	470	911	12	-	1,393	155	1,548
Expected return on assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortization:																		
- Net actuarial (gain) loss	3	100	3	106	-	25	9	37	-	(1)	70	28	149	-	(1)	176	-	176
- Prior service cost (credit)	-	-	-	-	-	-	-	-	24	-	24	-	-	24	-	24	-	24
- Transition (asset) liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	$ 291	$ 600	$ 310	$ 1,201	$ 30	$ 385	$ 119	$ 89	$ 85	$ (1)	$ 677	$ 706	$ 1,118	$ 85	$ (1)	$ 1,908	$ 537	$ 2,445

FortisBC Energy Inc. – Post-Retirement Benefits Plans

	FortisBC Union PRBs			FortisBC Non-Union PRBs						VI PRBs	Total by Entity				Total
	FEI IBEW	*FEI MoveUp*	*Total*	*FEI Reg OP*	*FHI Holdings*	*FHI Non-Reg*	*FMI*	*FAES*	*Total*	*FEI Reg OP*	FEI	FHI	FMI	FAES	
Estimated 2023 Net Benefit Cost															
Employer current service cost	$ 721	$ 887	$ 1,608	$ 1,259	$ 62	$ -	$ 80	$ 19	$ 1,420	$ 84	$ 2,951	$ 62	$ 80	$ 19	$ 3,112
Interest cost	1,336	1,277	2,613	1,389	86	-	26	13	1,514	342	4,344	86	26	13	4,469
Expected return on assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortization:															
- Net actuarial (gain) loss	(814)	(625)	(1,439)	(376)	(35)	(19)	(21)	-	(451)	(460)	(2,275)	(54)	(21)	-	(2,350)
- Prior service cost (credit)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- Transition (asset) liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	$ 1,243	$ 1,539	$ 2,782	$ 2,272	$ 113	$ (19)	$ 85	$ 32	$ 2,483	$ (34)	$ 5,020	$ 94	85	$ 32	$ 5,231

FortisBC Inc.

	FRIP	IBEW Plan	MoveUp Plan	Supp DB Plan	Supp DC Plan	Total Pensions	PRB Plan
Estimated 2023 Net Benefit Cost							
Employer current service cost	$ 221	$ 975	$ 1,532	$ 0	$ 67	$ 2,795	$ 835
Interest cost	1,626	6,475	2,696	25	67	10,889	1,012
Expected return on assets	(2,095)	(7,979)	(3,669)	0	0	(13,743)	0
Amortization:							
- Net actuarial (gain) loss	215	0	0	21	0	236	(892)
- Prior service cost (credit)	0	(832)	(56)	0	0	(888)	0
Total	$ (33)	$ (1,361)	$ 503	$ 46	$ 134	$ (711)	$ 955

Appendix D: Estimated Balance Sheet as at December 31, 2022 (in $000s)

FortisBC Energy Inc. - Registered Pension Plans

	M&E Plan				VI Plan	Energy Plan								Union Plan	Total by Entity				Total
	FEI Reg OP	*FHI Holdings Inc.*	*FHI Non-Reg*	*Total*	*FEI Reg OP*	*FEI Reg OP*	*FHI Holdings Inc.*	*FHI Non-Reg*	*FEI VI*	*FEI MoveUp*	*FMI*	*FAES*	*Total*	*FEI Reg OP*	FEI	FHI	FMI	FAES	
Statement of Estimated Balance Sheet Position as at December 31, 2022																			
Fair value of assets	$ 46,199	$ 2,195	$ -	$ 48,394	$ 49,332	$ 175,152	$ 12,776	$ -	$ 7,661	$ 8,003	$ 2,450	$ 2,025	$ 208,067	$ 482,379	$ 768,726	$ 14,971	$ 2,450	$ 2,025	$ 788,172
Projected benefit obligation	45,826	2,175	-	48,001	48,826	174,337	12,838	-	7,758	9,409	3,604	2,091	210,037	551,758	837,914	15,013	3,604	2,091	858,622
Funded status	$ 373	$ 20	$ -	$ 393	$ 506	$ 815	$ (62)	$ -	$ (97)	$ (1,406)	$ (1,154)	$ (66)	$ (1,970)	$ (69,379)	$ (69,188)	$ (42)	$ (1,154)	$ (66)	$ (70,450)
Unrecognized net actuarial (gain) loss	12,676	513	-	13,189	2,865	(17,411)	(1,593)	-	(899)	(289)	(107)	(163)	(20,462)	71,683	68,625	(1,080)	(107)	(163)	67,275
Unrecognized past service cost (credit)	-	-	-	-	-	-	-	-	-	-	-	-	-	(4,118)	(4,118)	-	-	-	(4,118)
Unrecognized transition (asset) liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-funded (accrued) benefit cost	$ 13,049	$ 533	$ -	$ 13,582	$ 3,371	$ (16,596)	$ (1,655)	$ -	$ (996)	$ (1,695)	$ (1,261)	$ (229)	$ (22,432)	$ (1,814)	$ (4,681)	$ (1,122)	$ (1,261)	$ (229)	$ (7,293)

