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British Columbia Utilities Commission
Sixth Floor, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Laurel Ross, Acting Commission Secretary and Director

Dear Sirs/Mesdames:

Re: FortisBC Energy Inc. ("FEI")
Application for Common Equity Component and Return on Equity for 2016

We enclose for filing in the above proceeding the electronic version of the Reply Submission of FEI dated April 28, 2016.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

[original signed by Matthew Ghikas]

Matthew Ghikas
Personal Law Corporation

MG/ta
Enclosure

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF THE UTILITIES COMMISSION ACT
R.S.B.C. 1996, CHAPTER 473

AND

IN THE MATTER OF AN APPLICATION BY FORTISBC ENERGY INC. FOR ITS COMMON EQUITY COMPONENT AND RETURN ON EQUITY FOR 2016

REPLY SUBMISSION OF FORTISBC ENERGY INC.

APRIL 28, 2016

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PART ONE: INTRODUCTION AND OVERVIEW

1. The submissions of AMPC/BCOAPO and CEC only underscore that the real issue in this proceeding is whether the ROE and common equity ratio established by the 2013 GCOC Stage 1 Decision should be increased or remain in place, not whether it should be decreased. FEI has demonstrated in its Final Submission that a 40 percent common equity ratio and 9.5 percent ROE meets the comparability of returns, capital attraction and financial integrity components of the Fair Return Standard. FEI's own evidence is supported by Mr. Coyne's "bottom-up" business risk and ROE assessments, which were based on accepted approaches and informed by prior Commission determinations.

2. By contrast, the precipitous reduction in FEI's existing ROE and common equity ratio being sought by interveners would not meet the Fair Return Standard. A 7.5 percent ROE on 35 percent equity would place FEI's ROE and common equity ratio below other major Canadian gas distribution (and most electric distribution) utilities, constrain FEI's ability to issue debt, and represent a significant challenge to FEI's current credit rating.

3. The interveners have employed reasoning in support of their position that actually suggests, at a minimum, maintaining the same ROE and common equity ratio approved by the Commission in the 2013 GCOC Stage 1 Decision. Their position on ROE and capital structure is ultimately based on the fact that Dr. Booth had advocated a 7.5 percent ROE on 35 percent common equity in 2012 and has now concluded there have been insufficient changes to justify a departure from his previous recommendation. In this vein, for instance, CEC characterizes both market conditions and FEI's business risk as "largely stand pat".[1] AMPC/BCOAPO and CEC also cite Dr. Booth's opinion that FEI's ROE should not change until long Canada bond yields are above 3.8 percent, a threshold which has yet to be exceeded.[2] The problem with AMPC/BCOAPO's and CEC's reliance on continuity as the rationale for their position is that the 2013 GCOC Stage 1 Decision had approved an ROE of 8.75 percent on 38.5

[1] CEC Submission, para. 682.

[2] AMPC/BCOAPO Submission, p. 38.

percent common equity, not 7.5 percent on 35 percent equity. The very same continuity cited by these interveners actually suggests, at a minimum, maintaining the current approved ROE and capital structure.

4. FEI's Final Submission[3] dated April 3, 2016 anticipated and addressed many of the issues raised by AMPC/BCOAPO, CEC and ICG in their submissions. In this Reply Submission, we have focussed on the main issues where further response is necessary. It is organized generally along the lines of FEI's initial submission. FEI's silence on a particular issue should not be construed as agreement with intervener submissions.

[3] Abbreviations used in the FEI Final Submission are also used in this Reply Submission.

PART TWO: THE FAIR RETURN STANDARD

5. FEI addressed the elements and proper application of the Fair Return Standard in Part Two of its Final Submissions. While there is agreement among the parties as to the three-part test comprising the Fair Return Standard, CEC and AMPC/BCOAPO have re-interpreted and applied it in a manner inconsistent with binding legal authority.

6. CEC introduced its submission by setting out the short-term revenue requirement impacts of FEI's proposal,[4] despite clear direction from the Supreme Court of Canada that a Fair Return must be established based on the utility's cost of capital alone. FEI is investing to provide service to customers, and the long-term interest of customers is served by fairly compensating the utility.[5]

7. AMPC/BCOAPO state they are not advocating that the Commission consider their members' ability to pay rates.[6] AMPC/BCOAPO say instead that the Commission should "balance the interests of ratepayers and utilities investors", essentially citing the regulatory compact reflected in the rate setting provisions of the UCA. They say that "the Commission cannot and must not protect FEI from ***all*** business and financial risk by unnecessarily raising the ROE and common equity ratio at the expense of customers."[7] (italics in original, bold added.) The symmetry of the regulatory compact means that a Fair Return is neither unnecessarily high, nor unnecessarily low. However, AMPC/BCOAPO are misapplying the regulatory compact in characterizing rates that provide an appropriate risk adjusted return as being unnecessarily high. The allowed ROE and common equity ratio is not "protecting" the utility; it is compensating the utility for the risk assumed when investing to provide safe and reliable utility service to customers. The first element of the Fair Return standard, the comparable investment requirement, dictates that the allowed return "be comparable to the return available from the

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[4] CEC Submission, para. 2.

[5] This is discussed further in paragraphs 14-31 of FEI's Final Submission.

[6] AMPC/BCOAPO Submission, p. 13.

[7] AMPC/BCOAPO Submission, p. 14.

application of the invested capital to other enterprises of like risk".[8] This requirement recognizes the "absolute" (in the Supreme Court of Canada's words) obligation to provide an appropriate risk adjusted overall return.[9]

8. The interveners' ultimate position on the appropriate ROE and capital structure for FEI cannot be reconciled with the proper application of the Fair Return Standard.

[8] AMPC/BCOAPO accept the NEB's articulation at p. 13 of their Submission.

[9] See FEI Final Submission, paras. 19-24.

PART THREE: OVERALL ASSESSMENT OF THE PARTIES' RESPECTIVE POSITIONS

9. Part Three of FEI's Final Submission addressed factors that point to the reasonableness of FEI's request, particularly when contrasted with Dr. Booth's recommendations. AMPC/BCOAPO and CEC have commented on some, but not all, of FEI's submissions. FEI has answered their main arguments below, reinforcing why FEI's overall position is reasonable and should be accepted.

A. RESPONSE TO AMPC/BCOAPO'S COMMENTS ON WITNESS QUALIFICATIONS

10. AMPC/BCOAPO state on page 2 of their submission: "In contrast to Mr. Coyne, who is an expert in giving evidence for utilities, Dr. Booth is an expert in finance." This is an odd argument for two reasons.

(a) AMPC/BCOAPO's characterization of Mr. Coyne's experience and client base is inaccurate. Mr. Coyne is an expert in finance and in many aspects of utilities and utility regulation. He has industry experience and advises on matters beyond just cost of capital.[10] He has "testified or provided expert evidence in over thirty proceedings in state, provincial and federal jurisdictions in Canada and U.S. **on behalf of** utilities, **regulatory commissions and staff**."[11] (Emphasis added.) Mr. Coyne also regularly advises utilities, generating companies, **public agencies** and **private equity investors** on business issues pertaining to the utilities industry throughout North America.[12]

(b) AMPC/BCOAPO's argument is also odd given Dr. Booth's position. Dr. Booth is an experienced finance professor, but has no industry experience in Canada or the U.S. and he generally appears on behalf of customer groups. In his

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[10] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Appendix B. See also, Tr 1, 17, l. 23 - 18, l. 10 (Coyne) and Exhibit B-17.

[11] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 1.

[12] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 1.

testimony, he frequently differentiates himself from those who have given evidence for utilities.[13]

11. FEI submits that, while the professional focus of Dr. Booth and Mr. Coyne differs (finance professor vs. advisor to businesses, regulators, private equity investors and government agencies), they are both qualified to give cost of capital evidence. The Commission can and should assess the reasonableness of their professional opinions based on the relative merits of their analyses. FEI submits that Mr. Coyne's analysis is most compelling and his recommendations make sense, both quantitatively and qualitatively. The Commission should accept his evidence.

B. INTERVENER LOGIC SUGGESTS MAINTAINING CURRENT APPROVED ROE AND CAPITAL STRUCTURE

12. FEI's Final Submissions make a compelling case for increasing the current ROE and common equity ratio. It is nonetheless worth highlighting the intervener arguments that, when considered in light of the outcome of the GCOC Stage 1 proceeding, logically support at least maintaining the current ROE of 8.75 percent and 38.5 percent common equity ratio.

(a) Intervener Arguments Supporting an ROE That Should Be At Least 8.75 Percent

13. AMPC/BCOAPO advocate a 7.50 percent ROE based on Dr. Booth's recommendation that the ROE not change until the long Canada bond yield reaches 3.8 percent: "Dr. Booth is clear, he has not revised his 2012 recommendation because in 2012 he recommended that the ROE not change until forecast LTC yields reached 3.8%. This has not happened and there have been no other circumstances that in his view warrant a change."[14] CEC similarly states: "Dr. Booth's recommendation is the same as it was three years ago, which is 'don't change the ROE unless the forecast long bond yield gets above 3.8%'."[15] They cite the AAM output as being indicative of the direction of FEI's cost of capital, when the AAM output is

[13] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), Appendix A; Tr 3, ll. 23-36 (Booth).

[14] AMPC/BCOAPO Submission, p. 38.

[15] CEC Submission, para. 212.

either the same (accounting for the 3.8 percent floor) or higher (just looking at up to date spreads and bond yields) than in 2012.[16] CEC states, for instance, that "the evidence is that the AAM would result in a stand-pat ROE".[17] These interveners are glossing over the fact that the Commission approved an ROE of 8.75 percent in the 2013 GCOC Stage 1 Decision, not 7.5 percent. Applying their logic to the Commission's actual ROE determination suggests an ROE of at least 8.75 percent. Neither CEC, nor AMPC/BCOAPO, acknowledge the disconnect between their position that a fair ROE is 7.5 percent and the rationale underlying Dr. Booth's unchanged recommendation.

14. Unless the Commission accepts Dr. Booth's opinion that the ROE should not change until long Canada bond yields exceed 3.8 percent, Dr. Booth's analysis actually suggests that the ROE should be increasing from the 8.75 percent approved by the Commission. As described in paragraph 40 of FEI's Final Submission, the output of Dr. Booth's favoured Risk Premium Model increased by 30 basis points from 2012. In other words, when Dr. Booth used the same model, the same approach and new data, the resulting "fair ROE" was 30 basis points higher. The increase should actually be much larger because the "Operation Twist" adjustment is understated by a wide margin; Mr. Coyne's evidence is that the current "Operation Twist" adjustment should be increased from 130 basis points to 274 basis points.[18] That change alone would take Dr. Booth's Risk Premium Model "fair ROE" to 9.24 percent, close to Mr. Coyne's recommendation and well above the current approved ROE.

(b) Intervener Submissions Also Logically Support Continuity in Capital Structure

15. Similarly, although CEC and AMPC/BCOAPO advocate a 35 percent common equity ratio, their discussion regarding factors that would affect the common equity ratio point to at least maintaining the status quo (i.e., 38.5 percent).

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[16] AMPC/BCOAPO Submission, pp. 11 and 41; CEC Submission, para 273.

[17] CEC Submission, para 271.

[18] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, pp. 34-35.

16. CEC and AMPC/BCOAPO concur with FEI that financial markets and business risk are to be considered in determining the appropriate common equity ratio.[19] CEC suggests that little has changed in either regard. For instance: "The CEC submits that the evidence is highly persuasive that with **largely stand-pat financial markets and business risk**, FEI's case for an increase in allowed ROE and common equity is non-existent."[20] (Emphasis added.) "Largely stand-pat" market conditions and business risk point to leaving the current approved common equity ratio unchanged. CEC does not acknowledge the inconsistency between its position on the continuity in business risk and market conditions and its advocacy of a significant decrease in FEI's current approved common equity ratio.

17. AMPC/BCOAPO share CEC's view that markets are similar to 2012.[21] They say FEI's business risk has "remained constant or declined"; however, as explained in Part Four below, AMPC/BCOAPO's conclusion on business risk does not account for the increase in FEI's political risk that CEC appears to acknowledge.

18. Other factors relevant to the determination of capital structure include (a) FEI's position relative to its peers, (b) FEI's ability to issue debt on reasonable terms in all market conditions, and (c) FEI's ability to maintain its existing credit rating. AMPC/BCOAPO and CEC have not justified:

(a) reducing FEI's common equity ratio below that of every other major Canadian gas and electric distribution utility discussed in the proceeding apart from Hydro Québec, when such a ranking is illogical and when neither intervener has identified a favourable change in FEI's risk relative to other Canadian utilities since 2013;

[19] CEC Submission, para. 682.

[20] CEC Submission, para. 682. See also, para. 40.

[21] AMPC/BCOAPO Submission, pp. 5 and 37.

(b) restricting FEI's ability to issue debt – an issue only amplified by the fact that there has been a significant increase in FEI's capital expenditure requirements since 2013; and

(c) undermining FEI's credit metrics after Moody's has signalled (by previously putting FEI's rating on negative outlook) that FEI's rating is not secure.

(c) FEI's Requested ROE in 2012 vs. Current Request

19. Despite the disconnect between their own reasoning and recommendation, AMPC/BCOAPO suggest that FEI is inconsistent in applying for a 10.5 percent ROE in 2012, and only applying for 9.5 percent now: "If they [FEI] believed their evidence in 2012, and if they really think the signs are such that the ROE should be higher in 2016 than in 2013, they should be applying for more. If this Commission were to reduce the FEI return by the reduced "ask" by FEI, it would only grant FEI an ROE of 7.75%."[22] This argument is without merit.

20. FEI relies on experts to determine the appropriate ROE for the Company. In 2013, FEI had retained different experts who used different methodologies and weightings to arrive at their conclusions. Ms. McShane had relied on an equity risk premium model, constant and multi-stage DCF and comparable earnings methodologies. Dr. Vander Weide had used constant growth DCF and risk premium models.[23] Mr. Coyne's recommended ROE is based on his multi-stage DCF model and the CAPM calculated for his Canadian and U.S. proxy groups. He did not use the comparable earnings approach. He calculated a constant growth DCF but did not give weight to the results in acknowledgement of the fact that the Commission had expressed concerns about the constant growth DCF model in the 2013 GCOC Stage 1 Decision. Mr. Coyne's recommendation would have been higher had he given weight to the constant growth DCF results. In fact, the 10.54 percent average of all of Mr. Coyne's test results (i.e.,

[22] AMPC/BCOAPO Submission, p. 3.

[23] 2013 GCOC Decision, pp. 68, 69 and 72.

before excluding constant growth DCF) for the Canadian proxy group was within four basis points of the ROE FEI had requested in 2012.[24]

C. INTERVENERS RELYING ON AAM ARGUMENT THAT DR. BOOTH ABANDONED

21. AMPC/BCOAPO states on page 6: "Mr. Coyne recognizes a reduction in Long term Canada interest rates, but manages to recommend an increased ROE and equity component anyway. Dr. Booth notes that at the time the evidence was filed in this matter the elements contained in the Commission's AAM point to a slightly lower recommendation than in 2012, although actual application of the model would not result in such a decrease since it is subject to a 3.8% floor." AMPC/BCOAPO reiterated this argument on page 11 and again at page 35. CEC makes a similar argument, stating:[25]

> 33. The CEC submits that the decline in interest rates is reliable information and that the Commission should give significant weight to in making its determinations.
>
> …
>
> 275. The CEC submits that the evidence with respect to the AAM points to a reduction from the status quo for the ROE or failure to cross the threshold and therefore remaining with the status quo. The CEC recommends that the Commission in its judgements consider that at a minimum this should be an upper end constraint on any changes.

22. The fact that these interveners are relying so heavily on this point is surprising for two reasons. First, as FEI described in paragraphs 72 to 82 of FEI's Final Submission, Dr. Booth backed away from his original evidence that the AAM points to a decline in ROE when it was pointed out to him that his position was inconsistent with his own evidence that long Canada bond yields are declining for reasons unrelated to investors trading off risk and reward, which precludes equating that decline with a corresponding reduction in utility returns.

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[24] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 5 and 104.

[25] CEC Submission, paras. 196 and 275. CEC also says at para. 271 that "the evidence is that the AAM would result in a stand-pat ROE."

Second, the AAM is a two-factor model, in which the change in utility credit spreads is a direct indicator of the change in the allowed ROE. The increase in credit spreads has now outpaced the decline in long Canada bond yields, producing the opposite result. AMPC/BCOAPO and CEC do not acknowledge these points in their submissions.

D. DR. BOOTH IS CONSISTENT, BUT HIS RECOMMENDATION IS CONSISTENTLY TOO LOW

23. AMPC/BCOAPO point to the "consistency" in Dr. Booth's ultimate recommendations over time (7.5 percent ROE on 35 percent common equity) as a key consideration pointing to the reasonableness of his recommendation.[26] FEI submits that Dr. Booth's consistency only undermines the credibility of his recommendation.

