British Columbia Utilities Commission

Laurel Ross
Acting Commission Secretary

Commission.Secretary@bcuc.com
Website: www.bcuc.com

Sixth Floor, 900 Howe Street
Vancouver, BC Canada V6Z 2N3
TEL: (604) 660-4700
BC Toll Free: 1-800-663-1385
FAX: (604) 660-1102

Log No. 51269

VIA EFILE
gas.regulatory.affairs@fortisbc.com

August 10, 2016

Ms. Diane Roy
Director, Regulatory Affairs
FortisBC Energy Inc.
16705 Fraser Highway
Surrey, BC V4N 0E8

Dear Ms. Roy:

Re: FortisBC Energy Inc.
Project No. 3698852
Application for its Common Equity Component and Return on Equity for 2016

Further to your October 2, 2015 filing of the above noted application, enclosed please find the British Columbia Utilities Commission's decision.

Yours truly,

Original Signed By Doug Chong for:

Laurel Ross

/nd
Enclosure

British Columbia Utilities Commission

IN THE MATTER OF

FortisBC Energy Inc.
Application for its Common Equity Component and Return on Equity for 2016

DECISION

and Order G-129-16

August 10, 2016

Before:
K. A. Keilty, Commissioner/Panel Chair
D. A. Cote, Commissioner
N. E. MacMurchy, Commissioner

TABLE OF CONTENTS

Page No.

TABLE OF CONTENTS

Page No.

EXECUTIVE SUMMARY

On October 2, 2015, FortisBC Energy Inc. (FEI) filed an application for a review of its common equity component and return on equity (ROE) for 2016 in compliance with British Columbia Utilities Commission (Commission) Order G-75-13. After considering and weighing the evidence and submissions in this proceeding, the Panel has determined the following, effective January 1, 2016:

- **FEI's common equity component is set at 38.5 percent;**
- **FEI's ROE is set at 8.75 percent;**
- **The use of the Automatic Adjustment Mechanism (AAM) is suspended indefinitely;**
- **The common equity component and ROE approved for FEI in this decision will serve as the benchmark cost of equity for any other utility in British Columbia that uses the benchmark utility to set rates; and**
- **The common equity component and ROE will remain in effect until otherwise determined by the Commission.**

In reaching this decision, the Panel applied the Fair Return Standard to ensure that the common equity component and ROE met the three tests for a just and reasonable return on equity: the comparable investment, financial integrity and the capital attraction requirements.

Contextual issues

The Panel considered three issues to establish the context for this decision: the key determinations in the 2013 Generic Cost of Capital Decision; the changes in global and economic conditions since 2012; and reliance on decisions and data from other jurisdictions. The 2013 Generic Cost of Capital (GCOC) Decision is viewed by the Panel to be a reasonable reference point to assist in the evaluation of the evidence presented in the current proceeding, including the determinations with respect to the use of the capital asset pricing model (CAPM) and the discounted cash flow (DCF) models and the use of proxy companies comparable to FEI. The expert witnesses in the current proceeding focused on these two models using comparable Canadian and US data. With respect to changes in economic and global market conditions, all parties in this proceeding agree that current conditions are substantially the same as existed at the time of the 2012 GCOC proceeding.

Dealing with uncertainty

As is the case in all hearings dealing with ROE and common equity ratio determinations, in making its decision the Panel is faced with a number of uncertainties. This requires the application of judgment, informed by the evidence on record in the proceeding. The Panel noted a number of areas where uncertainty exists including:

- The use of imperfect models that rely on significant assumptions, subject to a high degree of uncertainty and variability;
- The use of US proxy companies subject to differences in the regulatory treatment and evidence of growth rate instability;
- Reliance on a Canadian group of proxy companies whose business interests are not directly comparable FEI's due to the lack of stand-alone publically traded natural gas distribution companies in Canada;
- The impact of distortions to capital markets resulting from the abnormal conditions in the bond markets resulting from the impact of global bond buying programs;
- Uncertainty with respect to the appropriate adjustment to raw betas for low risk utilities; and

- Sensitivity of the DCF model to growth rate assumptions.

The Panel has endeavoured to deal with these uncertainties by: (a) identifying the uncertainties and quantifying them where possible; (b) using different financial models as a check against the other; and (c) and while not determinative, considering the findings of other regulatory bodies in Canada.

Fair Return Standard

The expected rate of return investors require is based on the risk-return alternatives available in competitive capital markets. The financial models are the primary means used by FEI and interveners to estimate the comparable return available to investors from other entities of like risk. The expert witnesses in this proceeding used both Canadian and US proxy companies to provide input to their models. In determining the appropriate weight to place on the models, the Panel recognized the models are imperfect and considered the totality of the evidence. The Panel noted both the CAPM and DCF model rely on proxy group information and a selection of proxy companies that are imperfect comparators due to business and regulatory environments that differ from FEI. Further, given the current global economic and capital market environment, the reliability of the models is called into question more than in the previous cost of capital hearings, requiring the Panel to exercise its judgement to a greater degree. The Panel also considers whether conditions have changed sufficiently since the 2012 GCOC proceeding to warrant an increase or decrease in ROE. After assessing the output of the models and weighing the uncertainties, the Panel determined that maintaining the return on equity at 8.75 percent is appropriate.

In assessing the common equity component, the Panel determined that while there are some differences in the risks facing FEI relative to the time of the 2012 GCOC proceeding, the changes are not of a substantial nature requiring a change to FEI's ROE or common equity ratio. As a check, the Panel considered that the common equity component and ROE determined by the Panel situates FEI appropriately based on its relative risk to comparable Canadian natural gas distribution utilities.

