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October 20, 2022

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, B.C.
V6Z 2N3

Attention: Ms. Sara Hardgrave, Acting Commission Secretary

Dear Ms. Hardgrave:

Re: British Columbia Utilities Commission (BCUC) – 2022 Generic Cost of Capital Proceeding – Project No. 1599176

FortisBC Energy Inc. and FortisBC Inc. (collectively FortisBC) Response to BCUC Information Request (IR) No. 1 on FortisBC Rebuttal Evidence

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On January 18, 2021, BCUC initiated the proceeding referenced above. In accordance with the regulatory timetable established in BCUC Order G-217-22A for the review of FortisBC's Evidence, FortisBC respectfully submits the attached response to BCUC Rebuttal IR No. 1.

For convenience and efficiency, FortisBC has occasionally provided an internet address for referenced reports instead of attaching lengthy documents to its IR responses. FortisBC 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,

on behalf of FORTISBC

Original signed:

Diane Roy

Attachments

cc (email only): Registered Parties

A. QUESTIONS ON FORTISBC REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.

1.0 Reference: REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.
Exhibit B-19, BCOAPO [1] IR 85.1, 85.2, 85.3; Exhibit B1-21, Part 2, p. 4
Differences in Financial Leverage

On page 4 of Part 2 to Exhibit B1-21, Mr. Coyne states:

> Dr. Lesser has indicated that the Hamada equation can be used [to take into account differences in financial leverage between the proxy group companies and FEI and FBC by adjusting the authorized return on equity (ROE)]; however, I have not used the Hamada formula to adjust my [Capital Asset Pricing Model (CAPM)] analysis, so my estimated ROEs for FEI and FBC are lower than they would be if I had used this adjustment.

In response to BCOAPO IR 85.1, 85.2 and 85.3, Mr. Coyne produces the ROE after Hamada adjustment at the proposed 45 percent equity ratio for FEI, current 38.5 percent equity ratio for FEI, and the current and proposed 40 percent equity ratio for FBC, respectively.

1.1 Please confirm that the analyses produced in response to BCOAPO IRs 85.1, 85.2, and 85.3 are in accordance with the methodology to account for differences in financial leverage between the proxy group companies, FEI and FBC as discussed by Dr. Lesser. If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please replicate the analyses provided in response to BCOAPO IRs 85.1, 85.2, and 85.3 in a separate Excel spreadsheet.

Response:

Concentric provides the following response:

Confirmed. The Hamada adjustment shown in the analyses in response to BCOAPO IR2 85.1, 85.2, and 85.3 is consistent with the methodology discussed in Dr. Lesser's August 2022 report. See equations 4-7 and 4-8 on page 44 of Dr. Lesser's report. Please refer to Attachments 1.1a, 1.1b, and 1.1c for replications of BCOAPO IR2 85.1, 85.2, and 85.3, respectively, updated as of September 2022.

[1] British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Tenants Resource and Advisory Centre, and Together Against Poverty Society.

1.1.1 If confirmed, please provide what Mr. Coyne's recalculated ROE (average between CAPM and multi-stage Discounted Cash Flow (DCF)) would be for FBC and FEI, respectively, using the Hamada-adjusted ROE. Please show Mr. Coyne's recalculated ROE using comparable data in Exhibit B-8 and data as of September 2022, respectively, if the resulting ROE is any different.

Response:

Concentric provides the following response:

Please refer to Attachment 1.1.1a for the results of Mr. Coyne's original ROE analysis for FEI using the Hamada-adjusted betas. The results are summarized in the table below.

Summary of Results – Natural Gas – at 45% Equity – 12/31/21 data[2]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.51%	10.77%	10.83%	10.7%
Multi-Stage DCF	10.28%	9.53%	10.05%	10.0%
Avg CAPM and Multi-Stage DCF	10.4%	10.2%	10.4%	10.4%

Summary of Results – Natural Gas – at 38.5% Equity – 12/31/21 data[3]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	11.51%	11.91%	12.00%	11.8%
Multi-Stage DCF	10.28%	9.53%	10.05%	10.0%
Avg CAPM and Multi-Stage DCF	10.9%	10.7%	11.0%	10.9%

Please refer to Attachment 1.1.1b for the results of Mr. Coyne's original ROE analysis for FBC using the Hamada-adjusted betas. The results are summarized in the table below.

[2] Includes 50 basis points for flotation costs and financial flexibility.
[3] Ibid.

Summary of Results – Electric – at 40% Equity – 12/31/21 data[4]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric	Average
CAPM	11.25%	11.76%	11.36%	11.5%
Multi-Stage DCF	10.28%	8.92%	9.14%	9.4%
Avg CAPM and Multi-Stage DCF	10.8%	10.3%	10.3%	10.5%

Please refer to Attachments 1.1.1c and 1.1.1d for the results of Mr. Coyne's updated ROE analysis for FEI and FBC using the Hamada-adjusted betas.

Summary of Results – Natural Gas – at 45% Equity – 9/30/22 data[5]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	9.92%	9.62%	9.87%	9.8%
Multi-Stage DCF	10.24%	8.81%	9.57%	9.5%
Avg CAPM and Multi-Stage DCF	10.1%	9.2%	9.7%	9.7%

Summary of Results – Natural Gas – at 38.5% Equity – 9/30/22 data[6]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.71%	10.45%	10.74%	10.6%
Multi-Stage DCF	10.24%	8.81%	9.57%	9.5%
Avg CAPM and Multi-Stage DCF	10.5%	9.6%	10.2%	10.1%

[4] Ibid.
[5] Includes 50 basis points for flotation costs and financial flexibility.
[6] Ibid.