24. FEI's Final Submission (starting at paragraph 46) explains how Dr. Booth's justification for his recommendation changed when his correction to his Risk Premium Model analysis yielded a "fair ROE" for FEI higher than it had yielded in 2012. AMPC/BCOAPO dismisses the fact that Dr. Booth did not increase his ROE recommendation upon discovering his error by suggesting that a change would have represented the "rote application of formulae" in circumstances where expert judgment was preferable. In order for judgment to yield credible results it must be based on logic that is internally consistent and based on reasonable assumptions. The consistent application of Dr. Booth's own logic dictated that he revise his recommendation upwards. The fact that Dr. Booth used his judgment to maintain the same recommendation when the data suggested an increase is one of a number of factors that demonstrate his recommendation is too low.

25. Dr. Booth is also consistent in recommending the same common equity ratio. His evidence at the hearing was "I've been recommending 35 percent for a gas distributor and electric distributor, for that matter, for at least the last fifteen years",[27] but this is not a reasonable approach. In order to make sense of Dr. Booth's position that virtually all major electric and natural gas distribution utilities (including FEI) merit a 35 percent common equity

[26] AMPC/BCOAPO Submission, pp. 3 and 5.

[27] Tr 3, 510, ll. 7-10 (Booth).

ratio, these utilities would have to be of comparable business risk. The evidence is that these utilities have materially different risk profiles. For instance:

(a) Ranking natural gas distribution on par with a large electric distribution utility like Hydro Québec makes little sense.

(b) As among the major natural gas utilities, there is a big difference between jurisdictions where natural gas is seen as a solution to GHG emissions (Alberta and Ontario) and jurisdictions where it is a primary target of GHG policy (BC).

E. INDEXING OF COMBINED CAPITAL STRUCTURE AND ROE PROVIDES INSIGHT

26. AMPC/BCOAPO characterize as "meaningless"[28] and novel the figure from Mr. Coyne's evidence (reproduced in FEI's Final Submission, paragraph 42) that depicts the recommendations of Dr. Booth and Mr. Coyne in the context of Canadian distribution utility returns. AMPC/BCOAPO's argument misses the essential point of the figure:

(a) First, presenting the combined impact of the ROE multiplied by the common equity ratio is a useful means of depicting relativities among the utilities. It is, in essence, an index. The information is presented on a uniform basis for all of the utilities, and accordingly provides a meaningful relative comparison.

(b) Second, the Fair Return Standard requires that the combined effect of ROE and equity ratio is considered.[29] Mr. Coyne stated in this regard:[30]

> I believe that every Commission in Canada looks at both the equity ratio and the allowed ROE. Some Commissions set the ROE -- set the equity ratio and hold it. And others adjust both the ROE and the equity ratio whenever they have a normal rate proceeding. So it does vary by Commission, but I believe all commissions look at the combination of equity ratio and ROE at some point in time in their review.

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[28] AMPC/BCOAPO Submission, p. 11.

[29] 2009 Decision, pp. 2 and 15.

[30] Tr 1, 27, l. 18 - 28, l. 1 (Coyne).

(c) Third, Dr. Booth conceded that investors are interested in earnings, which are the product of the ROE x common equity ratio x rate base.[31] The combined impact of the ROE x common equity ratio, depicted in the figure, is going to be important to utility investors.

27. In any event, as discussed in paragraph 44 of FEI's Final Submission, the story depicted in the figure is the same when capital structure and ROE are considered separately. Dr. Booth's recommendations for FEI cannot be reconciled with the allowed returns of other Canadian distribution utilities.

F. FINANCIAL AND ECONOMIC CONDITIONS

28. AMPC/BCOAPO's position on market conditions is that they remain much as they were in 2012,[32] but they do suggest that there are indicators that point to "a levelling off or modest decline in the cost of capital".[33] As described in FEI's Final Submission, Dr. Booth's description of today's market conditions is, if anything, less bullish than his evidence in 2012.[34]

29. AMPC/BCOAPO rely on Dr. Booth's evidence that money markets can be accessed at less cost than in 2013.[35] They also cite Dr. Booth's evidence, based on his analysis of generic BBB bonds in Canada versus the utility BBB bonds in the U.S., that financing cost to Canadian utilities is significantly lower than for U.S. utilities.[36] AMPC/BCOAPO have not acknowledged Mr. Coyne's rebuttal evidence demonstrating that both of Dr. Booth's conclusions were at odds with the underlying facts.

30. On the first point, Dr. Booth's focus on the decline in T-Bill yields (and the long term Canada bond yields) is problematic because, as he admitted elsewhere, they are declining

[31] Tr 3, 508, ll. 4-6 and 509, ll. 11-14 (Booth).
[32] AMPC/BCOAPO Submission, p. 37.
[33] AMPC/BCOAPO Submission, pp. 4-5.
[34] See FEI Final Submission, paras. 84-88.
[35] AMPC/BCOAPO Submission, p. 37.
[36] AMPC/BCOAPO Submission, pp.36-375.

for reasons unrelated to investors trading off risk and reward. Dr. Booth has not accounted for credit spreads, which quantify the compensation investors demand for making the investment in relationship to the risk free rate.[37] Utility credit spreads relative to both T-bills and long-term Canada bond yields have increased since 2012, suggesting higher risk aversion given the increase in underlying spreads. The implied spread over T-bill calculated by Dr. Booth in this proceeding is 13 basis points higher than his calculation in the GCOC Stage 1 proceeding evidence. There has also been an increase of 20 basis points in FEI's credit spread above the T-bill rate from 2012 to 2015.[38] Mr. Coyne's study of spreads over long Canada bond yields reveals a similar pattern; since August of 2012, credit spreads for A-rated utility bonds have increased by 58 basis points.[39] The increase in credit spreads since 2012 is an indicator of increased riskiness of the utility investment.[40]

31. CEC "accepts that there has been a small increase in the bond spread for Canadian distribution companies between April, 2012 and November, 2015."[41] A bond spread increase of approximately 25 percent is not small.

32. Mr. Coyne explained that Dr. Booth's comparison of generic BBB bonds in Canada versus the utility BBB bonds in the U.S. is misleading because these are not comparable bond baskets. Dr. Booth did not factor in to his comparison differences in bond terms and the types of companies in each index.[42] Furthermore, all but two of the companies studied in this proceeding have been A-rated companies, so a comparison of BBB-rated bond yields provides very little insight into FEI's capital costs relative to the proxy group. Mr. Coyne conducted a direct comparative analysis of U.S. and Canadian A-rated utility bonds. Mr. Coyne's analysis showed that the U.S. A-rated utility bond yield is only 11 basis points higher than its Canadian counterpart, with the difference being due to lower government bond yields in Canada relative

[37] See Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, pp. 5, 9, 11-12.

[38] Exhibit B-16, FEI Rebuttal Evidence, pp. 1 and 2.

[39] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 9, ll. 15-16.

[40] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 5.

[41] CEC Submission, para. 53.

[42] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, pp. 12-16.

to the U.S. This is hardly the significant difference suggested by Dr. Booth, as the differences are minimal and are driven by underlying benchmark yields rather than utility specific credit spreads.

33. Mr. Coyne's analysis demonstrated that both the A-rated and BBB-rated Canadian utility bond credit spreads have been consistently higher than in the U.S. for several years. The difference appears to be widening in recent months.[43] This indicates that investors regard that Canadian utility bonds as riskier than U.S. utility bonds in relation to the underlying government bond yields and the relative risk for Canadian utility bonds is increasing.

G. DR. BOOTH'S "OPERATION TWIST" ADJUSTMENT

34. The "Operation Twist" adjustment is the only thing that separates Dr. Booth's Risk Premium Model from the CAPM models that he emphatically rejected. Given the importance of the "Operation Twist" adjustment to Dr. Booth's favoured Risk Premium Analysis, the brevity of AMPC/BCOAPO's submission on "Operation Twist" is striking. Their discussion is essentially confined to two paragraphs on page 45. One of those paragraphs critiques Mr. Coyne's re-calculation of Dr. Booth's "Operation Twist" adjustment. The other paragraph confirms that Dr. Booth is less confident in his methodology. CEC's submission on "Operation Twist" is longer than AMPC/BCOAPO's argument, but in a similar vein and no more persuasive.

(a) Response to Intervener Critique of Mr. Coyne's Recalculation

35. AMPC/BCOAPO state that Mr. Coyne's "response to Dr. Booth's 130 basis point Operation Twist adjustment is to cherry-pick numbers and manufacture a 274 basis point adjustment instead, based on 2004 and January 8, 2016 endpoints." They suggest that in doing so, "Mr. Coyne chooses extreme values from a volatile spread of numbers…".[44] Dr. Booth, and not Mr. Coyne, picked 2004 as the relevant endpoint.

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[43] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, pp. 12-16.

[44] AMPC/BCOAPO Submission, p. 45.

36. Mr. Coyne picked 2004 as the starting point for his analysis because Dr. Booth (a) characterizes 2004 as a year when the business cycle was close to neutral,[45] and (b) uses June 2004 as the starting point to compare recent abnormal rates with normal conditions in the context of discussing preferred shares and the derivation of his credit spread adjustment.[46] Indeed Dr. Booth has been very explicit that 2004 is appropriate as the starting point for his analysis: [47]

> In June 2004 the long Canada bond yield is given by BMO as 5.34% and the preferred share yield at 5.48%. At the end of June 2004 the Scotia Capital "A" yield was 6.34% for a spread of 100 basis points over the long Canada bond yield, which is about "average" for a complete business cycle. **This is partly why I (sic) the 2004 data is useful as a starting point, since in most respects it was "normal**".
>
> (Emphasis added.)

37. Dr. Booth also calculated his credit spread adjustment by comparing the spread in June 2004, which he deems to be a "typical average", with spreads at the current point in time.[48]

38. CEC supports Dr. Booth's conclusion, but its Submission also refers to factors that support the conclusion that the "Operation Twist" adjustment needs to be larger. For example, CEC asserts that the "current long Canada bond yields are at least 1.30% too low".[49] It also refers to the fact that Dr. Booth's regression analysis indicates that government of Canada's bond yields should be approximately 250 basis points higher than 2016 long Canada bond yield forecast,[50] which actually implies an "Operation Twist" adjustment of 250 basis points.

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[45] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 46, l. 7.

[46] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 46, ll. 8-26 and p. 48, l. 1.

[47] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 47, ll. 7-11.

[48] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 44, ll. 16-17: "At the current point in time 'A' spreads are at 1.91% or 91 basis points more than the typical average for the business cycle, which I take to be 1.0%".

[49] CEC Submission, para. 242.

[50] CEC Submission, para. 243.

(b) Dr. Booth's New Approach to "Operation Twist"

39. AMPC/BCOAPO appears to allude to the fact that Dr. Booth raised for the first time at the oral hearing a new way of assessing the magnitude of the "Operation Twist" adjustment.[51] Dr. Booth stated that he would now suggest that, rather than looking into the average spread between S&P TSX preferred shares index spread and the A-rated bond spread as he had done in his evidence, it is better to look at individual Canadian utility preferred shares. He says this reduces the "Operation Twist" adjustment from 130 basis points in his written evidence to about 60 to 70 basis points.[52] FEI submits that there are a number of problems with Dr. Booth's analysis, which include:

(a) Dr. Booth's new approach yields an adjustment that is at least 60 to 70 basis points below what he described in his written evidence as the minimum reasonable adjustment for the abnormal risk-free rate environment.[53]

(b) The stated purpose of Dr. Booth's "Operation Twist" adjustment is to compensate for the downward effect of government bond buying programs on the long Canada bond yield. A 60 to 70 basis point "Operation Twist" adjustment would not even address the effect he attributes to government bond buying since 2012, let alone the previous rounds of bond buying that Dr. Booth agrees had already driven the long Canada bond yield to historic lows.

(c) Dr. Booth's new approach appears to be based on a sample of one – the CU Inc. reset preferred share yields. Extrapolating from a single company to draw conclusions about the economy as a whole is not a reliable methodology. This is particularly true since the yields of CU Inc.'s shares are intuitively going to be directly influenced by (i) conditions set by CU Inc., and (ii) the current record low interest rates (the latter introducing circularity into Dr. Booth's reasoning).

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[51] AMPC/BCOAPO Submission, p. 45.

[52] Tr 3, 532, l.1 - 534, l. 7; 538, ll. 1-12 (Booth).

[53] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 1, ll. 23-27 (Booth).

40. Reducing the "Operation Twist" adjustment to only 60 to 70 basis points would put the results of the Risk Premium Model in the range of 6.80 to 6.90 percent. This outcome is, without question, inconsistent with comparable returns test of the Fair Return Standard. At best, Dr. Booth's evidence on this point underscores that his original approach for calculating the "Operation Twist" adjustment is unreliable, without providing a plausible substitute. There remains a large body of evidence that points to the necessary adjustment being much higher than 130 basis points.

H. MR. COYNE'S CAPITAL STRUCTURE ASSESSMENT

41. CEC misstates the evidence regarding how Mr. Coyne developed his capital structure recommendation. CEC suggests that it was "predetermined" in that "the 40 per cent Mr. Coyne recommended was initially determined at the outset in that it was the company's position".[54] In fact, Mr. Coyne's approach was to conduct sufficient analysis to arrive at his own recommendation as well as opine on the reasonableness of FEI's proposal.

42. Mr. Coyne explained in his evidence that he performed a detailed risk assessment of FEI and each of the Canadian and US proxy groups and Canadian peer companies to understand FEI's risk relative to the proxy group.[55] He reviewed each of the major business risk categories for each company as well as their financial risk and credit metrics.[56] His assessment indicated that FEI was generally subject to greater business risk than its U.S. and Canadian peer companies. FEI's proposed equity ratio was at the 13th percentile of all peer companies reviewed (U.S. and Canada combined),[57] and its weighted equity return was at the bottom quartile of all of the proxy group companies.[58] Mr. Coyne elaborated at the hearing:[59]

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[54] CEC Submission, paras. 305 and 306.

[55] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 101.

[56] Tr 1, 21, ll. 4-17 (Coyne).

[57] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 101.

[58] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 101.

[59] Tr 1, 21, ll. 4-17 (Coyne).

> I have also performed a comprehensive risk analysis of FEI relative to U.S. gas distribution proxy companies and also relative to FEI's Canadian peer companies. I found that FEI is generally higher risk than the U.S. proxy group, primarily due to the competitive and policy pressures natural gas faces in the province. I also found based on this analysis that FEI is more risky than all but one of the other major natural gas distributors in Canada, for essentially the same reasons. Accordingly, I consider that my combined ROE and equity return recommendation, being below that of Gaz Métro's but above the others in Canada, is reasonably positioned in the context of Canadian utilities and is appropriate for FEI.

43. Mr. Coyne reached his conclusions independently of FEI's proposal. His opinion, based on his detailed review, was that FEI's proposed 40 percent common equity ratio was at the low end of the range. His evidence and analysis provides ample support for his conclusion.

PART FOUR: FEI'S BUSINESS RISK

44. Dr. Booth, AMPC/BCOAPO and CEC all acknowledge that the pertinent inquiry in the context of FEI's business risk is the extent to which it has changed since the 2012 GCOC Stage 1 proceeding. CEC discusses business risk at length, but at the end of the day characterizes FEI's business risk as "largely stand-pat" since 2012.[60] CEC "acknowledges some possible increased political risk but finds that there are significant offsets to this risk at this time."[61] AMPC/BCOAPO, after a passing (4 sentence) reference to local government initiatives *other than mandatory connection and the City of Vancouver's policy to eliminate the use of natural gas,* and no reference to either provincial or federal initiatives, characterizes FEI's business risk as having "remained constant or declined since 2013".[62] FEI submits that increased political risk has not been offset by other factors.

A. THE POTENTIAL FOR DIFFERENT RISK CATEGORIES TO AFFECT FEI'S BUSINESS

45. AMPC/BCOAPO, before turning to the question of whether FEI's business risk has changed since 2012, commented on FEI's assessment of the potential for different types of risk (risk categories) to impact FEI's business. In AMPC/BCOAPO's view, FEI's assessment in this regard "defies logic". They express the view that commodity prices should be ranked higher than regulatory risk because, while regulatory approvals "may to some extent affect FEI's business", "there is no doubt that commodity prices affect its business on a daily basis and have a greater potential for direct harm."[63] FEI submits that it has ranked the two categories accurately in terms of their potential to impact FEI's business.

46. AMPC/BCOAPO's suggestion that regulatory decisions "may to some extent affect FEI's business" is a significant understatement. The Commission approves the allowed ROE and common equity ratio. It approves rates. It approves significant projects that may be required to mitigate system risks or must be in place in order to attach customers. It has the

[60] CEC Submission, para. 682. See also para. 666.

[61] CEC Submission, para. 301.

[62] AMPC/BCOAPO Submission, p. 70.

[63] AMPC/BCOAPO Submission, p. 20.

ability to review capital costs after the fact. It establishes the test (MX test) for attaching new customers. It approves supply contracts, commodity deferral accounts and decoupling mechanisms. It sets the depreciation rates that determine how quickly invested capital is recovered. In short, there is no question that, for a business like FEI that is subject to comprehensive rate regulation, the regulator has a very significant ability to affect the business of the utility. It is the single largest risk faced by FEI.[64] This statement is further supported by the rating methodologies of both Moody's and DBRS. Moody's rating methodology weights regulatory framework as 25% in determination of its credit rating.[65] Similarly DBRS gives significant standalone consideration to the regulatory risk FEI faces in its rating determinations, as evidenced in its rating reports.[66]

47. FEI has collectively ranked political risk, market risk, energy prices and business profile second in terms of the ability of these categories to influence FEI's business. AMPC/BCOAPO suggest that supply risks should have been ranked above them.[67] Access to supply is important, but FEI's ranking makes more sense for a natural gas utility in a province with abundant shale gas, aggressive GHG policies and no coal or nuclear generation.