With respect to debt financing, FEI's ability to attract capital and maintain its financial integrity is impacted by its credit rating. The Panel considered whether a higher ROE or common equity ratio is necessary to maintain FEI's current "A" credit rating given FEI's metrics weak financial metrics relative to the required metrics for a credit rating in the "A" category. The Panel agrees with FEI that maintenance of an A credit rating helps ensure FEI's access to capital in most market conditions, and among other benefits, ensures a lower cost of borrowing. The Panel is not persuaded that the high level of capital expenditures that FEI has planned through 2018 will impact its credit rating given the Panel has maintained of its current allowed ROE and common equity component.

The Panel assessed whether an increase in its common equity component was necessary to support FEI's ongoing debt issuance capacity under its Trust Indenture as a result of the significant new capital requirements facing FEI in the next few years. The Panel concluded that assuming both a 5.0 percent and 6.0 percent yield on new debt issuances, FEI has sufficient capacity under its Trust Indenture to meet its financing needs in the 2016 to 2018 period. The Panel noted FEI does not become constrained until interest rates reach 7.0 percent which given the expert evidence on forecast interest rates for this period, the Panel considers unlikely. Further, in the event FEI is faced with interest rates at this level it has other alternatives including its ability to issue secured debt, alter the timing of certain capital expenditure or bring an application to the Commission for a change in ROE. Accordingly, the Panel is of the view that an increase is ROE or common equity ratio is not required to support FEI's ability to issue debt under its Trust Indenture.

The Panel concludes an ROE of 8.75 percent and common equity component of 38.5 percent meet the comparable investment, capital attraction and financial integrity requirements.

Automatic Adjustment Mechanism

The Panel continues to hold the view that an effective AAM can be a useful tool in providing an updating mechanism for ROE, thereby eliminating some of the need for lengthy and expensive formal reviews. However, we acknowledge that economic conditions are uncertain and accept Dr. Booth's explanation of long Canada bond yields are less affected by investors and more by central banks' policies. Therefore, the Panel does not believe that continuing with an AAM at this time will necessarily result in changes reflecting a fair ROE or meeting the Fair Return Standard.

FEI as the benchmark utility

The Panel notes that there was general agreement among the parties with respect to FEI being made the benchmark for the GCOC proceeding. Accordingly, the common equity component and ROE approved in this decision will serve as the benchmark cost of capital for any other utility in British Columbia that uses the benchmark utility to set rates**.**

1.0 INTRODUCTION

1.1 Overview of the application

On October 2, 2015, FortisBC Energy Inc. (FEI) filed an application for a review of its common equity component and return on equity (ROE) for 2016 (Application) pursuant to the British Columbia Utilities Commission (Commission) decision in the 2012 Generic Cost of Capital (GCOC) Stage 1 proceeding. In the Application, FEI requests approval of a capital structure of 40 percent equity and 60 percent debt and a return on common equity of 9.5 percent for 2016.[1] This compares to FEI's currently allowed ROE of 8.75 percent and common equity component of 38.5 percent.

1.2 Background

In the 2013 GCOC Decision rendered on May 10, 2013,[2] the Commission determined that:

- FEI's common equity ratio is reduced from 40.0 percent to 38.5 percent, effective January 1, 2013.
- FEI's ROE is set at 8.75 percent, effective January 1, 2013 until December 31, 2015, subject to variation commencing January 1, 2014, by an Automatic Adjustment Mechanism (AAM) formula.
- The AAM formula, based on a two factor model, was to be applied annually to set the ROE of the benchmark utility between ROE proceedings. It will commence in 2014 and operate until December 31, 2015. The implementation of the AAM would only be applied when the long Canada bond yield met or exceeded 3.8 percent.

Commission Order G-75-13 accompanying the 2013 GCOC Decision directed the benchmark utility, FEI, to file an application for the review of its common equity component and ROE approved in that order by no later than November 30, 2015.

Since the 2013 GCOC Decision, FEI has undergone an amalgamation of three affiliated utilities serving distinct service areas: the former FortisBC Energy Inc., FortisBC Energy (Whistler) Inc. (FEW) and FortisBC Energy (Vancouver Island) Inc. (FEVI), to become Amalgamated FEI or, as used in this Application, FEI.

On October 2, 2015, in compliance with Order G-75-13, FEI filed its Application pursuant to sections 59 to 61 of the *Utilities Commission Act* (UCA) seeking approval of its proposed capital structure and return on common equity to take effect January 1, 2016.

At the time of the filing of this Application, FEI's Annual Review of 2016 Delivery Rates proceeding was before the Commission, and FEI's existing common equity component and return on equity was approved as interim in that proceeding, effective January 1, 2016, pending the outcome of this Application.[3] Order G-204-15 ordered that FEI's common equity component and return on equity would remain the benchmark on an interim basis effective January 1, 2016.

---

[1] Exhibit B-1, p. 1.
[2] British Columbia Utilities Commission Generic Cost of Capital Stage 1 (2013 GCOC), Decision dated May 10, 2013, Order G-75-13.
[3] FortisBC Energy Inc. Annual Review of 2016 Delivery Rates, Order G-193-15 with Reasons for Decision dated December 7, 2015.