FortisBC Energy Inc. – Supplemental Pension Plans

	Supplemental M&E Plan				Supplemental VI Plan	Supplemental Energy Plan						Total by Entity				Total	Executive SERP	Grand Total
	FEI Reg OP	*FHI Holdings Inc.*	*FHI Non-Reg*	*Total*	*FEI Reg OP*	*FEI Reg OP*	*FHI Holdings Inc.*	*FHI Non-Reg*	*FMI*	*FAES*	*Total*	*FEI*	*FHI*	*FMI*	*FAES*			
Statement of Estimated Balance Sheet Position as at December 31, 2022																		
Fair value of assets	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Projected benefit obligation	6,572	11,327	7,096	24,995	690	3,388	1,135	1,164	255	-	5,942	10,650	20,722	255	-	31,627	3,622	35,249
Funded status	$ (6,572)	$ (11,327)	$ (7,096)	$ (24,995)	$ (690)	$ (3,388)	$ (1,135)	$ (1,164)	$ (255)	$ -	$ (5,942)	$ (10,650)	$ (20,722)	$ (255)	$ -	$ (31,627)	$ (3,622)	$ (35,249)
Unrecognized net actuarial (gain) loss	696	2,568	759	4,023	46	615	218	277	(95)	(12)	1,003	1,357	3,822	(95)	(12)	5,072	38	5,110
Unrecognized past service cost (credit)	-	-	-	-	-	-	-	-	217	-	217	-	-	217	-	217	-	217
Unrecognized transition (asset) liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-funded (accrued) benefit cost	$ (5,876)	$ (8,759)	$ (6,337)	$ (20,972)	$ (644)	$ (2,773)	$ (917)	$ (887)	$ (133)	$ (12)	$ (4,722)	$ (9,293)	$ (16,900)	$ (133)	$ (12)	$ (26,338)	$ (3,584)	$ (29,922)

Elliott He
June 3, 2022

FortisBC Energy Inc. – Post-Retirement Benefits Plans

	FortisBC Union PRBs			FortisBC Non-Union PRBs						VI PRBs	Total by Entity				Total
	FEI IBEW	*FEI MoveUp*	*Total*	*FEI Reg OP*	*FHI Holdings*	*FHI Non-Reg*	*FMI*	*FAES*	*Total*	*FEI Reg OP*	*FEI*	*FHI*	*FMI*	*FAES*	
Statement of Estimated Balance Sheet Position as at December 31, 2022															
Fair value of assets	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Projected benefit obligation	29,907	28,328	58,235	30,701	1,904	-	538	279	33,422	7,699	96,635	1,904	538	279	99,356
Funded status	$ (29,907)	$ (28,328)	$ (58,235)	$ (30,701)	$ (1,904)	$ -	$ (538)	$ (279)	$ (33,422)	$ (7,699)	$ (96,635)	$ (1,904)	$ (538)	$ (279)	$ (99,356)
Unrecognized net actuarial (gain) loss	(15,124)	(11,214)	(26,338)	(8,257)	(668)	(59)	(374)	(28)	(9,386)	(3,988)	(38,583)	(727)	(374)	(28)	(39,712)
Unrecognized past service cost (credit)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unrecognized transition (asset) liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-funded (accrued) benefit cost	$ (45,031)	$ (39,542)	$ (84,573)	$ (38,958)	$ (2,572)	$ (59)	$ (912)	$ (307)	$ (42,808)	$ (11,687)	$ (135,218)	$ (2,631)	$ (912)	$ (307)	$ (139,068)

FortisBC Inc.

	FRIP	IBEW Plan	MoveUp Plan	Supp DB Plan	Supp DC Plan	Total Pensions	PRB Plan
Statement of Balance Sheet Position as at December 31, 2022							
Fair value of assets	$ 50,217	$ 125,183	$ 62,449	$ 0	$ 0	$ 237,849	$ 0
Projected benefit obligation	37,373	144,765	59,705	602	1,686	244,131	22,010
Funded status	$ 14,924	$ (22,401)	$ (13,685)	$ (713)	$ (1,764)	$ (23,639)	$ (27,815)
Unrecognized net actuarial (gains) losses	7,663	24,937	(5,430)	229	0	27,399	(13,355)
Unrecognized prior service costs (credits)	0	(1,763)	(56)	0	0	(1,819)	0
Pre-funded (accrued) benefit cost	$ 22,587	$ 773	$ (19,171)	$ (484)	$ (1,764)	$ 1,941	$ (41,170)