48. In the current proceeding, the risk ranking is less important than the assessment of whether FEI is facing a different level of risk since 2012. The interveners' positions on that point are addressed next.

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[64] In the GCOC Stage 1 Decision, the Commission found at p. 40 that the BC regulatory framework has a significant influence on FEI's business and that individual decisions can have significant implications for FEI.

[65] Exhibit B-1, Application, p. 20, Table 2; Exhibit B-9, BCUC-FEI IR 1.8.3; Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 90.

[66] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 74-75.

[67] AMPC/BCOAPO Submission, p. 20.

B. INCREASE IN POLITICAL RISK

(a) CEC's Acknowledgement Regarding Political Risk

49. FEI's Final Submission addressed the evidence on initiatives at all levels of government that have contributed to an increase in political risk.[68] CEC accepts that political risk may have increased, characterizing the real issue as being whether an increase in political risk is otherwise offset by other factors. CEC states, for instance, "The CEC submits that the climate change issues is (sic) a real and emerging risk issue for FEI and that it needs to be given due attention."[69] It "acknowledges that the City of Vancouver has created a less supportive environment for FEI than it has experienced in the past…".[70] Although CEC points to the 35 year timeline of the City plan as tempering the "less supportive environment for FEI", CEC also concedes in paragraphs 651 to 653 that there are more immediate impacts associated with mandatory connection policies and other bylaws. The 35 year period of the Plan is a legitimate consideration, but the period is shorter than the typical life of distribution assets, and FEI must still invest to maintain safe and reliable service to customers in the City of Vancouver in the intervening period. Irrespective of the time frame, it is undeniable that the number of customers, and amount of throughput at issue, is very significant.[71] FEI discusses later in this section why other factors do not offset the increased political risk.

(b) AMPC/BCOAPO Have Avoided Discussing New Government Initiatives

50. AMPC/BCOAPO do not mention (1) the provincial Climate Action recommendations, (2) federal government initiatives, (3) mandatory connection initiatives, or (4) the City of Vancouver's Plan to eliminate the use of natural gas in the City. The sum total of their discussion on political risk (other than Aboriginal Rights) is as follows:[72]

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[68] FEI Final Submission, para. 109.

[69] CEC Submission, para. 645.

[70] CEC Submission, para. 638.

[71] See FEI Final Submission, para. 114.

[72] AMPC/BCOAPO Submission, p. 32.

> AMPC/BCOAPO accepts that over time there will be efforts to reduce GHGs, however there is no reason to believe that these efforts will threaten FEI's ability to earn a return on, or of, its capital. Imminent carbon policies are also not a new phenomenon, dating back to the Kyoto Accord.
>
> FEI ranks carbon tax and energy policy and legislation risk as unchanged since 2013. What has changed according to FEI is local initiatives, with references to the interest in district energy systems. While district energy systems may limit FEI's future growth in some areas, probably with high density multi-family buildings, where it is already hard pressed to compete, there is no evidence to suggest that such developments will impact on its ability to be competitive. To the contrary, as discussed previously, and most importantly, all of the evidence is that natural gas is and will remain extremely competitive in its key residential market. This difference alone arguably more than offsets the price impacts that FEI apprehends from future carbon policies, and eliminates any new risk. These policies have in any event not discouraged FEI from undertaking a large capex program.

51. Price competitiveness, which is AMPC/BCOAPO's focus in the above-quoted passage, is of little assistance when consumers want low-carbon district energy[73] or when FEI is prohibited from attaching or serving customers. Government initiatives like those underway in the City of Vancouver can also adversely impact FEI's price competitiveness, since other customers will experience upward delivery rate pressure as throughput declines.

52. FEI's capex program, cited by AMPC/BCOAPO, is a red herring in this context. FEI is under a statutory duty to provide safe and reliable service to its customers. Sustainment capital is an important aspect of meeting that obligation. FEI's most significant growth capital expenditures (Tilbury LNG, Eagle Mountain-Woodfibre expansion) are generally unrelated to serving FEI's core heating load. They will primarily serve export markets and natural gas vehicles, and are part of FEI's efforts to find new ways to add load to the system to address challenges in its core heating market.

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[73] CEC acknowledged this stating at para. 571: "The CEC agrees that the district energy systems may pose an increasing risk for FEI to the extent that uneconomic investment in such systems is pursued by certain customer types."

53. AMPC/BCOAPO suggest that FEI's business risk is now at a level comparable to 2005.[74] This position is untenable. The Commission recognized in 2009 that there had been significant developments in political risk since 2005. The Commission noted the uncertainty created by climate change legislation that did not exist during the cost of capital proceeding in 2005.[75] Though in the 2013 GCOC Stage 1 Decision the Commission found there had been some reduction in risks related to provincial government climate and energy policy compared to the period leading up to the 2009 ROE Decision,[76] government initiatives have only increased in their intensity since 2013.

(c) ICG's Submissions on Mandatory Connection

54. ICG has filed limited submissions that are focussed on developments in local government policies on mandatory connection. FEI answers ICG's arguments below.

Mandatory Connection Has Become a Significant Issue Only Recently

55. ICG states that the "City of Vancouver's steps are not recent",[77] and that FEI was aware of them in 2012. FEI submits that the relevant inquiry in this proceeding is how the evidence on FEI's current business risk was reflected in the Commission's deliberations in the GCOC proceeding. Discussion about local government policies favouring mandatory connection to thermal energy utilities did not figure prominently in FEI's business risk evidence in the GCOC proceeding,[78] and they were not mentioned in the 2013 GCOC Stage 1 Decision. Mandatory connection policies became a significant issue in recent months, with Creative Energy's application for an exclusive franchise for heating and the City of Vancouver's development of a mandatory connection bylaw. Those recent initiatives were accompanied by a Plan that contemplates ending natural gas consumption in the City of Vancouver altogether - a policy which ICG does not address.

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[74] AMPC/BCOAPO Submission, pp. 4, 34.

[75] GCOC Stage 1 Decision, p. 53.

[76] GCOC Stage 1 Decision, pp. 26-27.

[77] ICG Submission, para. 3.

[78] Exhibit B-11, ICG-FEI IR 2.8.5 and 2.2.1.

Risks Do Not Need to Have Materialized To Be a Risk

56. ICG has mischaracterized FEI's position on the issue of mandatory connection to district energy. It states: [79]

> But FEI would have the Commission conclude that the use of mandatory connections to achieve such targets are having a negative impact on natural gas throughput and is an increased business risk since 2012. In fact, the use of mandatory connections has not had a material impact on natural gas throughput.

A more accurate characterization of FEI's position is that, while throughput is not currently being impacted significantly by mandatory connection to district energy, the potential ramifications of planned initiatives will be significant when they materialize. The probability of harm to FEI has increased since 2012 with the recent City of Vancouver initiatives, as have the potential impacts. The issue for FEI is particularly significant when mandatory connection is combined with a City of Vancouver policy aimed at phasing out natural gas.

57. The main thrust of ICG's submission is that cost of capital is unaffected by local government action until the risk materializes. ICG states, for instance: [80]

> Unless there is evidence that it is load that may have been served by FEI or that throughput has been affected, then such submissions and claims do not support the FEI conclusion that the risks of FEI relative to mandatory connections and exclusivity of end-uses have increased since 2012.

Risk is, by definition, *prospective* in nature. It is defined with respect to both magnitude and probability of occurrence. The materialization of these particular risks in the future (i.e., when probability of occurrence is 100 percent) will pose a very significant challenge to FEI. While the cost of capital implications will certainly be greater as risks come closer to materializing, the probability of occurrence and the potential implications have both increased since the 2013 GCOC Stage 1 Decision. FEI's current overall return (ROE and capital structure) should directionally reflect that upward shift in risk.

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[79] ICG Submission, para. 6.

[80] ICG Submission, para. 2.

(d) Aboriginal Rights and Title

58. AMPC/BCOAPO's response to FEI's evidence and submissions on Aboriginal rights and title[81] is to cite the Commission's 2009 ROE Decision. The Commission had found, based on the evidence presented in that hearing, that "presently" the risks did not cast doubt over FEI's ability to earn a return on or of capital. In the current proceeding, FEI has elaborated on the potential for Aboriginal rights and title issues to impede FEI's ability to add and maintain throughput. These considerations can affect FEI in much the same way as regulatory lag in capital approvals, i.e., by preventing FEI from serving those who want service, by making the service less attractive to developers who require assurance that service will be available at a particular date, or by increasing interruption or operational risk on aging infrastructure.[82] Regulatory lag is an accepted risk factor, as AMPC/BCOAPO appear to concede.[83] Rights and title issues should be considered in the same light.

C. EFFECT OF IMPROVED PRICE COMPETITIVENESS MUTED AND DOES NOT OFFSET INCREASED POLITICAL RISK

59. As indicated earlier, CEC "acknowledges some possible increased political risk but finds that there are significant offsets to this risk at this time."[84] In terms of offsetting risk factors, CEC and AMPC/BCOAPO focus on the decline in natural gas commodity prices and the operating cost comparison relative to electricity. These interveners give insufficient weight to the factors that mute the impact of such changes on FEI's overall competitiveness.

60. AMPC/BCOAPO place emphasis on natural gas commodity prices.[85] CEC goes so far as to state that "the overall cost of gas is the most significant consideration in customer decision-making…".[86] In fact, the recent increases in electricity prices, not the change in natural gas commodity price, are the main contributor to the improvement in price competitiveness

[81] FEI Final Submission, para. 121.

[82] See also FEI Final Submission, para. 121.

[83] AMPC/BCOAPO Submission, p. 30.

[84] CEC Submission, para. 301.

[85] AMPC/BCOAPO Submission, p. 21.

[86] CEC Submission, para. 488. See also para. 506.

since 2012.[87] FEI customer bills are similar to what they were five years ago, as AMPC/BCOAPO acknowledge.[88] Lower commodity costs have not translated into lower natural gas bills for FEI customers because commodity costs represent only a small portion of the overall bill and delivery rates have increased.[89]

61. The price competitiveness of natural gas has improved relative to electricity. However, these interveners are glossing over the fact that it is the ***consumer response*** to changes in the relative cost of electricity and natural gas service, and not the changes in the prices themselves, that ultimately impacts FEI. There is not a one-to-one relationship between price changes and risk, since other factors are present that mute the impact of the price changes. This is demonstrated by measuring how the trends in throughput, UPC and market share track against changes in price competitiveness. Despite the improvements in price competitiveness since 2012: (1) FEI's throughput was lower in 2014 than in 2012;[90] (2) FEI's residential UPC has continued the downward trend;[91] and (3) natural gas has continued to lose market share to electricity in core space heating and water heating applications.[92]

62. The weak relationship between price competitiveness and FEI's key indicators can be explained by several non-price factors, including:

(a) First, the natural gas demand is relatively inelastic, meaning that a certain percentage change in natural gas prices does not lead to similar percentage change in customers' consumption patterns. This is particularly true in the short-term (most people would not, for instance, decide to turn the heat higher

[87] Exhibit B-1, Application, Appendix C, p. 38.

[88] AMPC/BCOAPO Submission, p. 21.

[89] A customer bill includes delivery charge, storage and transport, and taxes and levies.

[90] Exhibit B-9, BCUC-FEI IR 1.1.1 and 1.20.1.

[91] Exhibit B-9, BCUC-FEI IR 1.20.3.

[92] Exhibit B-4, CEC-FEI IR 1.16.2.

when gas prices go down) and for customers who lack fuel switching capabilities.[93]

(b) Second, price competitiveness and FEI's key indicators have become somewhat decoupled by virtue of factors such as government policies and consumer attitudes about carbon emissions.[94] AMPC/BCOAPO are ignoring the importance of political factors (among other things) in the 2009 ROE Decision[95] and the subsequent increases in political risk since then (particularly with regard to local government policies) in suggesting that price changes could justify a return to the 33 percent common equity ratio of 2000.[96]

(c) Third, the higher upfront capital costs of natural gas appliances and potential customer contributions resulting from the main extension test continue to act as a barrier for adoption of natural gas by builders and developers.[97]

D. TRENDS IN KEY MARKET INDICATORS

(a) Customer Additions

63. AMPC/BCOAPO point to the fact that FEI's total customers increased since 2013.[98] Adding customers is a positive thing for a utility, but a different picture emerges from the one painted by interveners when one considers this statistic in the context of total throughput. FEI's throughput was lower in 2014 than in 2012, in large part because customers – both new and existing – are using less natural gas. As a result of significant declines in UPC over recent years, FEI now has to add more than one customer to add the same amount of load

[93] Tr 2, 336 ll. 5-19 (Coyne).

[94] Exhibit B-9, BCUC-FEI IR 1.24.1.2. Exhibit B-7 AMPC-FEI IR 1.2.10 b).

[95] 2009 ROE Decision, p. 37.

[96] AMPC/BCOAPO Submission, p. 25; see also p. 21.

[97] See FEI Final Submission, para. 106.

[98] AMPC/BCOAPO Submission, p. 26.

that a single customer once added.[99] Achieving an increasing rate of customer growth to maintain throughput will be a challenge over the longer term.

(b) FEI's Declining Use Per Customer (UPC)

AMPC/BCOAPO's Comparison to 2004

64. UPC is one of the several instances where AMPC/BCOAPO have changed their reference point away from the time of the GCOC Stage 1 proceeding. AMPC/BCOAPO suggests that "Of particular importance is that FEI's total throughput, has generally leveled off and is currently at a total volume that is higher than in 2004."[100] Comparing current throughput to where it stood 12 years ago is not a meaningful comparison. While FEI has added new customers, on average new customers cost more to add than in 2004 and consume significantly less natural gas. FEI's throughput, despite adding customers, was lower in 2014 than in 2012 (and lower than 2004 by almost 4 PJ).[101] FEI addresses in the previous paragraph the long-term challenge posed by relying on an increasing rate of customer growth to maintain throughput.

65. AMPC/BCOAPO suggests that the competitive risk is of "little cause for concern" because "FEI could lose half of its residential customers, and have its residential rates double as a consequence, and still have a price advantage over BC Hydro."[102] AMPC/CEC's argument only holds true in the current environment of record low commodity rates and implicitly assumes that existing customers will only leave natural gas when there is no longer a price advantage to remaining on natural gas. This assumption is not warranted in light of the non-price considerations previously discussed.

66. AMPC/BCOAPO suggest that UPC declines are to be expected for gas distribution utilities and are a good thing when they result from efficiency and conservation measures. They say that "other Canadian gas distribution utilities face exactly the same 'problem' and

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[99] Exhibit B-9, BCUC-FEI IR 1.20.4.

[100] AMPC/BCOAPO Submission, p. 27.

[101] Exhibit B-9, BCUC-FEI IR 1.1.1 and 1.20.1.

[102] AMPC/BCOAPO Submission, p. 27.

have lower common equity ratios than FEI. Apart from the fact that conservation should be viewed positively, it also has not had any discernible impact on FEI's ability to earn its allowed ROE."[103] This submission misses the mark in a number of respects. First, the risk to investors increases, not decreases, as declines in UPC become more certain. Second, while declines in UPC may be the product of energy efficiency and conservation – a good thing for society as a whole – the exercise that the Commission is undertaking in this proceeding is determining the utility's cost of capital. The cost of capital is affected by investor required returns. Investors' required returns reflect the risk that they will not recover their invested capital, irrespective of the cause of that risk. Third, as discussed later in Part Four, a utility's overall risk is not merely defined by its ability to earn its allowed ROE in the short-term.

CEC is Understating the Importance of UPC Declines in the Residential Sector

67. CEC argues that although residential UPC is decreasing, the residential sector only represents 38 percent of FEI's total throughput.[104] CEC is understating the importance of declining residential UPC on FEI's throughput and revenue. Residential customers pay higher delivery rates than commercial and industrial customers. In 2014, FEI's residential throughput represented up to 60 percent of FEI's sales revenue.[105] As residential delivery rates are higher, a one GJ decline in residential UPC has a more significant impact on FEI's total throughput than a similar decline in other rate schedules. This issue was discussed in more detail in FEI's response to CEC IR 1.16.3.

CEC's Conclusion That Rate of UPC Decline is Slowing is Due to Period Selected

68. CEC argues that the rate of decline in UPC is slowing down, and that FEI's business risk has accordingly declined.[106] FEI's normalized UPC has, in fact, been declining at a faster rate in recent years. The cumulative rate of decline in UPC from 2007 to 2012 was approximately 5% (or approximately one percent annual reduction). The cumulative rate of

[103] AMPC/BCOAPO Submission, p. 27.

[104] CEC Submission, para. 573.

[105] Exhibit B-1, Application, Appendix C, p. 8; Exhibit B-9, BCUC-FEI IR 1.1.1.

[106] CEC Submission, paras. 576, 577, 579, 584 and 585.

decline from 2009 to 2014 was approximately 5.5 percent (or approximately 1.1 percent annually).[107] CEC's conclusion also is dependent on using an asymmetrical comparison of a 10 year historic average and a 20 year forecast. Comparing 10 year historic UPC numbers with 10 year forecast UPC numbers indicates a relatively constant rate of decline.