1.3 Purpose and scope of the proceeding

The purpose of the proceeding is to establish a fair return for FEI based on the Fair Return Standard and the standalone principle. The focus of this proceeding is on matters that directly affect the fair return of FEI. These matters include:

- Consideration of the amalgamation being a factor affecting FEI's business risk;
- Changes in business risk since the 2012 GCOC proceeding, independent of the effect of amalgamation;
- Changes in economic conditions and capital markets since 2012 and their impact on FEI's cost of capital; and
- Consideration of the appropriate means of determining the allowed ROE reflecting the rate of return being earned by comparable companies.

In addition, this decision examines the need for continuation of an AAM. In accordance with this, by Order G-204-15, the Commission determined that a regulated utility that uses the benchmark to establish its rates must apply to the Commission if it wishes to have its rates made interim pending the outcome of this proceeding. This decision determines the role of FEI as a benchmark utility.

1.4 Regulatory process

The regulatory review was by way of a limited scope oral hearing, as proposed by FEI, which took place after two rounds of information requests (IRs) to FEI and one round of IRs on Intervener Evidence.[4]

Six parties registered as interveners in this proceeding:

1. Commercial Energy Consumers Association of British Columbia (CEC);
2. British Columbia Municipal Electrical Utilities (BCMEU);
3. British Columbia Hydro and Power Authority (BC Hydro);
4. British Columbia Old Age Pensioners' Organization *et al*. (BCOAPO);
5. Industrial Customers Group (ICG); and
6. Association of Major Power Customers of BC (AMPC).

Among the registered interveners, CEC, BCOAPO and AMPC: collectively the "Utility Customers," were most active and they jointly sponsored the expert evidence of Dr. Laurence Booth of the University of Toronto. CEC and AMPC participated separately in the IR process, cross-examination and filing of final submissions. BCOAPO separately participated in the IR process but joined AMPC in filing its final submission. ICG participated in the second round of the IR process and filed a final submission.

A number of regulated utilities either registered as interested parties or provided Letters of Comment to this proceeding in order to provide their views related to issues such as interim rates for utilities that rely on the benchmark utility for setting rates.

[4] Exhibit A-2, Commission Order G-177-15 dated November 9, 2015.

The oral hearing took place from March 9, 2016 to March 11, 2016 where participants cross-examined the expert witnesses, Mr. James Coyne of Concentric Energy Advisors and Dr. Laurence Booth of the University of Toronto, representing respectively, FEI and the Utility Customers.

At the close of the oral hearing, counsel for FEI, AMPC and CEC submitted in turn to the Panel that there was no further need for questions on the business risk of FEI. Accordingly, the Panel closed the evidentiary record on March 11, 2016 and, based on agreement from all parties, established the timing for FEI's final submission, intervener final submissions and FEI reply submission to take place from April 3, 2016 to April 28, 2016.

On May 5, 2016, AMPC sought leave from the Commission to file two narrow sur-reply submissions based on its view that there were new issues raised in FEI's reply submission. The Commission, after considering comments from FEI and other interveners, allowed the sur-reply to remain on record by Order G-68-16. With the admission of AMPC's sur-reply on the record, the argument phase for this proceeding ended on May 13, 2016, the date the Commission accepted the sur-reply by Order G-68-16.

1.5 Approach to the decision

The legal framework for determining a fair return for a regulated utility is called the Fair Return Standard and is discussed in Section 2.

There are a number of broader issues of importance which are contextual in nature and include the following:

- The key determinations in the 2013 GCOC Decision and relevance to this proceeding;
- Changes in economic and global market conditions since 2012/2013; and
- Consideration of other jurisdictions.

These issues are discussed in Section 3 and provide the Panel with a context to assist in reviewing and assessing the evidence.

Section 4 deals with an appropriate capital structure given FEI's business risk and consideration of other items impacting common equity component including: credit ratings, FEI's ability to issue debt under its Trust Indenture and the common equity component decisions in other jurisdictions.

Section 5 considers the appropriate ROE for the benchmark utility with a review of some of the key issues and models employed by the expert witnesses.

Section 6 examines potential AAM models and whether there is justification to continue to rely on such a mechanism. Section 7 deals with the role of FEI as a benchmark utility.

2.0 APPLICATION OF THE FAIR RETURN STANDARD

The principles of the Fair Return Standard were established by the Supreme Court of Canada in the Northwestern Utilities v. City of Edmonton (1929) case. The Fair Return Standard is the legal test applied to ensure that investors receive the opportunity cost on their investment represented by the rate of return investors could expect to earn elsewhere without bearing more risk.

In summary, the Fair Return Standard is fundamental to cost of equity proceedings and has three requirements or tests to be met for a fair and reasonable return on capital:

a) The comparable investment requirement;

b) The financial integrity requirement; and

c) The capital attraction requirement.

FEI submits that under the Fair Return Standard, the overall rate of return allowed for FEI (i.e., the combined capital structure and return on equity must meet the above three distinct elements of the test) must not compromise FEI's legitimate cost of service resulting from these tests in order to achieve lower rates in the short run; must account for the risks that FEI faces in achieving its return on and of its invested capital; and must allow FEI to maintain appropriate access to capital, particularly with FEI's significant capital investment requirements.[5]

In this proceeding, no party has directly challenged the Fair Return Standard or the regulatory compact, although FEI argues that some parties have indirectly done so by raising the issue of rate impacts and by characterizing rates that provide an appropriate risk adjusted rate of return as being unnecessarily high.[6]

AMPC/BCOAPO submit that FEI made an irrelevant argument because AMPC/BCOAPO have not made any submissions related to their members' ability to pay rates but concede the Commission should not simply ignore how its decision will affect ratepayers. They submit the Commission's mandate requires it to balance the interests of ratepayers and utilities investors.[7]

Consistent with previous decisions and the "regulatory compact" the Panel confirms that it has a duty to approve rates that meet this standard, and to provide a reasonable opportunity for the utility to earn a fair return on invested capital. The Panel also concurs with the finding in the 2013 GCOC Decision that in assessing the Fair Return Standard, the utility must be assessed on the basis of the standalone principle. That is, it must be assessed as if FEI is a stand-alone entity, raising capital on the merits of its own economic, business and financial characteristics.[8] No party challenged the application of this principle.