Summary of Results – Electric – at 40% Equity – 9/30/22 data[7]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric	Average
CAPM	10.54%	10.97%	10.64%	10.7%
Multi-Stage DCF	10.24%	8.64%	8.93%	9.3%
Avg CAPM and Multi-Stage DCF	10.4%	9.8%	9.8%	10.0%

1.1.2 If not confirmed, please (i) explain any discrepancies between the methodology used to produce the analyses referenced above versus Dr. Lesser's recommended methodology and (ii) calculate what the ROE would be under the CAPM for FEI and FBC, respectively, after accounting for difference in financial leverage using the Hamada equation as discussed by Dr. Lesser, all else equal. Please show the calculation and highlight any difference in the assumptions and resulting ROE before and after the adjustment in an Excel spreadsheet.

1.1.2.1 Based on the leverage adjusted ROE calculated above, please provide what Mr. Coyne's recalculated ROE (average between CAPM and DCF) would be using comparable data in Exhibit B-8 and data as of September 2022, for FBC and FEI, respectively.

Response:

Not applicable.

[7] Ibid.

2.0 Reference: REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.

Exhibit B1-21, Part 2, pp. 6–8, 10

ROE Using Dr. Lesser's Recommended Proxy Groups

On page 7 of Part 2 to Exhibit B1-21, Mr. Coyne states:

> Using Dr. Lesser's proxy groups, the average of the CAPM and Multi-Stage DCF results for the U.S. Gas proxy group increase from 10.1 percent to 10.2 percent, while the average CAPM and Multi-Stage DCF results for the U.S. Electric proxy group remains at 10.0 percent.

On page 8, Mr. Coyne further provides a summary of ROE results using Dr. Lesser's proxy groups for gas and electric utilities, respectively, in Figure 1 and Figure 2.

On page 10, Mr. Coyne states:

> If I were to follow Dr. Lesser's suggested approach and rely on the North American proxy groups, my estimated ROEs for FEI and FBC would increase by 50 basis points (from 10.1 to 10.6% for FEI) and decrease by 10 basis point (from 10.0 to 9.9% for FBC) based on my original analysis.

2.1 Please present the supporting calculations to show the difference in ROE results using Dr. Lesser's US and North American proxy groups for FBC and FEI as referenced in the preamble above in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 2.1a for the results of Mr. Coyne's original ROE analysis using Dr. Lesser's U.S. and North American Gas proxy groups and Attachment 2.1b for the results of Mr. Coyne's original ROE analysis using Dr. Lesser's U.S. and North American Electric proxy groups.

Figure 1 of Mr. Coyne's rebuttal testimony shows that the average results of the CAPM and Multi-Stage DCF models for the North American proxy group are 10.5%, not 10.6% as stated on page 10 of Mr. Coyne's rebuttal testimony, meaning that the estimated ROE using Dr. Lesser's North American proxy group is 40 basis points higher.

2.1.1 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present the requested ROE calculations above using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachments 2.1.1a and 2.1.1b for the results of Mr. Coyne's updated ROE analysis for FEI and FBC using Dr. Lesser's gas and electric proxy groups.

Revised Figure 1: Summary of Results – Natural Gas[8] - as of 9/30/22

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.08%	9.92%	10.19%	10.1%
Constant Growth DCF	11.74%	10.39%	10.95%	11.0%
Multi-Stage DCF	10.24%	8.82%	9.41%	9.5%
Risk Premium		10.12%	10.12%	10.1%
Average	10.7%	9.9%	10.3%	10.3%
Avg CAPM and Multi-Stage DCF	10.2%	9.4%	9.8%	9.8%

Revised Figure 2: Summary of Results - Electric[9] - as of 9/30/22

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities- Electric	Average
CAPM	10.08%	10.47%	10.23%	10.3%
Constant Growth DCF	11.74%	9.47%	9.75%	10.3%
Multi-Stage DCF	10.24%	8.54%	8.84%	9.2%
Risk Premium		10.17%	10.17%	10.2%
Average	10.7%	9.9%	9.9%	10.1%
Avg CAPM and Multi-Stage DCF	10.2%	9.5%	9.5%	9.7%

[8] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. Gas proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

[9] Ibid.

On pages 6 to 7 of Part 2 to Exhibit B-21, Mr. Coyne explains that he disagrees with a number of proxy company selections by Dr. Lesser, some of which are due to engagement in merger and acquisition (M&A) activities (e.g. South Jersey Industries, PNM Resources and PPL Corporation).

2.2 Please recalculate the estimated ROEs for FEI and FBC, respectively, using Dr. Lesser's US and North American proxy groups, excluding only the companies that Mr. Coyne has identified as engaging in M&A activities. Please specify the list of companies that are included in each proxy group, compare the list of companies against those included in Mr. Coyne's original proxy groups, and present the requested ROE calculations in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 2.2a for the results of Mr. Coyne's original ROE analysis using Dr. Lesser's U.S. and North American Gas proxy groups and Attachment 2.2b for the results of Mr. Coyne's original ROE analysis using Dr. Lesser's U.S. and North American Electric proxy groups excluding those companies engaged in M&A activity. The results are summarized in the tables below. The companies included in Mr. Coyne's electric proxy groups are shown in Figures 18, 21, and 22 of his January 2022 report, and the companies in Mr. Coyne's gas proxy groups are shown in Figures 18, 19 and 20 of that same report. Mr. Coyne did not include certain of the companies recommended by Dr. Lesser in his U.S. Gas and U.S. Electric proxy groups for the reasons explained in Mr. Coyne's rebuttal testimony at pages 5-7.

Revised Figure 1: Summary of Results – Natural Gas[10]

(Dr. Lesser's Proxy Group – ex. South Jersey Industries, Inc.)