69. UPC numbers cannot decline at the same rate forever. The long-term risk is that declining UPC stabilizes at a point where the UPC and throughput are, in practical terms, too low to allow the utility to recover its revenue requirement. This is akin to the risk currently materializing for the TransCanada Mainline.

(c) Throughput: NGT Not Expected to Offset Losses in Heating Load

70. AMPC/BCOAPO state: "Moreover, there is no compelling evidence that alternative energy poses a greater business risk to FEI now than it did in 2013. In fact, the reverse is true. The advent of new transportation technology that allows natural gas to replace diesel in heavy duty trucking applications will likely increase natural gas demand in the future."[108] This is not a change since 2012, and evidence of natural gas for transportation ("NGT") technology was before the Commission in the GCOC Stage 1 proceeding.[109] FEI's evidence in this proceeding is that the addition of NGTvolumes is a favourable development for customers in terms of representing a revenue stream. However, they do not materially affect FEI's overall risk profile. Even if NGT expands to its potential over the next few years, its share of total throughput would remain relatively small.[110]

E. REGULATORY RISK

Regulatory Uncertainty, Lag and Deferral Accounts Unchanged

71. AMPC/BCOAPO's submission on regulatory risk (pages 30 and 31) is: "While AMPC/BCOAPO agrees generally that these categories of risk [regulatory uncertainty and lag,

[107] Exhibit B-9, BCUC-FEI IR 1.20.3.

[108] AMPC/BCOAPO Submission, p.28.

[109] GCOC Stage 1 Decision, pp. 26, 34.

[110] Exhibit B-1, Application, Appendix C, p. 13.

deferral accounting and administrative penalties] remain the same as in 2013, it rejects the notion that FEI faces any significant risk in any one of them."[111] It is the fact that nothing has changed, rather than AMPC/BCOAPO's views on FEI's risk in absolute terms, that matters in this case. FEI does face regulatory risk today, just as it has in the past. FEI's ability to earn any revenues, recover any of its costs, or add to the system, is still dependent on prior Commission approval.

72. AMPC/BCOAPO cite Mr. Coyne's jurisdictional ranking based on DBRS' methodology and data (it was not Mr. Coyne's methodology, as AMPC/BCOAPO imply), which identifies BC as being the most supportive jurisdiction in Canada from the perspective of bondholders. They make the comment: "For some reason Mr. Coyne and FEI did not draw this important piece of evidence to the Commission's attention and instead Dr. Booth did."[112] In fact, Mr. Coyne had included in his evidence the DBRS rankings upon which the chart was based.[113] As Mr. Coyne pointed out, the differences among the jurisdictions are relatively small. Mr. Coyne has never felt it necessary, for instance, to adjust his recommendation upwards in the lower ranked jurisdictions, or to recommend a downward adjustment in the higher ranked jurisdictions.[114] In any event, AMPC/BCOAPO has conceded that FEI's regulatory risk is unchanged since 2012.

Risk Associated With PBR

73. AMPC/BCOAPO do not address FEI's submissions on the risk presented by PBR. CEC suggests that the risk associated with PBR is overstated because FEI has achieved its ROE under past PBR plans.[115] FEI submits that the risk presented by PBR is a function of PBR design. The current PBR is designed differently from the last FEI PBR. Some of terms of the current PBR

[111] AMPC/BCOAPO Submission, p. 30.

[112] AMPC/BCOAPO Submission, p. 31.

[113] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Appendix A.

[114] Tr 1, 110, l. 17 - 111, l. 2 (Coyne).

[115] CEC Submission, paras. 626 to 628.

will pose a greater challenge towards the end of the PBR term[116] – hence FEI's characterization that there is the potential for greater risk as it moves through the PBR term.

74. CEC also states that "PBR was undertaken under the existing ROE, which was set to a Fair Return Standard and accepted by FEI as being appropriate."[117] FEI is unclear of what is intended by this comment. FEI was required by the Commission to present a PBR proposal. The terms of the PBR were fixed by the Commission, not FEI. The terms of the PBR varied from those proposed by FEI in significant ways, including an increase of more than 100 percent in the productivity factor. The Commission left FEI's cost of capital to be addressed outside of the PBR, so there is no merit to any suggestion that FEI has accepted the ROE as appropriate in light of PBR, or that the ROE cannot change during the PBR term.

F. AVAILABILITY OF SUPPLY AND SECURITY OF SUPPLY RISKS

75. Although AMPC/BCOAPO argues that availability of supply risk has declined since 2013 "with further development and quantification of BC's shale gas resources as confirmed by further expansion of Nova Gas Transmission System",[118] CEC does not share that view.[119] CEC agrees with FEI that there has been no change in availability of supply risk. FEI submits that AMPC/BCOAPO's argument is without merit.

76. The WSCB production forecast indicates that with recent declines in natural gas and oil commodity prices, the forecast production level in spring of 2015 is lower than the same forecast production level in spring of 2012.[120] This reflects the fact that the large reserves of shale gas will not result in higher production levels, unless there are markets for new production and producers can at least meet their break-even point.

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[116] Exhibit B-1, Application, Appendix C, p. 74; FEI Primary Submission, paras. 122-124.

[117] CEC Submission, para. 628.

[118] AMPC/BCOAPO Submission, p. 28.

[119] CEC Submission, para. 440.

[120] Exhibit B-1, Application, Appendix C, p. 52.

77. The NOVA Gas Transmission Ltd. ("NGTL") extension has the potential to represent a challenge to FEI.

(a) NGTL's proposed extensions would provide producers in BC with zero cost access to the rest of the NGTL system and the large AECO/NIT marketplace. This access would provide a significant incentive for supply to bypass Westcoast's T-North system, which would impact FEI's ability to continue to access energy supply.[121] Any reduction in use of the T-North system would impact the Station 2 marketplace, on which FEI relies for the majority of its supply requirements. It would also reduce the utilization of the Westcoast T-North and T-South systems, driving up tolls for captive shippers like FEI.[122]

(b) NGTL extension has no impact on FEI's ability to access the Southern Alberta marketplace. FEI's ability to access the NGTL system in Southern Alberta marketplace is limited by the NGTL system and by the capacity of Southern Crossing Pipeline, which currently is fully contracted and utilized.[123]

78. AMPC/BCOAPO appear to be under the misapprehension that FEI has characterized security of supply risk as higher than in 2013 due to factors related to bringing the gas from Northern BC to FEI's system.[124] That is not the case. FEI's evidence was that security of supply risk is only "slightly increased" as a result of incorporating FEVI's and FEW's system into the FEI Amalco system.[125]

79. CEC appears to agree that amalgamation has marginally increased FEI Amalco's security of supply risk but argues that this has been more than offset by proposed and/or approved integrity and sustainment projects such as LMIPSU. FEI explained why this is not the

[121] Exhibit B-9, BCUC-FEI IR 1.29.1.

[122] Exhibit B-1, Application, Appendix C, p. 54.

[123] Exhibit B-4, CEC-FEI IR 1.42.3.

[124] AMPC/BCOAPO Submission, p. 29.

[125] Exhibit B-9, BCUC-FEI IR 1.16.1; Exhibit B-1, Application, p. 3 and Appendix C, p. 56.

case in response to BCUC IR 2.50.2.[126] Integrity management is a constant issue for FEI, particularly as more and more assets come to their end of life.

G. ABILITY TO EARN ROE IS A SHORT-TERM RISK AND HAS NOT CHANGED SINCE 2012

(a) Interveners Have Not Identified Any Change Since Last Proceeding

80. AMPC/BCOAPO and CEC have cited Dr. Booth's evidence on FEI's past track record of achieving its allowed ROE. FEI agrees that it has a strong track record in this regard, as would be expected from sound utility management. As FEI pointed out in paragraphs 126 to 128 of its Final Submission, FEI's track record is no different today than it was in 2012.

81. AMPC/BCOAPO and CEC, despite their apparent agreement that short-term risk has not changed since the 2013 GCOC Stage 1 Decision, devote significant effort to demonstrating that FEI faces (in AMPC/BCOAPO's words) "very little short term risk". FEI's Final Submission (see paragraphs 127 and 128) addresses how FEI has been able to manage its risk, but that the short-term risk (being inherently prospective) always exists.

(b) Interveners' Attempt to Elevate The Importance of FEI's Track Record

82. AMPC/BCOAPO, although conceding that FEI's ability to achieve its allowed ROE is a measure of short-term risk, also contend that FEI's consistent ability to earn its allowed ROE "provides a useful objective measure of its **overall** business risk"[127] (Emphasis added) and attempts to equate FEI's track record with overall risk (their intended implication being that FEI is exposed to little overall risk).

83. On AMPC/BCOAPO's logic, the TransCanada Mainline is essentially risk-free despite facing very serious stranding risk in the near term. The NEB increased Mainline's

[126] Exhibit B-10, BCUC-FEI IR 2.50.2.

[127] AMPC/BCOAPO Submission, p. 17.

common equity ratio from 30 percent to 40 percent over several proceedings prior to any major deviation of earned ROE from allowed ROE, as Dr. Booth pointed out:[128]

> At that time the NEB pointed out that the Mainline had been able to earn its revenue requirement (and allowed ROE) but that the possibility that it may not be able to do this in the future had increased. The NEB has subsequently increased the Mainline's common equity ratio from 30% to 40% in several hearings to reflect its increased capital recovery risk.

84. CEC suggests that the Commission should give most weight to short-term risks because "investors are free to alter their investment at any time if the immediate rewards do not match the immediate risk."[129] CEC's analysis is flawed.

(a) First, utilities are not "free to alter their investment at any time". Utilities like FEI have invested in long-lived utility assets and are subject to statutory obligations to provide safe and reliable service to customers. It is for this very reason that the law requires the regulator to meet a comparable investment requirement as part of the Fair Return Standard. The comparability test would not be necessary if utilities could reinvest where they obtain a better risk adjusted return on investment.

(b) Second, as FEI discussed in paragraph 128 of the Final Submission, no investor would ever accept the argument that it only requires compensation for risks that have already materialized in earnings. Dr. Booth has also agreed that long-run risk is more important in a low interest-rate environment.[130]

85. In any event, the interveners' argument that FEI's track record of earning its allowed ROE is most important and provides a useful objective measure of its "overall business

[128] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 65, ll. 3-6.

[129] CEC Submission, para. 359.

[130] Exhibit C7-8, FEI-AMPC IR 1.14.1.

risk"[131] at best suggests maintaining the current common equity ratio, not reducing it. There has been no change in FEI's performance since 2012.

(c) AMPC/BCOAPO Mistakenly Equate Beta With Business Risk

86. AMPC/BCOAPO use FEI's track record of earning its allowed ROE as an argument against the Blume adjustment to beta. They state: "A key question remains: how many years of persistent over earning are needed before even a utility witness accepts the limited risk faced by utility investors, instead of advancing the argument that the utility will move to become as risky as the overall market (beta adjusting toward 1.0)?" The first problem with this argument is that it is equating beta with a measurement of business risk or a utility's ability to earn its allowed return. It is not. Beta is a measure of the volatility of a security in comparison to the market as a whole. The beta estimate serves only to compensate the holder of a diversified portfolio for the risks that cannot be mitigated by diversification, i.e., the risks that are shared with the broader market. A beta of 1.0 reflects the volatility of the market as a whole. Utility betas tend to be below one because utilities' earnings tend not to increase and decrease directly with the broader market.[132]

87. Moreover, neither FEI, nor Mr. Coyne has ever suggested that a utility has or will have the same business risk as the overall market. As discussed further in Part Six below, the Blume adjustment is not an adjustment of the utility beta **to** 1.0; it is an adjustment **towards** 1.0 to account for the empirical evidence that the betas of low beta stocks tend to be understated. The way the Blume adjustment calculation works, an adjusted beta would never move **to** 1.0.

(d) Pre-Sharing vs. Post-Sharing

88. AMPC/BCOAPO refer to the disagreement over whether, during PBR periods, "pre-sharing ROE" or "post-sharing ROE" should be compared to the allowed ROE. Dr. Booth's

[131] AMPC/BCOAPO Submission, p. 27; CEC Submission, paras. 38 and 665.

[132] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 36, 38 and 42-45.

depiction of FEI's past earnings on a pre-sharing basis under PBR has the effect of overstating FEI's earnings for the reasons described in rebuttal evidence.[133] During cross-examination, Mr. Coyne remarked: "I don't know why one would use pre, so I wouldn't accept that. That doesn't go to shareholders. Half that goes to customers."[134] In any case, this issue is somewhat academic since no intervener is suggesting that short-term risk has changed to date. The data should still be stated properly.

H. SUMMARY REGARDING BUSINESS RISK

89. Most risk factors are unchanged since 2012, but political risk has increased. The improved price competitiveness of natural gas relative to electricity does not fully offset the increase in political risk.

[133] Exhibit B-16, FEI Rebuttal Evidence, pp. 3-4.

[134] Tr 1, 54, ll. 14-16 (Coyne).

PART FIVE: OTHER FACTORS SUPPORTING 40 PERCENT COMMON EQUITY

90. In this Part, FEI addresses the arguments of AMPC/BCOAPO and CEC on other factors informing the appropriate capital structure. Their arguments are not persuasive. A 40 percent common equity ratio is reasonable and should be approved.

A. ACCESS TO CAPITAL AND CREDIT METRICS

91. FEI explained in Part Five of its Final Submission why maintaining a rating at the "A" level is important from the perspective of cost of and access to debt, particularly in light of the number of large projects FEI must debt finance. AMPC/BCOAPO "submits that a 35% common equity ratio is entirely consistent with the objective of maintaining FEI's existing credit rating."[135] AMPC/BCOAPO's assessment is flawed. Adopting their position on ROE and capital structure would impact FEI's financial integrity, and the detrimental affect on FEI's ability to attract capital on reasonable terms would represent a step backwards for FEI and customers alike.

(a) Past Ratings Action By Moody's

92. AMPC/BCOAPO urge the Commission to take comfort from the fact that FEI maintained a rating in the "A" category during a period (13 years ago) when FEI had 33 percent equity, and when FEI had 35 percent equity (almost seven years ago). They also argue that metrics are not the most important consideration in credit ratings.[136]

93. FEI has both ratings in the "A" category; however, there is a one notch difference between the two ratings. The Moody's rating of "A3" is only one notch above the "BBB" category, which would result in FEI having a split rating if it were to be downgraded. AMPC/BCOAPO continue to focus on the DBRS rating, despite the Moody's rating warranting greater focus based on factors discussed in paragraphs 140 to 146 of the FEI Final Submission.

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[135] AMPC/BCOAPO Submission, p. 66.

[136] AMPC/BCOAPO Submission, p. 66.

94. FEI's historic credit ratings are not informative of today's circumstances. Moody's downgraded FEI's rating from A2 to A3 in 2005, and has not since reversed this action. Moody's also put FEI on a negative ratings outlook in June 2013 as a result of "the BCUC's recent generic cost of capital decision (GCOC), which reduced both FEI's allowed ROE level and equity component for rates". This is further evidence that a regulatory decision has the ability to trigger credit rating actions. A further reduction in ROE and capital structure, in particular one as adverse as Dr. Booth's recommendation, will likely trigger a downgrade. Moody's subsequently removed the negative ratings outlook, but its initial decision to place FEI on a negative ratings outlook pending further review can only be interpreted as a signal that FEI's current rating is not secure. Moody's has fired the proverbial shot across the bow. AMPC/BCOAPO's approach in the face of that clear signal is cavalier.

95. FEI's financial integrity and FEI's credit metrics played a part in the Commission's 2009 decision to increase FEI's common equity ratio (from 35 percent to 40 percent) and ROE (from 8.47 percent to 9.50 percent). There had been concerns regarding a potential downgrade based on FEI's metrics at the time, and the Commission had concluded that it was appropriate to increase the common equity to maintain FEI's "A3" rating with a "margin of comfort".[137]

96. AMPC/BCOAPO points to the fact that the OEB has confirmed a 36 percent common equity ratio for Union Gas and EGDI. They say: "These gas distributors have more industrial load than FEI and do not have the same amount of regulatory protection, yet obviously there was no concern that a 36% common equity ratio would put their A credit ratings at risk."[138] Credit ratings are a function of, among other things, business risk and metrics derived from ROE and capital structure. AMPC/BCOAPO appear to be suggesting that Union Gas and EGDI are higher risk than FEI, which is contradicted by Dr. Booth's BC evidence (in the case of EGDI) and Ontario and Alberta evidence (for Union Gas).[139] AMPC/BCOAPO are

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[137] 2009 ROE Decision, p. 68.

[138] AMPC/BCOAPO Submission, p. 66.

[139] The fact that AMPC/BCOAPO is citing these factors at all to differentiate among Canadian distribution utilities is ironic given their insistence that the utilities are all fundamentally similar.

also advocating both a lower common equity ratio and lower ROE than either EGDI or Union Gas.

B. FEI'S RISK RELATIVE TO CANADIAN UTILITIES

(a) AMPC/BCOAPO Critique of Mr. Coyne Based on Incorrect Facts

97. AMPC/BCOAPO states: "Mr. Coyne recommends an equity component in excess of any allowed to Canadian comparables, largely without justification."[140] This statement is factually incorrect in two respects.