The Panel has not considered rate impacts that result from the revenue required to yield the fair return. The Panel recognizes that once a revenue requirement that has been established consistent with the Fair Return Standard and the regulatory compact, an assessment is required to determine not only that the rates give the utility the opportunity to realize its revenue requirements but also to ensure the rates that are set are structured so that they are consistent with the UCA requirement that they must not be "unjust" or "unreasonable" by being "more than a fair and reasonable charge for the service of the nature and quality provided by the utility."[9]

[5] FEI Final Submission, pp. 8–10.
[6] FEI Final Submission, p. 12.
[7] AMPC/BCOAPO Final Submission, p. 13.
[8] 2013 GCOC Decision, p. 100.
[9] *Utilities Commission Act*, RSBC 1996, Chapter 473, section 59(5).

The Panel agrees with the finding in the 2013 GCOC Decision: "The Commission observes that the application of the FRS (*Fair Return Standard*) leaves room for disagreement, judgment and discretion."[10]

3.0 CONTEXTUAL ISSUES

3.1 Determinations in the 2013 Generic Cost of Capital Decision

3.1.1 Key determinations in the 2013 GCOC Decision

The 2012 GCOC proceeding was initiated by the Commission in 2012 to review and determine the ROE and capital structure for a benchmark low-risk utility, which was last set in 2009 by Commission Order G-158-09 on December 16, 2009.

In the 2012 GCOC proceeding, FEI filed detailed company evidence and tendered four expert witnesses who presented to the Commission a variety of models for determining the appropriate ROE using a number of methodologies that vary in structure, assumptions and the data from which the model results were estimated. The proceeding also raised a number of broader issues that were contextual in nature. The key determinations of the 2013 GCOC Decision are summarized below:

a) Weighting of the models – it was determined that the two most compelling frameworks for assessing the cost of equity are the discounted cash flow (DCF) model and the capital asset pricing model (CAPM). These two models were given equal weight when determining the allowed ROE.[11]

b) Relevance of US data - it was determined that it was appropriate to continue to accept the use of historical and forecast data for US utilities and securities as outlined in the 2006 Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. Application to Determine the Appropriate Return on Equity and Capital Structure and to Review and Revise the AAM (2006 TGI ROE) Decision and again in the 2009 Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc. and Terasen Gas (Whistler) Inc. Return on Equity and Capital Structure (2009 TGI ROE) Decision. However, the Commission did not accept that US data should be considered to be the same or necessarily be given equal weight as the data for Canadian utilities. It was of the view that the use of US data must be considered on a case by case basis and weighed with consideration to the sample being relied upon and any jurisdictional differences which might exist.[12]

c) Comparability with other Canadian jurisdictions - the Commission took the view that it is important to consider the methodologies, approaches and regulatory principles related to other jurisdictions' decision. However, it did not accept that results and values from other jurisdictions could be used for the purposes of determining the ROE and common equity component requirements for utilities in BC.[13]

d) Relevance of disparity between allowed and actual ROE[14] - as part of assessing the relevance of the disparity between "allowed" and "actual" ROE, the Commission considered the question of whether FEI faced any short-run risks with respect to its ability to annually earn its allowed ROE given its strong track

[10] 2013 GCOC Decision, p. 8.
[11] 2013 GCOC Decision, p. 80.
[12] 2013 GCOC Decision, pp. 19–20.
[13] 2013 GCOC Decision, p. 20.
[14] The Commission approves a ROE that meets the Fair Return Standard. Based on the approved ROE, a revenue requirement is calculated and rates are set and approved by the Commission at levels that are judged to allow the utility the opportunity to earn its approved ROE. The utility may earn more than its approved ROE or less, depending on the efficiency of its operations and on the economic circumstances it encounters. The term "allowed ROE" or "approved ROE" means the ROE found by the Commission that meets the Fair Return Standard. The term "actual ROE" or "realized ROE" refers to the ROE that the utility ends up achieving.

record of earning more than its approved ROE. The Commission noted that there was no evidence to suggest investors are likely to make a major distinction between short-term and long-term risk; and accordingly, concluded that the relevance of disparity between allowed and actual ROE of FEI is entrenched in the regulatory compact, revenue requirements proceedings and management's proactive approach.[15]

e) Financing flexibility adjustment - expert witnesses in the 2012 GCOC proceeding proposed financial flexibility adjustments ranging from 32 to 100 basis points (bps), dependent on a variety of conditions. The Commission approved the addition of 50 bps to be added to the CAPM and DCF tests in determining the fair ROE after reviewing a range of proposed allowances.[16]

3.1.2 Relevance to current proceeding

The key determinations of the contextual issues in the 2013 GCOC Decision provide the Panel in this proceeding with some guidance when considering the evidence in this proceeding.