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.68%	10.57%	10.94%	10.7%
Constant Growth DCF	11.61%	10.45%	10.95%	11.0%
Multi-Stage DCF	10.28%	9.34%	9.87%	9.8%
Risk Premium		9.97%	9.97%	10.0%
Average	10.9%	10.1%	10.4%	10.4%
Avg CAPM and Multi-Stage DCF	10.5%	10.0%	10.4%	10.3%

[10] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

Revised Figure 2: Summary of Results - Electric[11]

(Dr. Lesser's Proxy Group – ex. PNM Resources Inc. and PPL Corporation)

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.68%	11.10%	10.78%	10.9%
Constant Growth DCF	11.61%	9.03%	9.48%	10.0%
Multi-Stage DCF	10.28%	8.86%	9.10%	9.4%
Risk Premium		10.01%	10.01%	10.0%
Average	10.9%	9.8%	9.8%	10.1%
Avg CAPM and Multi-Stage DCF	10.5%	10.0%	9.9%	10.2%

2.2.1 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present the requested ROE calculations above using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 2.2.1a for the results of Mr. Coyne's updated ROE analysis using Dr. Lesser's U.S. and North American Gas proxy groups and Attachment 2.2.1b for the results of Mr. Coyne's updated ROE analysis using Dr. Lesser's U.S. and North American Electric proxy groups excluding those companies engaged in M&A activity.

Revised Figure 1: Summary of Results – Natural Gas[12] - as of 9/30/22

(Dr. Lesser's Proxy Group – ex. South Jersey Inc.)

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities -	Average

[11] Ibid.

[12] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

			Gas	
CAPM	10.08%	9.83%	10.17%	10.0%
Constant Growth DCF	11.74%	9.89%	10.72%	10.8%
Multi-Stage DCF	10.24%	8.62%	9.36%	9.4%
Risk Premium		10.12%	10.12%	10.1%
Average	10.7%	9.7%	10.27%	10.2%
Avg CAPM and Multi-Stage DCF	10.2%	9.2%	9.8%	9.7%

Revised Figure 2: Summary of Results - Electric[13] - as of 9/30/22

(Dr. Lesser's Proxy Group – ex. PNM Resources Inc. and PPL Corporation)

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.08%	10.31%	10.08%	10.1%
Constant Growth DCF	11.74%	9.18%	9.58%	10.2%
Multi-Stage DCF	10.24%	8.59%	8.90%	9.3%
Risk Premium		10.17%	10.17%	10.2%
Average	10.7%	9.7%	9.8%	10.0%
Avg CAPM and Multi-Stage DCF	10.2%	9.5%	9.5%	9.7%

2.3 Please recalculate the estimated ROEs for FEI and FBC using Dr. Lesser's US and North American proxy groups, adjusting by all companies that Mr. Coyne disagrees with in Dr. Lesser's recommendation (inclusion and exclusions), respectively. Please specify the list of companies that is included in each proxy group, compare the list of companies in each proxy group against Mr. Coyne's original proxy group and Dr. Lesser's recommended proxy group, respectively, and present the requested calculations in an Excel spreadsheet.

Response:

Concentric provides the following response:

[13] Ibid.

Please refer to Attachment 2.3 for the results of Mr. Coyne's original ROE analysis using Dr. Lesser's U.S. and North American Electric proxy groups, excluding all companies that Mr. Coyne disagrees with. The results are summarized in the table below. The companies included in Mr. Coyne's electric proxy groups are shown in Figures 18, 21, and 22 of his January 2022 report, and the companies in Mr. Coyne's gas proxy groups are shown in Figures 18, 19 and 20 of that same report. Mr. Coyne did not include certain of the companies recommended by Dr. Lesser in his U.S. Gas and U.S. Electric proxy groups for the reasons explained in Mr. Coyne's rebuttal testimony at pages 5-7.

Revised Figure 1: Summary of Results - Electric[14]

(Dr. Lesser's Proxy Group – ex. Consolidated Edison Inc., CenterPoint Energy Inc., PNM Resources Inc., PPL Corporation)

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.68%	11.03%	10.69%	10.8%
Constant Growth DCF	11.61%	9.62%	9.95%	10.4%
Multi-Stage DCF	10.28%	9.07%	9.27%	9.5%
Risk Premium		10.01%	10.01%	10.0%
Average	10.9%	9.9%	10.0%	10.2%
Avg CAPM and Multi-Stage DCF	10.5%	10.1%	10.0%	10.2%

The analysis of Dr. Lesser's U.S. and North American Gas proxy groups is the same as that presented in the response to BCUC Rebuttal IR1 2.2.

2.3.1 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present the requested ROE calculations above using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

[14] Ibid.

Please refer to Attachment 2.3.1 for the results of Mr. Coyne's updated ROE analysis using Dr. Lesser's U.S. and North American Electric proxy groups, excluding all companies that Mr. Coyne disagrees with.

Revised Figure 2: Summary of Results - Electric[15] - as of 9/30/22

(Dr. Lesser's Proxy Group – ex. Consolidated Edison Inc., CenterPoint Energy Inc., PNM Resources Inc., PPL Corporation)

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.08%	10.23%	9.99%	10.1%
Constant Growth DCF	11.74%	9.51%	9.86%	10.4%
Multi-Stage DCF	10.24%	8.81%	9.10%	9.4%
Risk Premium		10.17%	10.17%	10.2%
Average	10.7%	9.8%	9.8%	10.1%
Avg CAPM and Multi-Stage DCF	10.2%	9.5%	9.5%	9.7%

The analysis of Dr. Lesser's U.S. and North American Gas proxy groups is the same as that presented in the response to BCUC Rebuttal IR1 2.2.1.

[15] Ibid.

3.0 Reference: REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.

Exhibit B1-21, Part 2, pp. 11–12

Source of Earnings Per Share (EPS) Growth Rates in the DCF Model

On pages 11 to 12 of Part 2 to Exhibit B1-21, Mr. Coyne states the following regarding Dr. Lesser's preference for a single source of EPS growth rates in the DCF model:

> … the EPS growth rates reported on Yahoo! Finance, which is the source Dr. Lesser prefers, are not always updated on a regular basis and may become stale at times. In addition, there is less analyst coverage for Canadian utility companies, and Yahoo! Finance does not provide EPS growth rates for every Canadian utility company, so it is necessary to also consider other sources such as Zacks Investment Research, Value Line, and SNL Financial to develop a more robust DCF analysis for a Canadian proxy group. For these reasons, I continue to believe it is reasonable to average EPS growth rates from multiple sources in the DCF model.