(a) First, Mr. Coyne determined that a 40 percent common equity ratio was at the low end of the range. FEI's proposed 40 percent common equity ratio is well below Gaz Métro's ratio after properly accounting for the latter company's deemed preferred shares (in effect, 43.5 percent[141]). It is above the major natural gas distribution utilities that the experts agree are less risky than FEI.[142]

(b) Second, the basis for AMPC/BCOAPO's contention that Mr. Coyne's recommendation was "largely without justification" is difficult to understand. As described in paragraph 42 above, Mr. Coyne examined the relative risk of Canadian utilities in detail. The depth of his analysis on this point contrasts markedly with Dr. Booth's somewhat simplified analysis. Mr. Coyne's in-depth understanding of the Canadian and U.S. utility industries was apparent during the hearing as well.

98. AMPC/BCOAPO also suggests that Mr. Coyne is inconsistent: "In fact he [Mr. Coyne] suggests that FEI is higher risk than EGDI but recommends a lower equity component

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[140] AMPC/BCOAPO Submission, p. 10.

[141] AMPC/BCOAPO state at pages 63-64 that Gaz Métro's common equity ratio is not 46 percent because preferred shares differ from common equity. FEI was careful to say that Gaz Métro's common equity ratio is the equivalent of 43.5 percent when the lower return on the deemed preferred shares is taken into account (see, for instance, FEI's Final Submission, para. 150). A return of 43.5 percent is still significantly greater than what FEI is requesting.

[142] See FEI Final Submission, paras. 43 and 45.

for FEI, 40%, than he did for EGDI, where he recommended 42% (in a proceeding where the Board granted 36%)."[143] Mr. Coyne's evidence here is consistent with his evidence in Ontario. AMPC/BCOAPO has mischaracterized Mr. Coyne's evidence in Ontario, as well as his evidence in this proceeding.

(a) ***Mr. Coyne's Ontario Evidence:*** Mr. Coyne explained that he had recommended a range of 40 to 45 percent for EGDI, not 42 percent: [144]

> And I just wanted to, if I could, just read for the record what our testimony was in that regard:
>
> > "Concentric's analysis supports an equity thickness in the range of 40 to 45 percent based on a proxy group comprised of North American gas distribution utilities with comparable risk profiles to EGDI. EGDI's proposed equity ratio of 42 percent would bring EGDI in closer alignment with its industry peers and supports the maintenance of an A minus credit rating to the benefit of both shareholders and ratepayers."
>
> **So the range we were citing there, as I recalled, was 40 to 45, and within that range Enbridge requested 42.** So that was the context I was struggling to remember.
>
> (Emphasis added.)

(b) ***Evidence in this proceeding***: FEI chose to propose 40 percent. Mr. Coyne showed that FEI's proposed equity ratio of 40 percent ranks in the bottom quartile (13th percentile) of all the utility proxy companies examined.[145] Mr. Coyne also stated: "The proposed equity ratio of 40 percent recognizes the greater risks of FEI relative to its Canadian peer companies; only Gaz Métro is riskier than FEI, and Gaz Métro enjoys a substantial portion of deemed preferred equity, effectively acting as a further buffer for debt holders."[146] Mr. Coyne

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[143] AMPC/BCOAPO Submission, p. 10.

[144] Tr 1, 60, l. 26 - 61, l. 16 (Coyne).

[145] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 101, Table 20.

[146] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 102, ll. 11-14.

concluded that 40 percent was "appropriate, albeit conservative",[147] which reconciles with his recommended range for the less risky EGDI.

(b) AMPC/BCOAPO Have Not Addressed The Flaws In Dr. Booth's Comparative Analysis

99. AMPC/BCOAPO suggest that the table at paragraph 89 of FEI's Final Submission, in which FEI summarized Dr. Booth's evidence in various proceedings across Canada, is "fabricated" and "a distortion and misstatement of Dr. Booth's nuanced written testimony".[148] FEI put each of the statements from Dr. Booth's various written evidence to Dr. Booth in cross-examination and gave him an opportunity to respond. In the Final Submission, FEI was very careful to state Dr. Booth's evidence accurately, including the fact that Dr. Booth believes that the differences among the utilities are small. FEI footnoted each row of the table, and included quotations from Dr. Booth's evidence in each footnote. A review of the back-up information and the cross-examination of Dr. Booth confirms the table and footnotes are accurate.

100. AMPC/BCOAPO also respond that Dr. Booth "has consistently recommended the same 35% for all the major natural gas distribution utilities except Gaz Metro where he has accepted the Regie's allowed common equity ratio of 38.5%."[149] FEI has never suggested otherwise (see paragraph 91 of the Final Submission, for instance), but the fact remains that Dr. Booth has included the utility risk ranking as part of his analysis.

101. Moreover, the very fact that Dr. Booth's recommendations are consistent over different jurisdictions, utilities and time only undermines the credibility of his position on FEI's capital structure for the reasons discussed in Part Two above.

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[147] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 102, ll. 10-11.

[148] AMPC/BCOAPO Submission, p. 65.

[149] AMPC/BCOAPO Submission, p. 19.

102. AMPC/BCOAPO have not attempted to reconcile Dr. Booth's reliance on Hydro Québec Distribution's 35 common equity component as justification for his recommendation[150] with the fact that Hydro Québec is significantly less risky than FEI (or any other natural gas distribution utility for that matter).

C. INTERVENER RELIANCE ON DR. BOOTH'S MISINTERPRETATION OF THE TRUST INDENTURE ISSUANCE TEST

103. AMPC/BCOAPO and CEC[151] both repeat Dr. Booth's assertion that FEI has misapplied its own issuance test under its Trust Indenture. AMPC/BCOAPO suggest that it is "telling" that FEI did not cross-examine Dr. Booth on his evidence on this point.[152]

104. FEI explained in responses to AMPC IRs,[153] in Rebuttal Evidence[154] and the Final Submission (just as FEI had explained in 2012), that Dr. Booth is looking at the wrong test. The "interest coverage ratio" of 2.0 to which Dr. Booth (and now AMPC/BCOAPO) refers – which is related to securities regulation and is filed on SEDAR – is not the same as the debt issuance coverage test in FEI's Trust Indenture.[155] FEI's debt issuance coverage test under the Trust Indenture has always been greater than 2.0 at the time of issuance, which is why FEI has been allowed to issue Medium Term Notes (MTN) in past years. The ratio that Dr. Booth appears to be referencing does not include the adjustments that are specifically contemplated under the Trust Indenture. Neither AMPC/BCOAPO, nor CEC, has even acknowledged FEI's evidence or submissions in this regard.

105. Dr. Booth admitted in his evidence: "I don't know why there is a different approach between FEI's statutory filing and its current evidence."[156] FEI **does** know why there

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[150] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 7.

[151] CEC Submission, paras. 335-336; AMPC/BCOAPO Submission, pp. 66-67.

[152] AMPC/BCOAPO Submission, p. 66.

[153] Exhibit B-7, AMPC-FEI IR 1.11.

[154] Exhibit B-16, FEI Rebuttal Evidence, pp. 10 and 11.

[155] The Trust Indenture test is referred to by FEI in Section 6.3, pp. 27-31 of the Application.

[156] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 86, footnote 57.

is a difference. FEI did not need to cross-examine Dr. Booth on the application of its own Trust Indenture.

106. AMPC/BCOAPO's reliance on Dr. Booth's evidence on the Trust Indenture is a significant shortcoming in their position. Without a proper understanding of the Trust Indenture, Dr. Booth would not have been able to assess his recommended ROE and common equity ratio against the capital attraction element of the Fair Return Standard. FEI outlined in its Rebuttal Evidence how debt issuance capacity may be significantly constrained in a period of higher debt capital requirements if Dr. Booth's recommended ROE and deemed equity were to be adopted.[157] An increase in equity and allowed ROE, as proposed, would be reasonable to support issuance capacity going forward.

D. AMPC/BCOAPO'S SUBMISSION ON INTRODUCING PREFERRED SHARES

107. AMPC/BCOAPO state: "…if it is necessary that FEI have more 'equity' to meet credit metric requirements AMPC/BCOAPO supports the Board (sic) requiring FEI to issue preferred shares rather providing common shareholders with excessive returns or an overly thick common equity ratio."[158]

108. AMPC/BCOAPO have not presented sufficient evidence in this proceeding for the Commission to be able to properly assess the ramifications of mandating the introduction of preferred shares. Interveners (AMPC/CEC) had put forward the same proposal in the 2009 proceeding, and the Commission did not accept it. In the 2009 ROE Decision, the Commission specifically addressed the issue in its Decision. It recounted FEI's evidence regarding the inefficiencies of preferred shares, and determined that FEI's capital structure should remain in the form of debt and common equity.[159] The Commission should again reject the proposal.

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[157] Exhibit B-16, FEI Rebuttal Evidence, pp. 11-12.

[158] AMPC/BCOAPO Submission, p. 64.

[159] 2009 ROE Decision, p. 36.

PART SIX: THE APPROPRIATE ROE FOR FEI

109. In this Part, FEI responds to the main submissions of AMPC/BCOAPO and CEC on ROE. FEI submits that the following submissions reinforce why FEI's request should be approved.

A. USE OF MULTIPLE MODELS

(a) AMPC/BCOAPO On the CAPM

110. AMPC/BCOAPO have cited Dr. Booth, past decisions of the AUC and NEB, and Levy & Roll in support of the theoretical validity of the CAPM.[160] The CAPM is a valid and widely used model, but it is not without its shortcomings. This Commission, along with the Brattle Group (its consultant in the GCOC Proceeding), has recognized that there are theoretical and practical challenges with the CAPM. Both experts in this proceeding agree that the current low interest rate environment makes the traditional CAPM produce unreasonably low results.[161] Levy & Roll confirmed the unreliability of the CAPM in a low interest rate environment as exists today.[162]

(b) Alternatives to the CAPM

111. AMPC/BCOAPO[163] lauds Dr. Booth for producing a new Appendix E on alternatives to the CAPM and empirical research into their validity and usefulness. They suggest that "these models do not suffer the 'under estimation' bias claimed for the CAPM for low risk stocks while their fair rate of return estimates are very similar to those of the CAPM." This argument is a "red herring". Although Dr. Booth has provided a good deal of information on alternative models to the CAPM, particularly the Fama-French model, he has not incorporated them into his analyses. He does not "support the use of the Fama-French model", stating that he tends "to be in the camp that believes it is the result of data mining with no firm

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[160] AMPC/BCOAPO Submission, pp. 38-39; CEC Submission, para. 239.

[161] See the discussion in FEI Final Submission, para. 178.

[162] See FEI's Final Submission, para. 181.

[163] AMPC/BCOAPO Submission, p. 39.

theoretical basis" and "would not recommend its use in a Canadian context for a regulated utility."[164]

(c) AMPC/BCOAPO Critique of DCF

112. AMPC/BCOAPO maintain that "DCF analysis should provide a supportive check on CAPM estimates, but the Commission should be cautious not to rely solely on it without considering the constraints that have to be imposed on the forecast growth rates."[165] They point to a 2009 AUC decision as support for the potential unreliability of DCF growth rates. However:

(a) First, this Commission has previously identified issues with the CAPM and has given significant weight to the DCF model in the last two cost of capital proceedings.

(b) Second, it is self-evident that the AUC's statement "DCF growth estimates that exceed the expected growth in GDP over the long run are unrealistic" is a reference to the constant growth DCF model, which assumes analyst forecast growth rates continue in perpetuity. Mr. Coyne relied on multi-stage DCF model results for his utility proxy group, not constant growth DCF results, because this Commission had expressed similar concerns in the GCOC Stage 1 Decision. The multi-stage DCF model addresses the issue identified by the AUC by using the GDP growth rate after the initial years.[166] The AUC has concluded that "…a multi-stage DCF analysis that adjusts the long run growth expectations to a reasonable level can provide some guidance to the Commission."[167]

[164] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), Appendix E, p. 21.

[165] AMPC/BCOAPO Submission, p. 40-41.

[166] See FEI's Final Submission, para. 206 for further discussion.

[167] Alberta Utilities Commission, *2009 Generic Cost of Capital*, Decision 2009-216, November 12, 2009, para 269.

113. FEI addressed Dr. Booth's arguments about analyst bias in paragraphs 207 to 213 of its Final Submission. There is no evidence to support Dr. Booth's contention of the existence of analysts' bias.

(d) CEC's Approach of Placing Less Weight on All Models

114. CEC, citing Dr. Booth, advocates that the Commission move away from relying on empirical outputs of any models in light of current market conditions. CEC states, for example:

> 5. Dr. Booth testified that this is the most difficult time for providing ROE estimates compared to any other time.[3] In the 30 years he's been testifying he doesn't think he's been in a situation where there has been so much uncertainty surrounding the use of standard estimation models.[4] There is unprecedented activity in the economy and unusual activity in capital markets that directly affect risk premiums.[5] He believes that the Commission should be placing less weight on the models, and more weight on their judgement.[6]

Dr. Booth's view that it is "a difficult time for providing ROE estimates" is shaped by his general preference for the CAPM. The CAPM is directly affected by the low interest rates because long Canada bond yields are a direct input in the model, and the empirical evidence as well as intuition is that the traditional CAPM does not produce reliable estimates in a very low interest rate environment. While current market conditions might require approaching the CAPM/Risk Premium Model estimates with greater caution, the same does not hold true for the DCF model. The reliability of the DCF model is not affected by low interest rates.[168] The DCF model incorporates more company specific observable inputs, does not use bond yields as an input, and is empirically more reliable in the present circumstances. These facts speak to putting more weight on multi-stage DCF results, i.e., doing what the Commission did in 2009 and what the FERC does routinely, not dispensing with empirical analysis altogether.

[168] Tr 2, 428, l. 12 to 429, l. 7 (Coyne).

115. CEC paraphrases Dr. Booth as having suggested that the CAPM model and DCF model "both have problems when used mechanically during a period of very high or low real Canada bond yields."[169] CEC also states: [170]

> Dr. Booth rejects the DCF approach because it is prone to errors and coming up with growth estimates is incredibly difficult. In particular, growth estimates for individual companies are very unreliable although DCF growth estimates for the market may be valid. He indicates that it fell out of favour with regulators.

Dr. Booth did not give evidence that DCF is producing unreliable estimates due to low interest rates; rather, he argued that analyst growth rates were biased.[171] Dr. Booth was also adamant that his comments on DCF "falling out of favour with regulators" related to the 1990s, not present day.[172] The DCF model, applied to utility proxy companies, remains just as reliable today as it had been in 2009 when the Commission had given primary weight to it. FEI submits that the model should inform the Commission's analysis.

116. CEC cites Dr. Booth's statement that "DCF and CAPM are just two ways of looking at exactly the same number. They should come up with exactly the same number if the analysis is done properly."[173] CEC also "finds it of concern that Mr. Coyne's DCF model provides for a higher ROE using the Canadian proxy group (9.82%) than it does for the US (8.89%) whereas his CAPM model results in a higher ROE for the US group (10.08%) than it does for the Canadian proxy group (9.08)."[174] It is true that the DCF and CAPM are two tests that attempt to derive the same required return on equity investment, but there is no reason to expect that these tests, in practice, will produce identical results. The models come at the solution from two different directions, and each test employs multiple independent assumptions. (Using CEC's example, the Canadian proxy group has higher dividend yields and growth rates than the

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[169] CEC Submission, para. 9.

[170] CEC Submission, para. 62.

[171] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), Appendix D, p. 13.

[172] Exhibit C7-11, p. 1.

[173] CEC Final Submission para. 69.

[174] CEC Final Submission para. 71.

U.S. proxy group, yielding its higher DCF results.[175] Conversely, the U.S. proxy group has higher betas than the Canadian proxy group, yielding its higher CAPM results.[176]) As Mr. Coyne explains: "No model can exactly pinpoint the correct return on equity, but rather each model brings its own perspective and set of inputs that inform the estimate of ROE."[177] This is why it is important to perform multiple tests of ROE to establish a range of reasonable returns.

117. CEC suggests that, while DCF modelling of utilities is unreliable, Dr. Booth's use of DCF estimates "to explain why the CAPM model is currently giving low estimates" is appropriate.[178] The Commission should question the usefulness of using DCF analysis of the market to rehabilitate Dr. Booth's Risk Premium Model in circumstances where (1) Dr. Booth has lost confidence in the all-important "Operation Twist" adjustment, and (2) the DCF model as applied to utility proxy companies is every bit as reliable as it was in 2013 (when the Commission gave it equal weight) and 2009 (when the Commission gave it primary weight).

B. US DATA COMPARABILITY

(a) AMPC/BCOAPO's Argument For An Adjustment to U.S. Results

118. AMPC/BCOAPO, at pages 41 to 44, argue that there should be a significant adjustment to U.S. results. FEI's Final Submission anticipated and addressed their arguments starting at paragraph 198. The only additional point to be made is this: AMPC/BCOAPO note the fact that the Commission had made an adjustment in 2009 and urge the Commission to make the same type of adjustment here. While it might have made sense for AMPC/BCOAPO to make this argument in the GCOC proceeding when Dr. Booth had made an adjustment, Dr. Booth did not adjust his own results this time.[179] His traditional justification for a downward adjustment – regulatory risk differences – no longer holds true. Moody's now equates the

[175] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Exhibit JMC-7, Schedules 1-2.