3.2 Changes in economic and global market conditions since 2012

All parties in this proceeding approached the review of FEI's proposed ROE and common equity ratio by focusing on the changes in economic and capital market conditions since 2012 rather than undertaking a full analysis of current market conditions. The Panel accepts this approach and considers that changes in the economic and global market conditions should, among other considerations, inform its decision on whether the ROE and common equity component established in the 2013 GCOC Decision should increase, remain in place, or decrease.

In the current proceeding, all parties agree economic and capital market conditions remain much as they were in 2012. With respect to the changes since 2012, Mr. Coyne states:

> Generally, current capital market conditions are not dissimilar to what they were in June 2012. Capital markets continue to recover from the global economic crisis of 2008-2009, but at a slower than expected pace and have shown little change from when FEI last filed its GCOC evidence in 2012. Bond yields have remained low and utility bond spreads have remained somewhat elevated, with no significant movements since June 2012.[17]
>
> …Though financial markets have reflected more optimism in valuations, recent financial market volatility indicates that optimism may be waning and uncertainty persists in today's financial markets, as it did in June 2012, as the pace of recovery proves slower than expected and the impact of China's economic slowdown has yet to be fully realized on the global economy. Though it is difficult to predict what will unfold, I would not characterize the global economy as appreciably improved today from where it stood in its recovery in June 2012, and accordingly, I would not expect investors to view current capital market conditions as dissimilar to those in June 2012.[18]

In Dr. Booth's view, since 2012, conditions have been in a "holding pattern" waiting for the US and Europe to recover from the effects of their recessions. He indicates that the recovery has been impacted by slowed growth

[15] 2013 GCOC Decision, p. 22.
[16] 2013 GCOC Decision, p. 80.
[17] Exhibit B-1, Appendix B, p. 22.
[18] Exhibit B-1, Appendix B, p. 24.

in China which also impacted commodity markets and triggered a correction in the stock market. Dr. Booth states:

> The upshot is that the stronger markets that were expected at that time have not developed as anticipated and Alberta, in particular has been badly hit. Further conditions in the bond market have become even looser than they were in 2012 as the massive amount of liquidity in global markets continues to increase, depressing bond yields.[19]

FEI describes the current Canadian environment as continuing to be dominated by uncertainty and as "not materially different form 2012 levels."[20]

Mr. Coyne analyzes the corporate bond market and notes the Canadian Utilities A-related spread over 30-year government bonds was 1.588 percent in June 2012 verses 1.868 percent in August 2015, an increase of 28 bps.[21] Mr. Coyne states this increase indicates ongoing risk aversion in the wake of continued economic uncertainty. Mr. Coyne also analyzes the change in FEI bond spreads and concluded that FEI's bond spread has increased since June 2012. It is also Mr. Coyne's opinion that the average Canadian distribution utility bond spreads have increased more than the Corporate A-rated bond spreads.[22]

Dr. Booth states that utilities continue to have easy access to debt markets at very low interest rates and similar to 2012, conditions are very receptive to "good credits" like Canadian utilities.[23]

Intervener submissions

CEC describes capital market conditions as not being dissimilar to what they were in June 2012, and capital markets have continued to recover from the global economic crisis of 2008-2009, but at a slower than expected pace.[24]

AMPC/BCOAPO submit the decrease in long Canada yields reflect lower utility borrowing costs, allowing FEI to access the bond market on more favourable terms than in 2013 and resulting in FEI having a lower embedded debt cost, an increase in its interest coverage ratio and an enhancement of its financial flexibility.[25]

FEI reply submission

FEI submits the increase in credit spreads is an indicator of increased investor risk aversion regarding utility equity and therefore implies a higher cost of equity.[26]

FEI submits Dr. Booth has not accounted for credit spreads which quantifies the compensation investors demand for making investment in relationship to risk free rate and in addition, the increased credit spreads since 2012 are an indicator of increased risk of a utility investment.[27]

---

[19] Exhibit C7-7-2, pp. 2–3.
[20] Exhibit B-1, p. 13.
[21] Exhibit B-1, Appendix B, p. 19.
[22] Exhibit B-9, BCUC IR 32.2.
[23] Exhibit C7-7-2, pp. 34–45.
[24] CEC Final Submission, p. 10.
[25] AMPC/BCOAPO Final Submission p. 37.
[26] FEI Final Submission, p. 32.

Panel discussion

While FEI and AMPC/BCOAPO differ in their interpretation of the meaning of recent movement of utility credit spreads, the Panel accepts that there is little disagreement among the parties that the economic condition of the BC economy and capital market conditions are not materially different from the 2012 levels. In this proceeding, similar to the approach set out in the 2013 GCOC Decision, the Panel has to assess a number of elements to determine if a change in FEI's ROE and common equity component is appropriate. This analysis includes weighing the impact of the changes in economic conditions and global market conditions since 2012 and the extent to which changes in these conditions imply changes in an investor's opportunity cost.

3.3 Consideration of other jurisdictions

The "comparable investment requirement" of the Fair Return Standard requires the return available from the application of the utility's invested capital to be comparable to the return of other enterprises of like risk. The challenge posed by a comparability test is to find a group of proxy companies that reflect the substantially similar environment facing FEI, including the market, regulatory, financial, environmental and political circumstances affecting current and future economic prospects.

All parties acknowledge there are no publically-traded, pure play gas distribution companies in Canada. Hence, both the FEI and the Utility Customers' expert witnesses assessed a sample of US companies that are primarily engaged in natural gas distribution in order to assess the market expectations specific to a natural gas distribution utility.[28]

Mr. Coyne and Dr. Booth also looked at a set of Canadian companies as comparators although they recognized the Canadian comparators were mainly holding companies and not directly comparable to FEI in terms of their business functions.