3.1 Please present the EPS growth reported by Yahoo! Finance and by each of the EPS growth rate sources (e.g. Zacks Investment Research, Value Line, SNL Financial, and Thomas First Call) over the time horizon that Mr. Coyne used in the DCF model, as well as report the average EPS growth rates used by Mr. Coyne in his original DCF model as presented in Exhibit B-8.

Response:

Concentric provides the following response:

The requested EPS growth rates are shown in columns (5) through (8) of Exhibit JMC-FEI-4 and Exhibit JMC-FBC-4 of Mr. Coyne's original report, and the average EPS growth rate is shown in column (9). The growth rate reported by Yahoo! Finance is based on the consensus analysts' EPS growth rate compiled by Thomson First Call.

3.1.1 To the extent possible, please calculate and compare the ROE derived from the DCF model using EPS growth rates reported by Yahoo! Finance only as preferred by Dr. Lesser versus using the average EPS growth rates as referenced by Mr. Coyne for FBC and FEI, respectively. Please show the calculation and highlight any difference in the inputs and resulting ROE in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 3.1.1a for Mr. Coyne's original DCF analysis for the gas proxy groups and Attachment 3.1.1b for the original DCF analysis for the electric proxy groups. The results are summarized in the tables below.

Summary of Results – Natural Gas – 12/31/21 data[16]

DCF Model	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas
Constant Growth	11.81%	9.98%	10.69%
Multi-Stage	10.48%	9.44%	10.08%

Summary of Results – Electric – 12/31/21 data[17]

DCF Model	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric
Constant Growth	11.81%	9.48%	9.84%
Multi-Stage	10.48%	8.91%	9.17%

3.1.2 Using the ROE calculated using EPS growth rates reported by Yahoo! Finance above, please present what the recalculated ROE would be (average between CAPM and multi-stage DCF) for FBC and FEI, respectively.

Response:

Concentric provides the following response:

The tables below summarize the ROE analysis for FEI and FBC if Mr. Coyne had only used projected EPS growth rates from Yahoo! Finance in his DCF analysis.

[16] Includes 50 basis points for flotation costs and financial flexibility.
[17] Ibid.

Revised Figure 1: Summary of Results – Natural Gas[18]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.68%	10.67%	11.05%	10.8%
Multi-Stage DCF	10.48%	9.44%	10.08%	10.0%
Avg CAPM and Multi-Stage DCF	10.6%	10.1%	10.6%	10.4%

Revised Figure 2: Summary of Results - Electric[19]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities- Electric	Average
CAPM	10.68%	11.12%	10.80%	10.9%
Multi-Stage DCF	10.48%	8.91%	9.17%	9.5%
Avg CAPM and Multi-Stage DCF	10.6%	10.0%	10.0%	10.2%

3.2 Please calculate the ROE under the multi-stage DCF model using all of Dr. Lesser's preferred input assumptions and methodology for FBC and FEI, respectively, which are (i) to use Dr. Lesser's North American proxy group, excluding companies with recent M&A activities and (ii) to use a single-source growth rate as reported by Yahoo! Finance. Please specify all assumptions and show the calculations in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 3.2a for the requested analysis for FEI, and Attachment 3.2b for the requested analysis for FBC. The tables below summarize the results of the Multi-stage DCF model using Dr. Lesser's preferred assumptions and methodology and market data as of December 31, 2021.

[18] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

[19] Ibid.

Summary of Multi-Stage DCF Results – Natural Gas – 12/31/21 data[20]

DCF Model	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas
Multi-Stage	10.48%	9.27%	9.89%

Summary of Multi-Stage DCF Results – Electric – 12/31/21 data[21]

DCF Model	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric
Multi-Stage	10.48%	8.82%	9.08%

3.3 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present all of the requested data and calculations in this IR series using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please see the results of Mr. Coyne's updated DCF analysis for the gas proxy groups and the updated DCF analysis for the electric proxy groups summarized in the tables below.

Summary of Results – Natural Gas – 9/30/22 data[22]

DCF Model	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas
Constant Growth	11.74%	9.69%	10.72%
Multi-Stage	10.24%	8.81%	9.57%

Summary of Results – Electric – 9/30/22 data[23]

DCF Model	Canadian Regulated	US Electric Utilities	North American

[20] Includes 50 basis points for flotation costs and financial flexibility.
[21] Ibid.
[22] Ibid.
[23] Ibid.

	Utilities		Utilities - Electric
Constant Growth	11.74%	9.66%	9.92%
Multi-Stage	10.24%	8.64%	8.93%

The tables below summarize the ROE analysis for FEI and FBC if Mr. Coyne had only used projected EPS growth rates from Yahoo! Finance in his updated DCF analysis. Please refer to Attachment 3.3a for the underlying analysis for FEI, and Attachment 3.3b for the underlying analysis for FBC.

Revised Figure 1: Summary of Results – Natural Gas[24] - as of 9/30/22

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.08%	9.87%	10.24%	10.1%
Multi-Stage DCF	10.45%	8.63%	9.39%	9.5%
Avg CAPM and Multi-Stage DCF	10.3%	9.3%	9.8%	9.8%

Revised Figure 2: Summary of Results - Electric[25] - as of 9/30/22

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities- Electric	Average
CAPM	10.08%	10.43%	10.17%	10.2%
Multi-Stage DCF	10.45%	8.50%	8.87%	9.5%
Avg CAPM and Multi-Stage DCF	10.3%	9.5%	9.52%	9.8%

Please refer to Attachment 3.3c for the requested analysis for FEI, and BCUC Rebuttal IR1 3.3, Attachment 3.3d for the requested analysis for FBC. The tables below summarize the results of the Multi-stage DCF model using Dr. Lesser's preferred assumptions and methodology and market data as of September 30, 2022.