[176] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Exhibit JMC-5, Schedule 1.

[177] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 34-35.

[178] CEC Submission, para. 107.

[179] FEI Final Submission, para. 201.

regulatory risk in both countries.[180] Dr. Booth has also conceded that the market risk premiums in the U.S. and Canada are essentially the same now.[181] While Dr. Booth reintroduced the possibility of an adjustment during cross-examination, his renewed interest in an adjustment cannot be reconciled with his own analysis. Further, as described in paragraph 32 above, Mr. Coyne's analysis shows comparable A rated utility bond yields in Canada and the U.S. are within 11 basis points. There should be no adjustment to U.S. data.

(b) CEC's Argument For An Adjustment to U.S. Results

119. CEC "agrees that the Commission should consider the evidence derived from the use of US data", but "recommends that the Commission should give US data less weight than Canadian data or assess an appropriate adjustment based on the inherent differences between US utilities and Canadian utilities."[182] In support of this position, CEC cites Dr. Booth's evidence on the relative size of utilities in the U.S. and Canadian samples, with the market capitalization of the U.S. companies averaging $3.49 billion and the Canadian companies averaging $14.8 billion. CEC suggests that a small firm premium could be in play in the U.S.[183] FEI submits that an average market capitalization of $3.49 billion for the U.S. proxy group companies hardly qualifies as a small firm. Moreover, the U.S. proxy group company betas are very tightly clustered in a range of 0.69 to 0.81,[184] despite the large variation in asset size in the U.S. proxy group (approximately $5.8 billion between the largest and smallest companies).[185] This suggests that, for these companies, the size is not a concern.

120. In any event, characterizing the U.S. companies as small firms that are subject to a size premium would logically suggest an upward adjustment to the calculated ROE for FEI as well, since FEI's market capitalization is more consistent with the U.S. utilities. CEC's argument that one can ignore FEI's smaller market capitalization on the basis that it is not traded, and

[180] FEI Final Submission, para. 201(d).

[181] FEI Final Submission, para. 201.

[182] CEC Submission, para. 87.

[183] CEC Submission, para. 166.

[184] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Exhibit JMC-5, Schedule 1.

[185] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Appendix A, pp. A57-A87.

instead look to Fortis Inc.'s market capitalization, contradicts the Stand-Alone Principle. The Stand-Alone Principle – which is accepted by the Commission[186], other regulators,[187] and both experts in this proceeding[188] – provides that utilities must be regulated as if they were raising capital on their own business and financial characteristics.[189] The Principle is what necessitates selecting a proxy group with like characteristics (size, regulated operations, credit rating, etc.) to FEI.[190] The U.S. proxy group is closer in size and operating characteristics to FEI than is the Canadian proxy group. The U.S. results are meaningful, without adjustment.

C. CAPM / RISK PREMIUM MODEL – RISK FREE RATE

(a) Approaches to Normalizing the Risk Free Rate in Abnormal Market Conditions

121. AMPC/BCOAPO acknowledges that the risk free rate requires adjustment for "the impact of bond buying in the United States and elsewhere" and that "risk premium models are currently giving unreasonably low estimates". However, they maintain that Mr. Coyne's approach to addressing this issue (using a three year long-Canada bond yield forecast) "is inappropriate and contradicts long standing regulatory policy in Canada"[191] since this "is effectively a one year test period". They state that "large numbers of investors" must be expecting interest rates not to increase or "they would never have invested".[192] CEC characterizes Mr. Coyne's explanation of why he used the average of 2016 to 2018 as "more reflective of a rationale to massage his model than it is indicative of a standardized methodology, and further that it would be quite unreasonable to utilize a three year average for a 1 year rate."[193] These arguments gloss over (1) the rationale for Mr. Coyne's use of the three year long-Canada bond yield forecast, (2) the fact that both experts agree the massive

[186] GCOC Stage 1 Decision, p. 100.

[187] Tr 1, 141, ll. 7-17 (Coyne).

[188] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 11-12; Tr 2, 651, l. 15 - 652, l. 20 (Booth).

[189] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 11-12.

[190] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 13.

[191] AMPC/BCOAPO Submission, p. 7.

[192] AMPC/BCOAPO Submission, p. 7.

[193] CEC Submission, para. 128.

bond buying is being done by central banks, not investors, and (3) the fact that both experts end up in a similar place on the risk free rate using different methodologies.

122. Mr. Coyne's forecast of the risk free rate is not tied to a specific period, and is not assuming a three year test period as AMPC/BCOAPO suggest. Mr. Coyne uses the forecast long Canada bond yield to establish a forward-looking (normalized) bond yield that anticipates changes in the long Canada bond over the next few years, while reflecting the long-term perspective of the utility shareholder. This is the preferred indicator of the risk-free rate, particularly in the face of dynamic and abnormal market conditions. Mr. Coyne elaborated at the hearing:[194]

> ...the approach that I take is to look to a consensus forecast, and to see what looks like a return to something that's in equilibrium. Just as this commission did in 2012, it made a determination that there should be a floor of the risk-free rate, on a judgement that needed to be something that at least looked like an equilibrium risk-free rate, in order for it to be sensible for a cost of equity determination.
>
> So that's the very same logic here. The difference is I am not trying to estimate it myself. I am looking at this consensus forecast and I am looking at the shape of it. Because it flattens out once you get to 2018. So it tells me that in that range it gets you to something that looks like an equilibrium or more normalized level of risk free bond yield. So, that's the logic. I'm not trying to pinpoint one year, or three years for that matter.

123. Dr. Booth has also normalized his risk free rate. He just performs his normalization in a different way from Mr. Coyne – i.e., by starting with a 2016 forecast that he acknowledges to be too low and adding his "Operation Twist" adjustment. Mr. Coyne's three-year forecast bond yield of 3.68 percent is not that different from (and, indeed, less than) Dr. Booth's adjusted/normalized risk free rate of 4.05 percent (representing Dr. Booth's risk-free rate adjusted for "Operation Twist").

[194] Tr 1, 186, l. 22 to 187, l. 13 (Coyne).

124. AMPC/BCOAPO is asking the Commission to infer from the significant bond buying that has taken place that a "large numbers of investors" are expecting interest rates not to increase in the manner forecasted by Mr. Coyne.[195] Mr. Coyne is using Consensus Forecasts, which is the standard source used by the Commission in the past. That forecast is aligned with neutral Canadian nominal interest rate[196] range of 3 to 4 percent[197] and the RBC forecasts[198] that were provided in Dr. Booth's evidence. The inference AMPC/BCOAPO is asking the Commission to make is contradicted by the evidence of their own expert, Dr. Booth, who repeatedly emphasized that it is central banks that are the significant bond buyers.[199] That is the whole point of his "Operation Twist" adjustment.

125. AMPC/BCOAPO recommends "removing Mr. Coyne's three year interest rate suggestions and replacing it with a combination of the 2016 LTC rate and the Commission's 2013 Automatic Adjustment Mechanism."[200] In light of Dr. Booth's admission that the 2016 Long Canada bond yield is "at least" 130 basis points too low, AMPC/BCOAPO's recommendation would dramatically understate the risk free rate in 2016, let alone in future years where rising interest rates are expected. The 3.8 percent floor in the AAM would only compound the unfairness of applying the AAM to a base year that is so significantly understated.

126. CEC suggests that "forward looking expectations are already captured in the current long bond yield."[201] Although it is true that current bond yields incorporate forward expectations of interest rates, it is also true that interest rates are constantly shifting due to changing economic conditions, and the interest rate at a single point in time may not be reflective of future market conditions. Mr. Coyne explained in his response to AMPC IR 1.2.6:

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[195] AMPC/BCOAPO Submission, p .7.

[196] Dr. Booth defined neutral interest rate as the one that is neither designed to slow down nor stimulate the economy: Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 24.

[197] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 24, ll. 3-7.

[198] Exhibit C7-7-2, Evidence of Dr. Booth (Corrected), p. 23, ll. 2-9.

[199] See FEI Final Submission, paras. 73-77.

[200] AMPC/BCOAPO Submission, p. 7.

[201] CEC Submission, para. 133.

"the yield curve is not static; it shifts over time in response to macroeconomic conditions, the supply and demand for bonds of varying terms, money supply and other factors. That is why it is common practice in Canada and the U.S. to consider forecasts of long-term bond yields, especially when these factors are in a state of flux, as they are in North America."[202]

127. CEC states that "there is no reason to presume that it [the market] will return to a normalized state in the immediate future. It is more likely that the economy will stay in an abnormal and significantly unpredictable and difficult to forecast state for the next few years."[203] It is the very fact that the market will not return to a normalized state in the immediate future that makes it appropriate to normalize the risk free rate by using a 3-year forecast for the long Canada bond yield.[204]

128. CEC states that it "does not accept Mr. Coyne's contention that investor perspectives are longer term because it is not possible to know whether an investor is in for 1 year or 10 years."[205] In fact, we know both the identity of the investor and the term of the investment. The investor is FEI. FEI is investing in long-term assets that have a service life well in excess of 10 years. The three year forecast for the long Canada bond, based on Consensus Forecasts, is the appropriate measure. It reflects a risk-free rate for a long-term investor, normalized in an objective manner, to address the concerns of utilizing a current long-term bond yield that is abnormally low.

(b) Operation Twist Recalculation

129. FEI has replied to intervener arguments on "Operation Twist" in Part Three, Section G of this Reply Submission.

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[202] Exhibit B-8, AMPC-FEI (Concentric) IR 1.2.6.

[203] CEC Submission, para. 139.

[204] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 25.

[205] CEC Submission, para. 144.

D. CAPM / RISK PREMIUM MODEL – MARKET RISK PREMIUM (MRP)

(a) Use of Income Return on Bonds vs. Total Returns

130. AMPC/BCOAPO correctly identify that there is a difference of opinion as between Dr. Booth and Mr. Coyne regarding whether, in estimating the historic MRP, it is appropriate to use the total return on long Canada bond yields or the income return on long Canada bond yields. Dr. Booth uses the former, while Mr. Coyne uses the latter. AMPC/BCOAPO states that using income returns is wrong because "it compares distinctly different return types". They state that, in the 2012 proceeding, "Ms. McShane, unlike Mr. Coyne in this proceeding, at least showed the Risk Premium calculated over both bond total returns and bond income returns…"(Emphasis in original).[206] CEC made a similar argument.[207] FEI submits that Mr. Coyne has used the appropriate approach, and Dr. Booth's approach understates the MRP.

131. Mr. Coyne explained in his evidence why the use of income returns is appropriate. In short, the income returns represent a truly risk free rate, removing the components of the government bond total return that are not "risk free." Ibbotson and Duff & Phelps, whose data Mr. Coyne relies upon, provide risk premium calculations based on the income portion of the bond yield. The Ibbotson SPVI Valuation Handbook, which Mr. Coyne characterized as "probably the bible of calculating long-term stock market returns," explains the importance of looking at income returns as follows:[208]

> The total return is comprised of three return components, the income return, the capital appreciation return and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow, or in this case the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuation in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. And they conclude

[206] AMPC/BCOAPO Submission, p. 8.

[207] CEC Submission, para. 183.

[208] Exhibit B-19, p. 3 of PDF; Tr 1, 198, l. 16 - 199, l. 10 (Coyne).

> on this topic, the income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.

132. Ms. McShane may have presented the information on total returns for comparative purposes in the GCOC proceeding, but (despite AMPC/BCOAPO's recollections to the contrary during the oral hearing[209]) she used income returns just like Mr. Coyne. Ms. McShane had stated:[210]

> The bond income return reflects only the coupon payment portion of the total bond return. As such, the income return represents the riskless component of the total government bond return. The bond income return is similar to the bond yield. The bond total return includes annual capital gains or losses and reinvestment of the bond coupons. In principle, using the bond income return in the calculation of historical risk premiums more accurately measures the historical equity risk premium above a true risk-free rate.

(b) MRP Should Currently Be Higher Than Historic Average

133. AMPC/BCOAPO take issue with Mr. Coyne's prospective MRP estimates. They state that his prospective return forecasts "are substantially higher than achieved returns and higher than anyone's forecast, dragging his average MRP way up. If there ever was a basis for using high prospective MRPs in one's analysis it is not now, in the midst of a slow recovery."[211] AMPC/BCOAPO's argument is circular. The prospective MRP estimate is higher than the historic MRP due to the very same market conditions (i.e., low long Canada bond yields) that AMPC/BCOAPO characterize as a "slow recovery" and point to as a reason to use a low MRP in the CAPM. FEI described in paragraphs 230-231 of its Final Submission the evidence confirming that the MRP is higher in a low interest rate environment.

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[209] Tr 1, 196, l. 12 to 197, l. 14.

[210] Exhibit C7-12 p. 121.

[211] AMPC/BCOAPO Submission, p. 9.

134. CEC's argument in paragraph 180 is based on a misunderstanding of Mr. Coyne's evidence. CEC states:

> 180. The CEC submits that the evidence that Mr. Coyne is presenting is that the Commission should include higher values for both an increasing long bond yield (which is well-known to correlate with interest rates) as evidence to establish a higher risk free rate, plus a significantly increasing market premium in the future, even though they are known to be inversely related.

Mr. Coyne's use of a forecast long Canada bond yield, rather than the current bond yield, in calculating forward looking estimates of the MRP had the effect of **reducing** the MRP estimate. Mr. Coyne explains:[212]

> My ex-ante risk premium is based on capital market conditions on August 31, 2015, using forward projections of the return on the relevant market indices less the risk-free rate. I have used a forecast of the 30-year bond yield in my calculation of the ex-ante risk premium, which arguably lowers and moderates the risk premium result by the difference between the 30-year bond yield at August 31, 2015 (2.23%) and the forecast bond yield I have used to calculate the forward-looking market risk premium of (3.68%).

Mr. Coyne's test of the market risk premium using regression analysis was also based on the normalized level of interest rates (3.68 percent), not the spot yield (2.23 percent). The use of a normalized interest rate level similarly served to **reduce** the MRP and avoid any double counting of the current low interest rate environment.

135. CEC's description of Mr. Coyne's regression analysis in paragraphs 186 to 201 is inaccurate and CEC is drawing the incorrect conclusions from Mr. Coyne's evidence. Each of the regressions Mr. Coyne was asked to perform by CEC continues to corroborate his 7.6 percent MRP and reflects the impact of the current low interest rate environment on the MRP.

(a) Mr. Coyne's initial regression analysis was used as a corroborating analysis to support his risk premium estimate of 7.6 percent. It was not used as a point

[212] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 47.

estimate and did not enter into his risk premium calculation. Mr. Coyne's initial regression analysis resulted in a market risk premium of 10.09 percent, which, though significantly higher, did corroborate the use of an MRP above the historical average. It also showed that the low interest rate environment called for a higher MRP.

(b) At CEC's request, Mr. Coyne refined his criteria by removing outliers greater than two standard deviations from the predicted MRP. The result was a stronger regression and an MRP result of 8.5 percent. This result also corroborated his risk premium estimate of 7.6 percent.[213]

(c) Even when Mr. Coyne was asked to include all data points in the regression, i.e., no outliers removed, the result was 7.5 percent. This result also corroborated Mr. Coyne's risk premium estimate.

136. CEC's suggestion that Mr. Coyne deliberately selected outliers with the objective of inflating his regression results is without merit. Mr. Coyne explained in CEC IR 2.46.8.2 and IR 2.46.8.3 that he removed the obvious outlier for the 2008 recession and did not go through the more rigorous process to identify other outliers. All of the additional regressions performed by Mr. Coyne at CEC's request corroborated, not undermined, his MRP estimate of 7.6 percent.

137. Mr. Coyne's risk premium regressions were based on 40 years of data, and provide a good indication of how interest rates and market returns have interrelated over the last four decades. CEC's contention at paragraph 203 that because Mr. Coyne's initial regression provided a 2.39 percent differential over his recommended MRP, a revised regression should result in a similarly revised MRP, is creative – but baseless. This logic presumes that Mr. Coyne started with a regression result of 10.09 percent and subtracted 2.39 percent to arrive at his 7.6 percent. In actuality, he arrived at his MRP estimate first and used

[213] Exhibit B-12, CEC-FEI IR 2.46.8.

regression to test its reasonableness. Because the regression result would have supported an even higher MRP, Mr. Coyne could be confident his MRP estimate was not too high. The revised regression results that Mr. Coyne prepared in response to CEC IRs provide added confidence that the MRP of 7.6 percent is reasonable.

(c) Dr. Booth's Use of Fernandez Study to Estimate MRP

138. AMPC/BCOAPO relied primarily on a Fernandez Survey of equity returns and market risk premiums to support their market risk premium range of between 5.0 and 6.0%.[214] FEI's Final Submission addressed the shortcomings of the study, including the limited number of estimates provided for Canada and the wide dispersion of those estimates.[215] FEI adds that Professor Fernandez has also published a paper that critiques the CAPM model, characterizing it as an "absurd model", and specifically discusses the confusion around differing perspectives on the market risk premium (expected, historical, required, and implied) and how they are derived.[216] This would also appear to explain the wide range of estimates for the Canadian market risk premium from 4 to 12 percent in the referenced Fernandez Survey of equity returns.