Details of the assessment and use of the comparators proxy companies are set out in Section 5.

Separate from the use of the Canadian and US proxy companies that were inputs into the assessment of an appropriate ROE, Mr. Coyne and Dr. Booth also provided evidence on the approved equity structures and ROE's of gas distribution utilities in other Canadian jurisdictions and how these awarded capital structures relate to FEI's circumstances. This assessment of how FEI compares to the allowed common equity component of other regulated utilities in Canada is included in Section 4.3.3.

4.0 CAPITAL STRUCTURE

4.1 Assessing business risks

In the 2013 GCOC Decision, risk was viewed "as the probability that future cash flows will not be realized or will be variable resulting in a failure to meet investor expectations."[29] None of the parties in this proceeding raised any issue or provided any alternative to how risk had been defined in past Commission decisions. Therefore, the

[27] FEI Reply Submission, pp. 13–14.
[28] Oral Hearing Transcript Volume 3, pp. 581–595; FEI Final Submission p. 77.
[29] 2013 GCOC Decision, p. 24.

Panel will continue to rely on this description of risk in its review of FEI's risk profile and its determinations on capital structure.

4.1.1 Establishing a framework for assessing risk

In the 2013 GCOC Decision, the Commission explained that inherent in its definition of risk is the recognition there is the risk of potential financial disruption and therefore accepted the distinction made in previous decisions where investment risk comprised business, financial and regulatory risks.[30]

According to Mr. Coyne, the purpose of his testimony related to FEI's risks was to examine FEI's risk profile in comparison to its peers within the context of FEI's request for a 40 percent equity component. Mr. Coyne asserts that risk for utilities or any company comes from two primary sources, business risk and financial risk. He describes business risk as being inherent in a company's operations regardless of how it is financed while financial risk is a function of the extent to which a company incurs fixed obligations in the financing of its operations.[31]

Dr. Booth provides commentary related to the establishment of a framework for assessing risk. Dr. Booth judges the best way to determine capital structure is to assess it based on the business risk of a utility and cites examples of other Canadian jurisdictions relying on this methodology. He states that a utility "with higher business risk should then have more common equity, so that less financial risk offsets higher business risk to equalize total risk" allowing a regulator to award the same allowed ROE from a generic cost of capital proceeding. Dr. Booth does acknowledge however, that there are cases where an adjustment to both the common equity ratio and the ROE is necessary, particularly in those cases where an inefficient capital structure has resulted.[32]

While it has been common practice in the Commission's cost of capital decisions to consider the common equity ratio and ROE at the same time and not uncommon for a decision to result in a change to both components, it is acknowledged that capital structure and cost of equity are not independent but closely linked to one another. The Panel sees no need to move away from past practice in this proceeding and notes there has been no strong argument from the parties to do so. Therefore, consistent with past practice, the Panel has reviewed the evidence and provided its determination on the common equity component with consideration of three factors: (i) changes in FEI's business risk since the last proceeding; (ii) financial implications related to the potential for credit ratings adjustments; and/or (iii) failure to meet the trust indenture issuance test. In addition, the Panel will also examine and address FEI's level of risk relative to other Canadian utilities.

Prior to examining any potential changes in risk since the 2013 GCOC Decision, the Panel will address two factors that have arisen during this proceeding, each of which provide context to risk related issues to be examined. They are as follows:

- Short-term versus long-term risk of earning the allowed ROE; and
- The impact of amalgamation on FEI's overall risk.

[30] 2013 GCOC Decision, p. 24.
[31] Exhibit B-1, Appendix B, p. 61.
[32] Exhibit C7-7-2, p. 64.

4.1.2 Short-term versus long-term risk of earning the allowed ROE

The impact of short-term risk on overall risk, and whether a short-term risk if never realized over a period of time should be considered a long-term risk and evaluated as such was raised by the parties. Specifically, this issue related to FEI's history of achieving actual earnings higher than its allowed ROE and whether the risk of not earning the allowed ROE should be considered a risk at all when viewed in the context of FEI's historical ROE performance.

Mr. Coyne explains that business and financial risks also have a time dimension and both long and short-term risks are considered by investors and affect a utility's business risk profile. He describes short-term risks as those that will reverse and resolve themselves within a one to two year period through either the normal ebb or flow of earnings or through regulatory relief as a utility's short-term risk. Examples of these could include weather events or financial market disruptions. By contrast, longer term risks are those characterized by a business profile shift where mitigation is not foreseeable. Included among his examples of long-term risk is the risk of stranded assets because of market share losses or changes in environmental policies with a substantial impact on operational profitability.[33]

Dr. Booth describes the ability to earn the allowed ROE, reflecting a return on capital, as short-run risk. The return of capital is a long-run risk reflecting the utility's ability to recover its investment in plant and equipment. Dr. Booth asserts however, that to have any impact, long-term risks must eventually become short-term risks and states that: "To all intents and purposes FEI's shareholders have not suffered any losses or experienced any risk." Further, when such serious risks do arise, Canadian utilities typically come before the regulator for a reallocation of costs.[34] Further, AMPC/BCOAPO, with reference to the earning of ROE, explain neither they nor Dr. Booth take issue with FEI's position that the ability to earn ROE in a particular test year represents short-term risk. However, they contend that year after year "FEI continues to face very little short-run risk, such that this pattern of consistent overearning is clearly a long-term phenomenon" and pose the question as to how many years of persistent over-earning does it take for a utility witness to accept the limited risk faced by utility investors.[35]