[24] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

[25] Ibid.

Summary of Multi-Stage DCF Results – Natural Gas – 9/30/22 data[26]

DCF Model	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas
Multi-Stage	10.45%	8.51%	9.19%

Summary of Multi-Stage DCF Results – Electric – 9/30/22 data[27]

DCF Model	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric
Multi-Stage	10.45%	8.63%	8.98%

[26] Includes 50 basis points for flotation costs and financial flexibility.
[27] Ibid.

4.0 Reference: REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.

Exhibit A2-20, BCUC IR 10.4; Exhibit B1-21, Part 2, pp. 14–15

Risk Free Rate in CAPM

In response to BCUC IR 10.4, Dr. Lesser states "[f]or the risk-free rate, I recommend the current yields on the Canadian long bond or the 30-year US Treasury bond."

On pages 14 to 15 of Part 2 to Exhibit B1-21, Mr. Coyne states:

> In his response to BCUC IR2 10.4, Dr. Lesser indicates that he prefers to use current average yields on 30-year government bonds as the risk-free rate in the CAPM because forecast bond yields violate the Efficient Market Hypothesis ("EMH").
>
> […]
>
> In summary, use of an interest rate forecast from leading economists and financial institutions in Canada and the U.S. has proven to be correct so far in 2022, whereas reliance on historical average interest rates would have substantially understated the risk-free rate, and in turn the ROE estimates produced by the CAPM.

4.1 Please present the risk-free rate using the current average yields on the Canadian long bond for the Canadian market MRP and 30-year US Treasury bond for the US market MRP as preferred by Dr. Lesser and the interest rate forecast as preferred by Mr. Coyne, respectively, over the same time horizon as those used in Mr. Coyne's analysis as presented in Exhibit B-8.

Response:

Concentric provides the following response:

Please see the table below for the requested information as of December 31, 2021.

	Current Avg Yield	Forecast Yield
Long Canada Bond	1.82%	2.58%
U.S. 30-year Treasury	1.87%	2.91%

4.2 Using the risk-free rate based on the current average yields on 30-year government bonds as preferred by Dr. Lesser, please calculate what would be the ROE under CAPM and the recalculated ROE (average between CAPM and

multi-stage DCF), respectively, for FBC and FEI. Please specify all assumptions and show the calculations in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachments 4.2a and 4.2b for the requested calculations using 30-day average yields on government bonds as of December 31, 2021. The tables below summarize the CAPM and ROE results using a then current average risk-free rate.

CAPM Results – Gas - Using Current Average Risk Free Rate[28]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	10.32%	12.60%
U.S. Gas	10.01%	12.18%
North American Gas	10.54%	12.87%

CAPM Results – Electric - Using Current Average Risk Free Rate[29]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	10.32%	12.60%
U.S. Electric	10.49%	12.80%
North American Electric	10.23%	12.48%

Revised Figure 1: Summary of Results – Natural Gas[30]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.32%	10.01%	10.54%	10.3%
Multi-Stage DCF	10.28%	9.53%	10.05%	10.0%
Avg CAPM and Multi-Stage DCF	10.3%	9.8%	10.3%	10.2%

[28] Includes 50 basis points for flotation costs and financial flexibility.
[29] Ibid.
[30] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

Revised Figure 2: Summary of Results - Electric[31]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.32%	10.49%	10.23%	10.3%
Multi-Stage DCF	10.28%	8.82%	9.07%	9.4%
Avg CAPM and Multi-Stage DCF	10.3%	9.7%	9.7%	9.9%

4.2.1 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present the requested calculations above using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

The table below summarizes the current average and forecast government bond yields as of September 30, 2022. The forecast bond yields are taken from the Consensus Economics forecast published in October 2022.

	Current Avg Yield	Forecast Yield
Long Canada Bond	3.06%	3.16%
U.S. 30-year Treasury	3.47%	3.41%

Please refer to Attachments 4.2.1a and 4.2.1b for the requested calculations using 30-day average yields on government bonds as of September 30, 2022. The tables below summarize the CAPM and ROE results using a current average risk-free rate.

CAPM Results – Gas - Using Current Average Risk Free Rate – 9/30/22[32]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	10.10%	10.74%
U.S. Gas	10.22%	10.83%
North American Gas	10.49%	11.15%

[31] Ibid.
[32] Includes 50 basis points for flotation costs and financial flexibility.

CAPM Results – Electric - Using Current Average Risk Free Rate – 9/30/22[33]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	10.10%	10.74%
U.S. Electric	10.51%	11.14%
North American Electric	10.22%	10.85%

Revised Figure 1: Summary of Results – Natural Gas[34] **- as of 9/30/22**

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	10.10%	10.22%	10.49%	10.3%
Multi-Stage DCF	10.24%	8.81%	9.57%	9.5%
Avg CAPM and Multi-Stage DCF	10.2%	9.5%	10.0%	9.9%

Revised Figure 2: Summary of Results - Electric[35] **- as of 9/30/22**

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities-Electric	Average
CAPM	10.10%	10.51%	10.22%	10.3%
Multi-Stage DCF	10.24%	8.64%	8.93%	9.3%
Avg CAPM and Multi-Stage DCF	10.2%	9.6%	9.6%	9.8%

[33] Ibid.

[34] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

[35] Ibid.

5.0 Reference: REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.

Exhibit B1-21, Part 2, pp. 16–18

Deriving the Market Risk Premium (MRP) in the CAPM

On page 16 of Part 2 to Exhibit B1-21, Mr. Coyne states:

> While I agree that it is reasonable to derive an MRP based on forward-looking data, I do not agree with Dr. Lesser that the Multi-Stage DCF model should be used to develop this return estimate. As explained in my Report, I used the Constant Growth DCF model for this purpose, consistent with the approach taken by FERC.