(d) Pension Plan Expected Returns Have Limited Relevance

139. AMPC/BCOAPO maintain that the AON Hewitt and Mercer reports are important both for the absolute level of returns of the 2016 forecast and for the changes that have occurred since 2012.[217] CEC also cites these expected returns.[218] The pension plan investors' expected rates of return on equities, even when converted from geometric to arithmetic returns, should not be used in the assessment of FEI's requested ROE.

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[214] AMPC/BCOAPO Submission p. 50

[215] FEI Final Submission, paras. 236-238.

[216] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 36 (footnote 51).

[217] AMPC/BCOAPO Submission, p. 51.

[218] CEC Submission, para. 267.

Consensus on Need to Convert to Arithmetic Returns

140. The equity return forecasts in the pension reports are geometric returns. Dr. Booth and Mr. Coyne agree (as does AMPC/BCOAPO) that arithmetic returns are the relevant returns for estimating discount rates and cost of capital.[219] There is also consensus on the calculations to convert from geometric returns to arithmetic returns.[220] As an example, if forecasted 7.0 percent geometric return on Canadian equities provided by the actuary (shown in the response to BCUC IR 1.3.1) were shown on the arithmetic basis, the equivalent return expectation would approximately 9.0 percent.

Forecast Expected Returns Versus Required Returns (Opportunity Cost)

141. In the GCOC Stage 1 Decision, the Commission determined that actuarial expectations were not conservatively biased and were used to fairly assess pension plan liabilities.[221] FEI agrees with the Panel's decision that these expected returns are appropriate for pension plan liabilities. However, in the context of cost of capital determination, it is the required return and not the expected return that is sought. Mr. Coyne explained that expected returns are a forecast of future performance, whereas required returns represent an opportunity cost. There are instances where regulatory commissions, recognizing this difference between expected and required return, have decided against using utilities' pension forecast expected returns as a proxy for determination of their cost of capital.[222]

Forecast Expected Returns Estimated for Pension Funds Are Not Aligned With Fair Return Standard

142. The comparable investment element of the Fair Return Standard requires that overall return on capital be comparable to the return available on capital invested in like-risk enterprises. Mr. Coyne explained that "To determine the estimated return of a utility one must

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[219] The appropriateness of using arithmetic returns for estimating a utility's cost of capital is also corroborated in Roger Morin's *New Regulatory Finance*, discussed in FEI's response to Exhibit B-9, BCUC-FEI IR 1.3.2 and Exhibit B-10, BCUC-FEI 2.47.1.

[220] Exhibit B-10, BCUC-FEI IR 2.47.3.1.

[221] GCOC Stage 1 Decision, p. 61.

[222] Exhibit B-10, BCUC-FEI IR 2.49.1.

look to like-risk companies and not to a portfolio of assets that bear no resemblance to those of the utility".[223] He indicated that: "The market index, comprised of companies that span the entire risk spectrum, would not be an appropriate comparator or basis upon which to estimate the required return for a regulated utility." As such, the expected returns forecasted by Mercer and Aon Hewitt cannot be used as a proxy for FEI's cost of capital. In any case, converting Mercer's equilibrium return for U.S. defensive equity forecast[224] (which could be expected to include some utility stocks) to an arithmetic return, and adding the 50 basis points for flotation costs, would result in an expected return closer to Mr. Coyne's recommended allowed ROE than to Dr. Booth's recommendation.[225]

Pension Funds Have Different Business Objectives Than Utility Investors

143. Mercer's and Aon Hewitt's investment businesses are primarily focused on pension funds' sponsors. Their reports are also primarily designed to respond to the specific needs of those clients.[226] Mr. Coyne spoke with representatives of both Aon Hewitt and Mercer to better understand their reports. He learned that these reports are primarily produced "for purposes of performing an actuarial valuation" and are "certainly not designed as a cost of capital tool for a regulated utility".[227] Mercer's report explicitly states that the report is for actuarial purposes.[228]

144. Pension funds have very different business objectives and risk profiles from a corporation or a utility, which make the various long-run pension asset returns forecasted by actuarial firms inappropriate for use in the determination of FEI's own ROE. Published forward-looking return information represents one component of a comprehensive funding plan derived from both funding policy and return expectations. Pension plan investment governance focuses on optimizing value of its assets and providing stable cash flows to fulfill funding

[223] Exhibit B-10, BCUC-FEI IR 2.49.1.
[224] Tr 2, 277, l. 8 - 278, l. 13 (Coyne).
[225] Tr 2, 276, l. 10 - 278, l. 13 (Coyne).
[226] Tr 2, 257, ll. 10-13 (Coyne).
[227] Tr 2, 247, l. 8 - 248, l. 13 (Coyne).
[228] Tr 2, 256, ll. 17-26 (Coyne).

obligations within specific risk thresholds. The pension plan asset allocation and contribution policies mean that forward looking pension return estimates do not provide real information on expected returns.

145. This is reflected in a recent article, "What is a pension plan's return objective? Well, it's not ELTRA" published by Bob Collie,[229] June 4, 2014, in which the author stated:

> In practice, the actual target return from the investments is derived in conjunction with a funding (contribution) policy. And it is generally implicit. That is to say, a decision on asset allocation policy is made based on expected contributions (or surplus) rather than directly based on expected return. But the return target is there nonetheless – typically somewhere around 5-8% in our experience.[230]
>
> (Emphasis added in IR Response.)

Response to AMPC/BCOAPO's Directional Argument

146. AMPC/BCOAPO point to the fact that the Pension Reports report a lower forecast market return today than in the previous version of the reports. FEI submits that the Commission should not give weight to the forecasts or the directional change. The forecasts presented in these reports have proven to be inaccurate when compared to actual market returns. The inaccuracy of Mercer's Fearless forecast was a factor in Mercer's decision to discontinue the report altogether.[231] A comparison of 2011 Fearless forecast with 2011 actual return for instance, indicates that the forecast was positive 8.5% while the actual was negative 8.7%, which demonstrate a clear directional mismatch. Similarly, while both TSX and S&P 500

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[229] As described in the IR response, the author, Bob Collie is chief research strategist for Russell Investments' Americas Institutional business. He is responsible for the strategic advice delivered to the various parts of Russell's institutional client base, working with the manager research team, product groups and other research efforts across Russell. Bob joined Russell in 1994 as a consultant in the U.K., and has worked for Russell in the U.S. since 2002. He previously worked for William M. Mercer's actuarial and investment practices.

[230] Exhibit B-9, BCUC-FEI IR 1.40.2.

[231] Tr 2, 271, l. 16 - 272, l. 1 (Coyne).

forecast for 2011 were lower than 2014 forecasts, the actual values were higher in both instances.[232]

147. In any event, as discussed elsewhere in this Reply Submission, the pension plan information considered in its totality (MRP and beta) yields an outcome that is much closer to Mr. Coyne's recommendation than Dr. Booth's recommendation.

(e) Use of Constant Growth DCF Model For Estimating MRP is Appropriate

148. Mr. Coyne used a multi-stage DCF to derive a **utility** DCF (i.e., applied to proxy companies to directly derive a utility ROE), but used the constant growth DCF model to derive a **market** DCF (i.e., applied to the market, rather than proxy utilities) for determining the market risk premium in the CAPM analysis. AMPC/BCOAPO argue that Mr. Coyne should also have used the multi-stage DCF in deriving **market** DCF results. They characterize the result of the multi-stage market DCF that Mr. Coyne was asked to file by way of undertaking[233] as being "of more fundamental significance" and supportive of Dr. Booth's view that the market risk premium is between 5.0 and 6.0 percent.[234] FEI submits that (1) the constant growth DCF model is more appropriate when applied to measure the forward looking return **on the market,** and (2) deriving the CAPM MRP using the multi-stage DCF model, as suggested by AMPC/BCOAPO, produces incongruous results.

Using the Constant Growth DCF Model Makes Sense When Determining MRP

149. Mr. Coyne's evidence is that the constant growth DCF is the correct approach for measuring the forward-looking return **on the market index**. He states that the multi-stage approach should be applied directly to the utility proxy group as he did in his primary analysis, not to the market.[235] Mr. Coyne's evidence stands to reason.

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[232] Exhibit C7-12, pp. 217 and 203.

[233] Tr 3 486, l. 9 to 490, l. 3 (Coyne).

[234] AMPC/BCOAPO Submission, pp. 9 and 52.

[235] Tr 3 489, ll. 20-26 (Coyne).

150. The common critique of the constant growth model when applied to a utility proxy group is that the growth rate of the utilities will ultimately exceed the **GDP** (i.e. economic, not market) growth. AMPC/BCOAPO have not identified any evidence to suggest that **market indices** cannot exceed the growth rate of the overall **economy** in the long-term. There is no reason to expect that this would be the case, given the composition of market indices. The S&P 500 and the S&P/TSX Composite Index are comprised of the largest companies on their respective exchanges, and are replaced by companies that no longer fit the criteria. The largest companies on the exchanges did not achieve their position by growing at the same rate as GDP.

151. The primary assumption of the multi-stage DCF model, that growth will moderate after the first five years, is not relevant to valuations of the market indices where companies are being continually substituted.

Multi-Stage DCF Produces Anomalous Results When Used To Estimate MRP

152. Mr. Coyne explained that the result of a multi-stage DCF calculation when applied to the market "yields an anomalous result, when indications are that the market risk premium is higher, when bond yields are as low as they are today".[236] The results of applying the multi-stage DCF model to the market indices are return estimates of 9.07 percent for the Canadian S&P/TSX Index, and 8.25 percent for the U.S. S&P 500 Index.[237] Subtracting the normalized forecast bond yields that Mr. Coyne used in his CAPM analyses (3.68 percent and 4.29 percent for Canada and the U.S, respectively[238]) would translate to *ex ante* risk premium estimates of 5.39 percent for Canada and 3.96 percent for the U.S. These calculated *ex ante* risk premium estimates are lower than historic averages,[239] a result which does not make sense in the current all-time low interest rate environment.

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[236] Tr 3 488, ll. 20-23 (Coyne).

[237] Tr 3 487, ll. 16-18 (Coyne).

[238] Representing the 3-year forecast by Consensus Forecasts for 2016-2018.

[239] Tr 3, 489, ll. 3-10 (Coyne).

153. The results are anomalous because Mr. Coyne has already introduced conservatism in to the historic MRP calculation by using a normalized risk free rate. As Mr. Coyne explained, his use of the 3-year forecast of the 30-year bond yield in his calculation of the *ex ante* risk premium "arguably lowers and moderates the risk premium result by the difference between the 30-year bond yield at August 31, 2015 (2.23%) and the forecast bond yield he has used to calculate the forward-looking market risk premium of (3.68%)."[240] This difference is 145 basis points. If this moderating factor were removed, and the August 31, 2015 spot 30-year bond yield were used, the risk premium estimates generated by the multi-stage DCF analysis would have been 6.84 percent for Canada and 5.41 percent for the U.S. These results are more in line with normal historical estimates.

154. There is a significant amount of evidence on the record, as well as past decisions of regulators, that the MRP should currently be even higher than the normal historical estimates. For instance:

(a) Mr. Coyne's evidence was that the market risk premium should be higher than the historical average when bond yields are low, which is the case at present.[241] The regression equation Mr. Coyne developed to test the relationship between the market risk premium and bond yields, suggested a market risk premium of 10.09 percent, when the long Canada bond yield is 3.68 percent.[242] Mr. Coyne's regression equation was developed using objective data, published by Ibbotson and Duff & Phelps for market returns and prevailing bond yield data.[243]

(b) The AUC recognized this conventional wisdom in its 2011 Decision, where it stated: "it would not be correct to assume that the currently expected market equity risk premium is necessarily equal to its long-term average value", concluding "that the expected market equity risk premium today **may be higher**

[240] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 47, ll. 13-17.
[241] Tr 3 488, l. 21 to 489, l. 3 (Coyne).
[242] Tr 3 489, ll. 4-9 (Coyne).
[243] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Exhibit JMC-6.

than its historic average, due to today's low interest rates."[244] (Emphasis added.)

(c) The OEB stated in 2009 that "the Board is concerned that CAPM, as applied by Dr. Booth, does not adequately capture **the inverse relationship between the ERP [Equity/Market Risk Premium] and the long Canada bond yield**. As such, the Board does not accept the recommendation that it place overwhelming weight on a CAPM estimate in the determination of the initial ERP."[245] (Emphasis added.)

155. Mr. Coyne was correct to use constant growth DCF for the market as a whole. That approach, unlike the approach of using multi-stage DCF to determine the market risk premium, provides a reasonable estimate of the forward looking market risk premium in the current low interest rate environment.

E. CAPM/RISK PREMIUM MODEL – RELATIVE RISK ADJUSTMENT (BETA)

(a) Betas Should Be Blume-Adjusted

156. AMPC/BCOAPO maintain that Dr. Booth's beta of 0.45 to 0.55 should be preferred to betas adjusted using the "Blume adjustment",[246] and that the "Blume adjustment" represents a "serious methodological error".[247] They characterize the difference between Mr. Coyne's and Dr. Booth's results as "not material and an irrelevant distraction made for other purposes".[248] Mr. Coyne has provided ample evidence to support the use of Blume-adjusted betas. FEI submits that the approach produces a more reasonable beta and should be preferred.

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[244] AUC 2011 GCC Decision, paras. 57-58. See also FEI Final Submission, para. 179.

[245] Full quote found at FEI Final Submission, para. 172.

[246] AMPC/BCOAPO Submission, pp. 8 and 46-48.

[247] AMPC/BCOAPO Submission, p. 48.

[248] AMPC/BCOAPO Submission, p. 48.

The Proper Characterization of the "Blume Adjustment"

157. AMPC/BCOAPO speak of "witnesses testifying on behalf of utilities to adjust 'raw' utility betas **to** the overall market mean of 1.0."[249] (Emphasis added.) They cite the Commission's GCOC Stage 1 Decision, in which the Commission similarly referred to "An adjustment of beta **to** the market average of one"[250] (Emphasis added.) They also include the following quote from a 2009 AUC Decision, which characterized the "Blume adjustment" as assuming that utility risk would equal the risk of the market over time: "Therefore the Commission rejects Mr. Coyne's beta results as unreasonably high, because he adjusted his beta estimates **on the assumption that they would revert to 1.00. In other words, his analysis assumes that in time, utilities would be as risky as the market as a whole**."[251] (Emphasis and double emphasis added.) These three quotations all refer to the Blume adjustment as if it is an adjustment **"to"** 1.0. It is not. The adjustment is directionally **towards** 1.0. Adjusting betas towards the market mean of 1.0 does not mean that there is an expectation that the betas will reach 1.0. The calculation performed gives 2/3 weighting to the raw calculated beta and 1/3 weight to the market mean of 1.0, so the adjusted betas using the standard Blume method will never reach one. The adjustment is greatest when beta is 0, and gradually decreases as raw beta moves closer to 1.0.

158. Mr. Coyne's adjusted betas are well below 1.0 (0.65 and 0.78 respectively for the Canadian and U.S. proxy groups).[252] In fact, Mr. Coyne's adjusted betas remain closer to the raw beta than to the market mean of 1.0.[253]

Additional Evidence That Blume-Adjusted Betas Are Most Appropriate

159. In the GCOC Stage 1 Decision, the Commission used a beta of 0.6, characterizing it as an "intermediate" beta (it was part way between Dr. Booth's beta 0.45-0.55 and the

[249] AMPC/BCOAPO Submission, p. 46.

[250] AMPC/BCOAPO Submission, p. 46.

[251] AMPC/BCOAPO Submission, p. 47.

[252] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 44, Table 6.

[253] See Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, Exhibit JMC-5, Schedule 2.

Blume-adjusted beta of 0.65),[254] finding that "none of the positions fully explain the beta value and therefore accepts an intermediate beta estimate of 0.6 representing the range of reasonable estimates presented."[255] There is, however, significant evidence on the record in the current proceeding to warrant placing greater weight on the Blume-adjusted betas, dispensing with the need to use the "intermediate" beta. The evidence that a higher, adjusted beta is appropriate includes:

(a) the Blume studies;[256]

(b) excerpts from Dr. Morin's textbook;[257]

(c) the Brattle Group Report;[258]

(d) the Fernandez studies;[259]

(e) the standard adjustment methodology employed by Value Line, Bloomberg and Merrill Lynch for equity return calculations;[260]

(f) Mr. Coyne's own study results confirm that raw betas, and even Blume-adjusted betas, are understated;[261]

(g) a list of additional studies that Mr. Coyne was asked to provide by way of undertaking;[262]

(h) Mr. Coyne's evidence that Blume adjusted betas are widely used and accepted by regulators;[263] and

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[254] Note that at p. 49 AMPC/BCOAPO says 0.6 is at the higher end of Mr. Coyne's beta range. In fact, 0.6 falls at the top end of Mr. Coyne's raw betas. The adjusted betas are higher.

[255] GCOC Stage 1 Decision, p. 64.

[256] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, p. 43, ll. 7-30.

[257] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 28, ll. 1-9.

[258] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 21, ll. 3-9.

[259] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 29, l. 1 to p. 31, l. 10.

[260] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 28, ll. 13-15.

[261] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 32, ll. 5-10.

[262] Exhibit B-31, FEI Undertaking No. 9.

(i) the betas used in the pension reports relied on by Dr. Booth as support for his MRP.