CEC takes issue with FEI's statement that risk factors impairing the ability of shareholders to recover their invested capital present risks today are considered by investors in making investment decisions. CEC submits that stock equity investors are more concerned with immediate risk and current ROE performance and assert "investors are free to alter their investment at any time if immediate rewards do not match the immediate risk." Moreover, its view is that risks five years in the future will likely already be reflected in the ROE at the time and therefore recommends greater weight be placed on short-term risks.[36]

FEI submits there are two problems with Dr. Booth's position that FEI's history of earning its ROE suggests FEI experienced no risk. First, risk is prospective in nature and FEI benefiting from sound management and executive oversight generally expects to earn its allowed ROE while at the same time acknowledging that variances still occur due to the imprecision inherent in forecasts and circumstances that arise during a test year. Its ability to

[33] Exhibit B-1, Appendix B, p. 61.
[34] Exhibit C7-7-2, pp. 64–65, 69.
[35] AMPC/BCOAPO Final Submission, pp. 18–19.
[36] CEC Final Submission, pp. 59–60.

earn its current allowed ROE provides insight only into how the utility manages its short-term risk. A second problem with Dr. Booth's assertion is the full recovery of invested capital in the future is not guaranteed by a utility's ability to manage its budget within a test year. FEI's position is that investors require risks to be compensated throughout the investment period and would not accept that risks should be considered only when it materializes in earnings.[37]

FEI states that CEC's observation that utilities are "free to alter their investment at any time" is flawed. FEI's investment in long-term assets are subject to statutory obligations concerning safe and reliable service and because of this, the law requires the regulator to meet the comparable investment requirement part of the Fair Return Standard. In addition, no investor would accept the argument that compensation is required only for risks that have materialized.[38]

Commission determination

In the 2013 GCOC Decision, the Commission addressed the relevance of the disparity between allowed and actual ROE stating "the differences in actual and allowed ROE relate to revenue requirements and are influenced by management's ability first to forecast and then to control cost for each test period." The Commission also observed that the relevance of a disparity between allowed and actual ROE is a matter that is "entrenched in the regulatory compact, revenue requirements proceedings, and management's proactive approach."[39]

AMPC/BCOAPO take issue with FEI's position that in a given test year, the ability of a company to earn its ROE is short-term risk. Their collective concern seems to be with the fact that historically, FEI has managed to make and exceed its allowed ROE on a relatively consistent basis and at some point, the risk must be considered very limited or in Dr. Booth's words: "FEI's shareholders have not suffered any losses or experienced any risk."

AMPC/BCOAPO's position is for a risk to remain a risk, it must at some point occur. The Panel is not persuaded that this interpretation of risk is reasonable or reflective of the prospective nature of risk. In the Panel's view, a risk does not disappear because it has not occurred over a period of time and non-occurrence of a risk in the past does not necessarily alter the probability of occurrence in the future.

The Panel does not agree with CEC's assertion that equity investors are concerned primarily with immediate risk and current ROE performance as they can alter their investment when rewards fail to match the immediate risk. While investors certainly consider a risk which has recently occurred, they must be equally concerned about the future prospects of an investment. Further, while it is true investors may sell a particular investment; it would be imprudent of an investor to fail to consider the future prospects of an investment and any potential future risks which may occur.

The Panel accepts FEI's argument that risk is prospective. In the Panel's view, the risk of earning ROE does not disappear in any given test year because of a utility's success in achieving it in prior years. However, this does not mean that an investor does not consider historical performance when choosing to make an investment but in doing so must accept that there is no certainty that past performance will be repeated in the future. Given

[37] FEI Final Submission, p. 51.
[38] FEI Reply Submission, p. 36.
[39] 2013 GCOC Decision, p. 23.

this, we agree with the parties and consider the attainment of ROE to be a short-term risk and if FEI fails to earn its approved ROE in a given test period, it has the capability to initiate actions to resolve the matter in a short time span.

A second issue is whether there has been a change in FEI's ability to earn its ROE in a given year as compared to the period preceding the 2013 GCOC Decision. In the view of the Panel, there is no evidence to suggest there has been a change in this regard. FEI has historically been able, in most circumstances, to earn its ROE in a given test year and none of the parties have taken the position this is likely to change in the foreseeable future. Therefore, **the Panel finds the short-term risk of FEI earning its ROE to be similar to 2013.**

4.1.3 Impact of amalgamation

A noteworthy change that has occurred since the 2013 GCOC Decision is the amalgamation of FEI with FortisBC Energy (Vancouver Island) Inc. (FEVI) and FortisBC Energy (Whistler) Inc. (FEW) that was approved by the Commission on February 26, 2014 by Order G-21-14. This was consented to by the Lieutenant Governor in Council who thereby issued Order in Council No. 300. On December 31, 2014, the three companies amalgamated and are now collectively referred to as FEI. The issue to be considered in this proceeding is whether there has been a material difference in the level of risk assumed by FEI as a result of amalgamation or whether FEI's overall risk has remained unchanged from the period prior to amalgamation.

FEI points out that at the time of the amalgamation, both FEVI and FEW, as a result of the 2014 GCOC Stage 2 Decision had been granted a higher equity ratio and ROE than FEI reflecting the relatively higher business risk of the two entities.[40] However, in this same decision, the Commission stated that once amalgamation was in place and postage stamp rates implemented, the ROE and capital structure for the amalgamated entity would be the same as for FEI. The Commission continued by stating that if the cost of capital was not considered by the amalgamated entity to be indicative of current circumstances, it could make further application to the Commission as the amalgamated entity.