5.1 Using the same data in Mr. Coyne's model as presented in Exhibit B-8-1, please calculate the MRP using the multi-stage DCF model and compare the difference in the MRP using the constant growth DCF model for FBC and FEI, respectively. Please specify all assumptions (such as the risk-free rate, dividend yield, time horizon of each stage in the multi-stage DCF model, and expected growth rate in each stage of the multi-stage DCF model) and show the calculation in an Excel spreadsheet.

Response:

Concentric provides the following response:

This calculation was provided in response to BCUC IR2 84.1.1. As shown therein, the market risk premium using the multi-stage DCF model is 5.44 percent for Canada and 4.73 percent for the U.S. By comparison, the forward-looking market risk premium using the Constant Growth DCF model is 9.10% for Canada and 12.08 percent for the U.S. Mr. Coyne explained his concerns with using this method in response to BCUC IR2 84.1.

Further, in his rebuttal testimony, Mr. Coyne noted on pages 17-18 that Dr. Lesser has previously calculated the market risk premium using projected data from Value Line and historical data from Ibbotson (now Kroll). Mr. Coyne has updated Figure 4 in his rebuttal testimony for market data as of the end of September 2022. The table below indicates that the market risk premium using this approach would be 9.99 percent for the U.S., which is substantially higher than the 4.73 percent market risk premium derived from the multi-stage DCF model. It is also higher than the 8.49 percent market risk premium I relied upon in my Direct and Rebuttal testimonies and the 7.3 percent in the September 2022 model updates.

Value Line Price Appreciation (1)	70%
4 Year Compound Price Appreciation	14.19%
Value Line Median dividend Yield (1)	2.20%
Total Market Return	16.39%
Blue Chip Forecast - six quarter average (2)	3.87%

Forward MRP	12.52%
Duff & Phelps Historical MRP (3)	7.46%
Average of Projected and Historical MRP	9.99%

Sources:
(1) Value Line Investment Survey, September 30, 2022.
(2) Blue Chip Financial Forecast, Volume 41, Issue No. 10, October 1, 2022, at 2.
(3) Duff & Phelps, Cost of Capital Navigator, data through 2021.

In addition to the concerns with using the multi-stage DCF model to derive a forward-looking market risk premium that Mr. Coyne discussed in his response to BCUC 84.1, there are several other reasons why the use of the multi-stage DCF model is not reasonable for this purpose. These include:

1) Large publicly owned companies are not limited to investing in either Canada or the U.S. They also have access to investments in countries that offer higher GDP growth potential such as China and India.
2) Larger publicly owned companies acquire smaller privately held companies to accelerate their growth.
3) Indexes such as the S&P 500 and S&P/TSX update the composition of the index on a regular basis to remove lower growth companies with smaller market capitalizations and replace them with faster growing companies with larger market capitalizations.

5.2 Using the MRP calculated using the multi-stage DCF model presented above, please calculate the resulting ROE under the CAPM using Mr. Coyne's original inputs, as well as what Mr. Coyne's recalculated ROE would be (average between CAPM and multi-stage DCF) for FBC and FEI, respectively. Please show the calculation and highlight any difference in the ROE analysis using multi-stage versus constant growth DCF in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 5.2a for the CAPM calculation using the multi-stage DCF MRP for FEI, and Attachment 5.2b for the CAPM calculation using the multi-stage DCF MRP for FBC. The tables below summarize the CAPM results and the ROE using a multi-stage DCF model to compute the forward-looking MRP.

CAPM Results – Gas - Using Multi-Stage DCF MRP[36]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	8.22%	7.63%
U.S. Gas	8.32%	7.76%
North American Gas	8.53%	7.93%

CAPM Results – Electric - Using Multi-Stage DCF MRP[37]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	8.22%	7.63%
U.S. Electric	8.62%	8.03%
North American Electric	8.38%	7.80%

Revised Figure 1: Summary of Results – Natural Gas[38]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	8.22%	8.32%	8.53%	8.4%
Multi-Stage DCF	10.28%	9.53%	10.05%	10.0%
Avg CAPM and Multi-Stage DCF	9.3%	8.9%	9.3%	9.2%

Revised Figure 2: Summary of Results - Electric[39]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities- Electric	Average
CAPM	8.22%	8.62%	8.38%	8.4%
Multi-Stage DCF	10.28%	8.82%	9.07%	9.4%
Avg CAPM and Multi-Stage DCF	9.3%	8.7%	8.7%	8.9%

[36] Includes 50 basis points for flotation costs and financial flexibility.
[37] Ibid.
[38] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.
[39] Ibid.

5.2.1 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present the requested calculations above using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 5.2.1a for the CAPM calculation using the updated multi-stage DCF MRP for FEI, and Attachment 5.2b for the updated CAPM calculation using the multi-stage DCF MRP for FBC. The tables below summarize the updated CAPM results and the ROE using a multi-stage DCF model to compute the forward-looking MRP.

CAPM Results – Gas - Using Multi-Stage DCF MRP – as of 9/30/22[40]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	8.77%	8.08%
U.S. Gas	8.65%	8.01%
North American Gas	8.93%	8.24%

CAPM Results – Electric - Using Multi-Stage DCF MRP – as of 9/30/22[41]

	Average MRP	Forward-looking MRP
Canadian Regulated Utilities	8.87%	8.17%
U.S. Electric	9.18%	8.47%
North American Electric	8.96%	8.27%

[40] Includes 50 basis points for flotation costs and financial flexibility.
[41] Ibid.