(b) Dr. Booth's Sources Support Mr. Coyne's Beta Estimate

160. FEI's Final Submission already addressed most of the evidence listed above (see paragraphs 239-247). FEI has focussed on the Fernandez study and the pension betas below only because AMPC/BCOAPO and CEC cite Dr. Booth's reliance on these sources for other aspects of his Risk Premium Model analysis, but they contradict his position when it comes to beta.

Fernandez Analysis Demonstrates Even Blume-Adjusted Betas Are Understated

161. Professor Fernandez's survey is the source of Dr. Booth's MRP, and Dr. Booth devotes considerable attention in his evidence to bolstering the credibility of Professor Fernandez's work. Dr. Booth does not discuss, however, Professor Fernandez's work relating to beta. Professor Fernandez's statistical analysis of beta demonstrates that raw (unadjusted) betas should not be used and that even the Blume-adjusted betas are too low. His findings with respect to beta included:

(a) "calculated [meaning "raw" or unadjusted] betas have little correlation with stock returns;"

(b) "beta =1 has a higher correlation with stock returns than calculated [i.e., raw or unadjusted] betas for many companies;" and

(c) "the relative magnitude of betas often makes very little sense: companies with high risk often have lower calculated betas than companies with lower risk."[264]

162. Dr. Fernandez goes on to show, based on correlations of the annual stock returns (1989 – 2008) of the Dow Jones companies measured against the S&P 500, that (1) beta

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[263] Tr 2, 231, ll. 6-13 (Coyne).

[264] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 29, l. 1 to p. 30, l. 29.

of 1.0 (i.e., the market beta) provides a higher correlation to returns than calculated (raw) betas; and (2) that betas adjusted towards the market mean of 1.0 (i.e., the "Blume adjustment") have a higher correlation than calculated betas. Based on these conclusions, the Blume-adjusted beta would logically also provide a better correlation to actual utility returns than beta adjusted to the grand mean of industry betas (another method cited by Dr. Booth).[265]

163. Mr. Coyne's own empirical analysis, presented in AMPC IR 1.5.4, confirmed that even Blume-adjusted betas understate utility equity returns.[266] Interveners did not challenge Mr. Coyne's methodology or the results of the analysis.

Pension Plan Studies Relied On By Dr. Booth Use Higher Betas

164. As discussed above in the context of the MRP, interveners cite pension reports filed by FEI as support for his MRP. FEI has made the point that the pension reports should not be used for that purpose. Nevertheless, if one were to use the MRP from those reports as the interveners suggest, it would be appropriate to look at the betas from those reports as well. The betas are consistent with those provided by Mr. Coyne.

(c) Circular Reasoning Underlies AMPC/BCOAPO's Argument on Beta

165. At the end of the day, AMPC/BCOAPO appeal to logic and intuition in support of Dr. Booth's beta, stating: "In AMPC/BCOAPO's submission, a beta of 0.45 to 0.55 is supported by the evidence and is entirely sensible: It recognizes that regulated utilities face roughly half of the risk faced by the market as a whole and the purpose of looking at beta." They also maintain that "Actual Canadian utility betas have not been anywhere near Mr. Coyne's estimates in decades, so it is difficult to see how this could produce a reasonable ROE for FEI." Circular logic underlies both of these arguments.

[265] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 31, ll. 6-10.

[266] Exhibit B-16, FEI Rebuttal Evidence, Rebuttal Evidence of Mr. Coyne, p. 32, ll. 5-10.

Circularity of Assuming that Utilities Are Half as Risky As the Market

166. The premise that "utilities face roughly half of the risk faced by the market as a whole" is an assumption AMPC/BCOAPO and Dr. Booth are making, not a fact. A pre-conceived notion about how risky utilities are relative to the market should not be the basis for determining beta. Rather, under the CAPM, the beta values are what tell the analyst (or in this case, the Commission) the systemic risk associated with a stock relative to the market. Individual betas for appropriately selected proxy companies should be calculated first, and properly adjusted, before reaching a conclusion on the proper relative risk adjustment for FEI.

167. The fact that utility stocks are less volatile than the market is not in dispute, but that only suggests that the beta should be less than 1.0. The Blume-adjusted betas are also below 1.0 (and will never reach 1.0). The Blume-adjusted betas suggest, however, that the utilities are not as low risk relative to the market as AMPC/BCOAPO and Dr. Booth are assuming. FEI submits that the Commission should give weight to the empirical output of a well-supported and widely used methodology.

Circularity of Relying on Raw Betas to Argue that Adjusted Betas Are Overstated

168. AMPC/BCOAPO are also employing circular reasoning in arguing that "Actual Canadian utility betas have not been anywhere near Mr. Coyne's estimates in decades, so it is difficult to see how this could produce a reasonable ROE for FEI." There is no dispute that actual (i.e. raw) Canadian utility betas are below Mr. Coyne's estimate, but one would expect raw betas to be consistently below adjusted betas. That is the mathematical result of the adjustment formula when applied to low beta stocks. The fact that raw betas are below adjusted betas does not say anything about whether raw betas need to be adjusted.

169. FEI submits that it is appropriate to adjust utility betas using the well-recognized and empirically sound "Blume adjustment". The evidence is that anything less will significantly understate beta and the utility required return.

F. DCF ESTIMATES

(a) Mr. Coyne Relied on Multi-Stage DCF Estimate

170. The section of AMPC/BCOAPO's submission devoted to "Comments on the DCF Estimates By Mr. Coyne"[267] is devoted in large measure to the constant growth DCF model, to which Mr. Coyne did not give weight in his utility DCF analysis. The constant growth DCF method is an appropriate and recognized method,[268] and the Commission gave primary weight to the results in 2009. However, since Mr. Coyne deferred to the Commission's GCOC Stage 1 Decision approach, AMPC/BCOAPO's submissions on this point can be set aside.

(b) Analyst Bias

171. AMPC/BCOAPO argue that analyst bias is present and that it affects Mr. Coyne's DCF results.[269] CEC adds that the bias is also implicit in Dr. Booth's 8.65 percent U.S. utility DCF based on five year growth forecasts, implying that Dr. Booth's results should also be lower.[270] FEI has addressed analyst bias in its Final Submission at paragraphs 207 to 213.

172. AMPC/BCOAPO have remained silent regarding the fact that this Commission has previously rejected Dr. Booth's analysis bias argument on three occasions. Instead, AMPC/BCOAPO suggest "The bias is also confirmed by the current record, where comparisons to the capital market reports by TD, AON Hewitt and Mercer show comparable or lower forecast returns for the market as a whole, than for Mr. Coyne's analyst forecasts for low risk utilities."[271] A fundamental problem with this argument is that AMPC/BCOAPO are confusing the growth rate for the **economy, i.e. GDP rate** (which is used as a growth rate in the final stage of the multi-stage DCF analysis), with the **forecast return for the market** as a whole (which has nothing to do with the multi-stage DCF applied to utilities). The typical criticism of constant growth DCF is that an individual company growth rate cannot be greater than the **growth rate**

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[267] AMPC/BCOAPO Submission, p. 58.

[268] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 36-37 and 57.

[269] AMPC/BCOAPO Submission, pp. 58-59.

[270] CEC Submission, para. 255.

[271] AMPC/BCOAPO Submission, p. 59.

of the economy as a whole in perpetuity. There is no evidence to suggest that the earnings growth rates for a specific utility and for a specific period of time, and the multi-stage DCF result derived from it, should always be lower than the market returns as a whole.

173. While pension plan information should not be relied upon for the reasons described earlier, using that information would demonstrate that Mr. Coyne's multi-stage DCF results are close to the corresponding returns in the pension reports cited by APMC/BCOAPO. Mr. Coyne elaborated:[272]

> So in their forecast -- along the lines of the numbers you were pointing out from the Fearless Forecast and the Aon Hewitt report, on page 198 in your book, you can see mean variance assumptions and factor scores. So this is where they summarized their forecasts for three years, five years and ten years. And there they have a category called U.S. defensive equity, which would be low-risk companies such as utilities. I think those questions were asked on IRs as to whether or not we would consider utilities to be defensive stocks, and we would. They are typically considered that way in the marketplace.
>
> And there they are projecting an arithmetic growth rate, it appears, of 7.1 percent for those defensive equity stocks. An equity return of 7.3 percent. But they also have an equity beta there of .75 for those defensive equity stocks. And I thought the math of that might be interesting because Dr. Booth, if I believe -- I understand his Operation Twist adjustment correctly, he adds 130 basis points to his 2.75 percent current -- or 2016, I believe, risk-free rate as he categorizes it. And he gets to about 4.05 percent. We're 3.68. We're lower. But for round numbers, if you took agreement between us, it's somewhere around 4 percent for a risk-free rate, an equilibrium risk-free rate.
>
> Dr. Booth -- we discussed betas earlier. Dr. Booth has a beta -- has a market equity risk premium between five and six percent is his number. If you take -- those were lower than the ones that I've estimated. If you take the high end of his range of 6 percent, it's something that we might even have a talk about. And this beta of .75, if you run through that math, that would get you to an 8.5 percent equity return for those defensive stocks. If you would add a flotation adjustment of 50 basis points, **that would get you to 9 percent on a geometric mean basis.**
>
> (Emphasis added.)

[272] Tr 2, 276, l. 22 - 278, l. 7 (Coyne).

(c) Dr. Booth's Sustainable Growth DCF Model

174. AMPC/BCOAPO maintain that Dr. Booth's sustainable growth rate calculation is reasonable, despite Dr. Booth's unrealistic simplifying assumption that the utility proxy companies achieve growth only from re-investment of retained earnings (and not from the injection of new equity).[273] FEI submits that the evidence does not support that contention.

Evidence Contradicts Dr. Booth's Assumption That Price to Book Ratios Equal One

175. Dr. Booth had maintained at the hearing that the omission of the S*V term from calculations of the sustainable growth rate does not matter for utilities as long as their market to book ratio is close to one.[274] The market to book ratios of the companies Mr. Coyne used in his proxy group[275] averaged well over 2.0, indicating that utility market to book ratios can be substantially greater than 1.0, and that Dr. Booth's sustainable growth rates (without the S*V term) have understated his DCF outcomes. Mr. Coyne's proxy group market to book ratios are reproduced below:[276]

[273] AMPC/BCOAPO Submission, p. 56.

[274] Tr 3, 601, l. 14 - 602, l. 3 (Booth).

[275] Exhibit B-1, Application, Appendix B, Evidence of Mr. Coyne, pp. 31-32.

[276] Exhibit B-28, Witness Aid for Dr. Booth on M/B ratios.

	Ticker	M/B
Enbridge	ENB	3.67
Emera	EMA	1.97
Valener	VNR	N/A
CU	CU	2.13
Fortis	FTS	1.4
Atmos Energy Corporation	ATO	2.21
New Jersey Resources Corp.	NJR	2.58
Northwest Natural Gas Company	NWN	1.8
Piedmont Natural Gas Company, Inc.	PNY	3.39
South Jersey Industries, Inc.	SJI	N/A
Southwest Gas Corporation	SWX	1.88
WGL Holdings, Inc.	WGL	2.69
	Average	2.372
	Max	3.67
	Min	1.4

176. AMPC/BCOAPO's response to the evidence that utility price to book ratios exceed one is to cite Dr. Booth's view that, in any event, utility market-to-book ratios **ought to be** close to one. They suggest that "regulation should lead to a market price that is appropriately equal to the utility's book value." As discussed in section G below, this is the very exercise that Bonbright has characterized as an "absurdity".

Dr. Booth's Evidence Regarding New Equity Issuance as a Percentage of Capital Stock

177. AMPC/BCOAPO states at page 56 that Dr. Booth "explained that where the new equity issuance as a percentage of the capital stock is negligible, then the s x v term is again essentially zero. They point to Dr. Booth's view that it is extremely unlikely that FEI "will dilute its capital stock by a non-negligible amount." Dr. Booth is overlooking the fact that the S*V term is derived from the proxy group companies and FEI does not issue equity. Based on the proxy group market to book ratios, the results of Dr. Booth's simplified model could be significantly understated.

Response to Comments Regarding Mr. Coyne's Quebec Evidence

178. AMPC/BCOAPO states at p. 56: "FEI likewise did not address Dr. Booth's point that Mr. Coyne's recent Quebec testimony not only made use of the sustainable growth model, but also demonstrates that the influence of the S*V term is negligible." Applying the results in that proceeding in the absence of the underlying calculations is highly suspect. Dr. Booth has admitted that the results of the sustainable growth DCF are sensitive to the market to book ratios of the proxy companies used at the time.

G. PRICE-TO-BOOK VALUES SHOULD NOT BE USED TO DETERMINE THE FAIR ROE

179. AMPC/BCOAPO warn that "Mr. Coyne's recommendation is likely to lead to market to book ratios that exceed one by a substantial measure." [277] They add: "Dr. Booth cautions against excessive returns that do not reflect the cost of capital and allow utilities to take one dollar of investment and turn it into one and a half, two or more dollars simply by investing it in rate base."[278] CEC makes a similar argument, based on Dr. Booth's evidence, to the effect that a market to book ratio greater than 1.0 implies an excessive ROE.[279] FEI submits that the Commission should reject these arguments and determine the fair ROE for FEI based on the recognized tests.

180. In response to a Commission IR Mr. Coyne adopted Mr. Engen's characterization from the GCOC Stage 1 Proceeding of the approach of adjusting allowed ROEs to manage utility share prices in such a fashion so as to keep utility price/earnings multiples in line with the market as being neither feasible nor desirable:[280]

> The concept of adjusting allowed ROEs to manage utility share prices in such a fashion so as to keep utility price/earnings multiples in line with the market is not feasible nor is it desirable.

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[277] AMPC/BCOAPO Submission, p. 10.

[278] AMPC/BCOAPO Submission, p. 10.

[279] CEC Submission, paras. 330-333.

[280] Exhibit B-9, BCUC-FEI IR 1.33.2 (Aaron Engen's Response to BCUC IR 1.30.1, GCOC Stage 1 Proceeding, submitted September 24, 2012).

> To begin with, multiple regulators may be involved with setting allowed ROEs for a corporation's regulated businesses (as is the case with Fortis Inc.). The more a utility's operations are overseen by different regulators, the less ability any one regulator has to effect change in the utility's share price and market valuations. In many cases rate regulated, cost-of-service assets comprise only a portion of the utility owner's businesses. The ability to determine which assets, non-regulated vs. regulated, are supporting the higher valuations is, at best, questionable. Were the company's non-regulated operations to be more attractive to the market, the regulator would have to more heavily penalize the regulated assets in order to manage down the company's earnings valuations to offset the positive P/E valuation impact of the non-regulated business.

181. Bonbright, an authoritative text on utility ratemaking, has also addressed the question of whether utility allowed earnings should be adjusted, as Dr. Booth suggests, to arrive at a target market to book or price earnings ratio. The authors characterized the approach as an "absurdity":[281]

> Should the allowed rate of return be designed to prevent the market prices of public utility equities from rising to substantial premiums above book values? A rigorous and literal application of a cost-of-capital measure of a fair rate of return in the above-outlined sense of this measure would mean an attempt by a commission to regulate rates of charge so as to maintain the market prices of utility equities on a par with their book values or rate-base values plus some stipulated allowance for necessary underpricing. **Yet a mere reference to any such attempt should suffice to suggest its absurdity.** In the first place, commissions cannot forecast, except within wide limits, the effect of their rate orders on the market appraisals of the stocks of the companies subject to these orders. But in the second place, whatever the initial market appraisals may be, they are sure to change not only with the changing prospects of earnings but with the changing outlook of a notoriously volatile stock market. In short, market prices are beyond the control, though not beyond the influence, of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it in the manner just suggested would result in harmful, uneconomic shifts in public utility rate levels….
>
> (Emphasis added.)

[281] Bonbright, James C., *Principles of Public Utility Rates,* New York, Columbia University Press, 1961, pages 254 through 256. Quoted by Mr. Coyne in the response to Exhibit B-9, BCUC-FEI IR 1.33.2.

182. Dr. Booth admitted that one cannot simply equate the price to book value of a holding company to the price to book value of a subsidiary utility. He characterized the exercise as "looking through a dirty window":[282]

> I've constantly referred to looking at market-to-book ratios for utility holding companies as looking through a dirty window and trying to get a handle on the market-to-book for the underlying utility. You are trying to get an idea of what's going on for the utility, but there's lots of other things going on at the utility holding company. And in particular, the -- we had the problem of non-rate – regulated activities, and we had the problems of the double leverage and the financing going on at utility holding companies. So trying to get a good handle on what's going on at the utilities is extremely difficult.

183. In light of the above evidence, the Commission should not use price to book ratios in the determination of a fair ROE for FEI.

[282] Tr 3, 696, l. 17 - 697, l. 3 (Booth).

PART SEVEN: CONCLUSION AND ORDER SOUGHT

184. The material in this Reply Submission, in conjunction with the Final Submission filed on April 3, 2016, supports a Commission determination that the Fair Return Standard is met for the benchmark FEI with a ROE of 9.5 percent, based on a 40 percent common equity ratio. The Commission should approve those changes.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Dated: April 28, 2016 ***[original signed by Matthew Ghikas]***
Matthew Ghikas
Counsel for FortisBC Energy Inc.

Dated: April 28, 2016 ***[original signed by Tariq Ahmed]***
Tariq Ahmed
Counsel for FortisBC Energy Inc.