Revised Figure 1: Summary of Results – Natural Gas[42] - as of 9/30/22

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	8.77%	8.65%	8.93%	8.8%
Multi-Stage DCF	10.24%	8.81%	9.57%	9.5%
Avg CAPM and Multi-Stage DCF	9.5%	8.7%	9.3%	9.2%

Revised Figure 2: Summary of Results - Electric[43] - as of 9/30/22

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities- Electric	Average
CAPM	8.87%	9.18%	8.96%	9.0%
Multi-Stage DCF	10.24%	8.64%	8.93%	9.3%
Avg CAPM and Multi-Stage DCF	9.6%	8.9%	8.9%	9.1%

On pages 17 to 18 of Part 2 to Exhibit B1-21, Mr. Coyne states:

> I have used an average of the historical MRP and the forward-looking MRP in my CAPM analysis, which is more conservative than relying solely on the forward-looking MRP. By contrast, both Dr. Lesser and FERC rely solely on a forward-looking MRP in the CAPM. If I were to use only the forward-looking MRP, my CAPM results would have been 180-190 basis points higher.

5.3 Please show the calculation in an Excel spreadsheet that demonstrates how using only the forward-looking MRP would result in the CAPM results being 180–190 basis points higher.

Response:

Concentric provides the following response:

[42] DCF results are based on 90-day average stock prices for proxy group companies. Results include 50 basis points for flotation costs and financial flexibility except for U.S. risk premium results. The risk premium analysis was only conducted for the U.S. proxy group; as such, there are no risk premium results for the Canadian Regulated proxy group.

[43] Ibid.

The difference between the CAPM results using an average MRP and only a forward-looking MRP are summarized in Figure 30 of Concentric's January 2022 report (reproduced below). Please also see Exhibits JMC-FEI-8.1 and JMC-FEI-8.2 for the gas proxy groups and Exhibits JMC-FBC-8.1 and JMC-FBC-8.2 for the electric proxy groups.

Figure 30: CAPM Results (including flotation costs)[44]

	Average MRP	Forward-looking MRP
Canadian Utilities	10.68%	12.55%
U.S. Gas Utilities	10.67%	12.46%
North American Gas Utilities	11.05%	12.96%
U.S. Electric Utilities	11.12%	13.02%
North American Electric Utilities	10.80%	12.65%

5.3.1 If using updated inputs as of September 2022 results in a different recommended ROE by Mr. Coyne than presented in Exhibit B-8, please present the requested calculations above using the original and updated inputs, respectively, in an Excel spreadsheet.

Response:

Concentric provides the following response:

The difference between the CAPM results using an average MRP and only a forward-looking MRP are summarized below as of September 30, 2022. Please refer to the September Update for the updated CAPM results for FEI and FBC. The average differential between the CAPM results using an average MRP and a forward-looking MRP is approximately 60 basis points as of September 2022.

[44] Includes 50 basis points for flotation costs and financial flexibility.

Updated Figure 30: CAPM Results (including flotation costs) – as of 9/30/22[45]

	Average MRP	Forward-looking MRP
Canadian Utilities	10.08%	10.69%
U.S. Gas Utilities	9.87%	10.44%
North American Gas Utilities	10.24%	10.86%
U.S. Electric Utilities	10.43%	11.06%
North American Electric Utilities	10.17%	10.78%

5.4 Please recalculate the ROE under CAPM in an Excel spreadsheet using all of Dr. Lesser's preferred input assumptions and methodology for FEI and FBC, respectively, which are to:

i. Use the current average yields on 30-year government bonds as the risk-free rate;

ii. Calculate the MRP using the multi-stage DCF model;

iii. Use forward-looking MRP;

iv. Use Dr. Lesser's North American proxy group, excluding companies with recent M&A activities; and

v. Use the Hamada formula to adjust for the difference in financial leverage between the proxy groups and FBC and FEI, respectively.

Response:

Concentric provides the following response:

Please refer to Attachment 5.4a for the requested analysis for FEI, and Attachment 5.4b for the corresponding FBC analysis. The CAPM results using Dr. Lesser's preferred input assumptions and methodology are summarized in the tables below.

[45] Ibid.

CAPM Results – Gas – Lesser Methodology[46]

	At 45.0% Equity	At 38.5% Equity
Canadian Utilities	6.78%	7.38%
U.S. Gas Utilities	6.70%	7.25%
North American Gas Utilities	6.82%	7.43%

CAPM Results – Electric – Lesser Methodology[47]

	At 40.0% Equity
Canadian Utilities	7.22%
U.S. Gas Electric	7.18%
North American Electric Utilities	7.04%

[46] Ibid.
[47] Ibid.

6.0 Reference: REBUTTAL EVIDENCE OF CONCENTRIC ENERGY ADVISOR, INC.

Exhibit A2-20, BCUC IR 6.1, 6.2, 6.6; Exhibit B1-21, Part 2, Section D

Cumulative Effect to ROE Using Dr. Lesser's Input Assumptions and Methodology

In response to BCUC IR 6.1, Dr. Lesser provides an illustrative calculation on flotation cost adder. In response to BCUC IR 6.2, Dr. Lesser states that "… I conclude that an assumed 5% flotation cost is a reasonable value."

In response to BCUC IR 6.6, Dr. Lesser states:

> First, as I stated in my August 2021 report, I believe that adding a flotation cost adder to the base allowed ROE overstates flotation costs, as demonstrated in my response to 6-5, above. Second, as discussed below, I do not consider an adder for financial flexibility to be just and reasonable. (Note that my discussion applies to both FEI and FBC.)

Mr. Coyne addresses Dr. Lesser's position regarding an adder for flotation cost and financial flexibility in section D of his rebuttal evidence.

6.1 Using an assumed 5 percent flotation cost and Dr. Lesser's methodology to calculate flotation cost in response to BCUC IR 6.1, please provide what would be the recalculated flotation cost adder for FEI and FBC, respectively.

Response:

Concentric provides the following response:

Please refer to Attachments 6.1a and 6.1b for the recalculated flotation cost adder for FEI and FBC using Dr. Lesser's methodology and an assumed 5 percent flotation cost. The tables below summarize the flotation cost adder for each of FEI and FBC using this methodology.

Flotation Cost Adder: Dr. Lesser's Methodology (basis points)

Proxy Group	FEI	FBC
Canadian Regulated	25	25
US Gas	21	
North American Gas	24	
US Electric		19
North American Electric		20

As explained in Mr. Coyne's evidence, most Canadian utility regulators including the BCUC have typically accepted an adjustment of 50 basis points for flotation costs and financial flexibility.

6.2 Please calculate the hypothetical recommended ROE by Mr. Coyne (average between CAPM and multi-stage DCF) using all of Dr. Lesser's preferred input assumptions and methodology under the multi-stage DCF (see IR 3.2 above) and CAPM (see IR 5.4 above) for FEI and FBC, respectively. Please use the same data as presented in Exhibit B-8 and as of September 2022, specify all assumptions, and show the calculation in an Excel spreadsheet.

Response:

Concentric provides the following response:

Please refer to Attachment 6.2a for the requested analysis for FEI as of December 31, 2021. The results are summarized in the tables below.

Summary of Results – Natural Gas – at 45% Equity – 12/31/21 data[48]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	6.53%	6.41%	6.56%	6.5%
Multi-Stage DCF	10.23%	8.98%	9.63%	9.6%
Avg CAPM and Multi-Stage DCF	8.4%	7.7%	8.1%	8.1%

Summary of Results – Natural Gas – at 38.5% Equity – 12/31/21 data[49]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	7.13%	6.96%	7.17%	7.1%
Multi-Stage DCF	10.23%	8.98%	9.63%	9.6%
Avg CAPM and Multi-Stage DCF	8.7%	8.0%	8.4%	8.4%

Please refer to Attachment 6.2b for the requested analysis for FBC as of December 31, 2021. The results are summarized in the table below.

[48] Includes flotation costs adjustment using Dr. Lesser methodology, as shown in the response to BCUC Rebuttal IR 6.1.

[49] Ibid.

Summary of Results – Electric – at 40% Equity – 12/31/21 data[50]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric	Average
CAPM	6.97%	6.87%	6.74%	6.9%
Multi-Stage DCF	10.28%	8.51%	8.78%	9.2%
Avg CAPM and Multi-Stage DCF	8.6%	7.7%	7.8%	8.1%

Please refer to Attachment 6.2c for the requested analysis for FEI as of September 30, 2022. The results are summarized in the tables below.

Summary of Results – Natural Gas – at 45% Equity – 9/30/22 data[51]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	7.64%	7.64%	7.73%	7.7%
Multi-Stage DCF	10.20%	8.22%	8.93%	9.1%
Avg CAPM and Multi-Stage DCF	8.9%	7.9%	8.3%	8.4%

Summary of Results – Natural Gas – at 38.5% Equity – 9/30/22 data[52]

	Canadian Regulated Utilities	US Gas Utilities	North American Utilities - Gas	Average
CAPM	8.22%	8.13%	8.29%	8.2%
Multi-Stage DCF	10.20%	8.22%	8.93%	9.1%
Avg CAPM and Multi-Stage DCF	9.2%	8.2%	8.6%	8.7%

Please refer to Attachment 6.2d for the requested analysis for FBC as of September 30, 2022. The results are summarized in the table below.

[50] Ibid.
[51] Ibid.
[52] Ibid.

Summary of Results – Electric – at 40% Equity – 9/30/22 data[53]

	Canadian Regulated Utilities	US Electric Utilities	North American Utilities - Electric	Average
CAPM	8.09%	8.31%	8.10%	8.2%
Multi-Stage DCF	10.20%	8.32%	8.68%	9.1%
Avg CAPM and Multi-Stage DCF	9.2%	8.3%	8.4%	8.6%

[53] Ibid.

Attachment 1.1.1a

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 1.1.1b

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 1.1.1c

REFER TO LIVE SPREADSHEET MODEL

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Attachment 1.1.1d

REFER TO LIVE SPREADSHEET MODEL

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(accessible by opening the Attachments Tab in Adobe)

Attachment 1.1a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 1.1b

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Attachment 1.1c

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Attachment 2.1.1a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 2.1.1b

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Attachment 2.1a

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Attachment 2.1b

REFER TO LIVE SPREADSHEET MODEL

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Attachment 2.2.1a

REFER TO LIVE SPREADSHEET MODEL

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(accessible by opening the Attachments Tab in Adobe)

Attachment 2.2.1b

REFER TO LIVE SPREADSHEET MODEL

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(accessible by opening the Attachments Tab in Adobe)

Attachment 2.2a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 2.2b

REFER TO LIVE SPREADSHEET MODEL

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Attachment 2.3.1

REFER TO LIVE SPREADSHEET MODEL

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Attachment 2.3

REFER TO LIVE SPREADSHEET MODEL

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Attachment 3.1.1a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 3.1.1b

REFER TO LIVE SPREADSHEET MODEL

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Attachment 3.2a

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 3.2b

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 3.3a

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

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Attachment 3.3b

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 3.3c

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 3.3d

REFER TO LIVE SPREADSHEET MODEL

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Attachment 4.2.1a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 4.2.1b

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

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Attachment 4.2a

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 4.2b

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

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Attachment 5.2.1a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 5.2.1b

REFER TO LIVE SPREADSHEET MODEL

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Attachment 5.2a

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

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Attachment 5.2b

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 5.4a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 5.4b

REFER TO LIVE SPREADSHEET MODEL

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Attachment 6.1a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 6.1b

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Attachment 6.2a

REFER TO LIVE SPREADSHEET MODEL

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Attachment 6.2b

REFER TO LIVE SPREADSHEET MODEL

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Attachment 6.2c

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Attachment 6.2d

REFER TO LIVE SPREADSHEET MODEL

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