FEI states amalgamation as a factor affects FEI's business risk but is not the principal reason for FEI seeking an increase to either its ROE or common equity component. FEI remains a large natural gas distribution utility and many of the challenges of declining use per customer and low customer growth remain as existed pre-amalgamation. However, FEI does assert that as a result of the addition of these two new territories, there has been increased supply interruption risk related to its dependency on a single pipeline system traversing challenging terrain resulting in greater supply risk. As a result, the amalgamated FEI has exposure to factors resulting from amalgamation that contribute to "a slight increase in overall business risk."[41]

Mr. Coyne notes that FEI has increased its size since amalgamation but, because it was already a large gas distributer, the increase in size has no impact on its risk profile. He also points out that the transitional effects of amalgamation provide help to FEI's risk profile in the short term. Even considering the benefit of higher returns from FEVI and FEW, this does not raise FEI's credit metrics to a level where they fall within Moody's Investor

[40] British Columbia Utilities Commission Generic Cost of Capital, Stage 2 (2014 GCOC), Decision dated March 25, 2014.
[41] Exhibit B-1, pp. 2–3; Exhibit B-1, Appendix C, p. 1.

Services (Moody's) guidelines for the A rating category. The effect of amalgamation is a reduction in FEI's credit metrics, other factors being equal.[42]

Dr. Booth's assessment of the impact of amalgamation does not differ significantly from those of FEI or Mr. Coyne. In Dr. Booth's judgement, the amalgamation of FEI has not materially altered its risk or financial parameters. He recommends no adjustment in consideration of amalgamation noting this conclusion is in line with rating agency decisions which regard amalgamation as not material.[43]

Commission determination

The Panel has determined that the impact of amalgamation for the purposes of assessing FEI's business risk in this proceeding is minimal and has not resulted in any material change to FEI's business risk profile.

Based on the submissions of FEI and the expert witnesses, the Panel notes there is little disagreement among the parties that the impact of amalgamation on business risk is not significant. FEI states it has considered the extent to which its risk profile has changed as a result of amalgamation and describes the change to business risk as being slight. In addition, neither Mr. Coyne nor Dr. Booth makes a case for any significant change in risk resulting from amalgamation and the interveners made no comments in their submissions. Therefore, based on the evidence presented, there is little to justify that amalgamation has had any material effect on FEI's risk profile.

The Panel notes FEI has described the factors resulting from amalgamation that are primarily related to a single pipeline system over difficult terrain as resulting in a slight increase in overall risk but has not explored this issue in any depth. The Panel also notes that FEI focused no attention on the potential positive impact of amalgamation over time. A key element of the Commission decision on amalgamation was tied to moving ahead with postage stamp pricing where rates for most British Columbians will be common. This represents a significant improvement in the former FEVI and FEW customer rates while the impact on FEI's pre-amalgamation customers will be relatively modest. Over time, this has the potential to significantly improve the uptake and use of natural gas on Vancouver Island and Whistler and along with it, FEI's credit metrics, overall profitability and potentially, its risk profile. While not being a factor presently, the Panel considers this as an issue worthy of further examination in future proceedings.

4.2 Assessment of FEI's business risks

4.2.1 Background

An assessment of the level of business risk is a key element in reaching a determination on a common equity component for FEI's capital structure. The Commission has typically found the level of business and other risks are an important factor in determining the equity ratio in a utility's capital structure. In the 2013 GCOC Decision, the Commission determined an appropriate equity thickness for the benchmark utility was 38.5 percent which is 1.5 percent lower than the amount awarded in the 2009 TGI ROE Decision. The determination reached in the 2013 GCOC Decision was heavily influenced by the Commission's finding that there were a number of key risk

[42] Exhibit B-1, Appendix B, pp. 96, 99.
[43] Exhibit C7-7-2, p. 2.

areas where the level of risk had been reduced since 2009 therefore warranting a reduction in the common equity component.

FEI states that utilities are large consumers of equity and debt capital and the financial analyst community for equity investors and the credit rating agencies for debt holders carefully watch and thoroughly scrutinize its fundamentals. Credit rating agencies are particularly sensitive to the cash generated by approved returns to ensure that the interest on its debt can be serviced and the common equity proportion of a utility's capital structure as it provides security for lenders. FEI asserts that its common equity ratio should be increased to 40 percent because of the combination of what it refers to as an "upward trend" in business risk and relatively weak financial metrics.[44]

4.2.2 2016 assessment of business risks

FEI has identified eight risk areas as follows: regulatory risk, market shift risk, political risk, energy price risk, business profile, economic conditions, operating risk and energy supply risk. FEI notes that other risk factors are possible or could be captured differently, but states that relying on the same categories as used in the 2012 GCOC proceeding facilitates comparison of FEI's amalgamated risk profile since the categories are common to all three amalgamated entities.[45] FEI has summarized these business risks in comparison to the 2012 benchmark utility in Table 4.1 and ranked the importance of each.

[44] Exhibit B-1, p. 17.
[45] Exhibit B-1, Appendix C, p. 2.

Table 4.1: Change in Business Risk since 2012 and Business Risk Ranking[46]

Business Risk Category	Risk Factor	Total risk status since 2012, (all business changes incl. amalg.)	Risk status change due to amalgamation alone	Ranking of risk
Regulatory		**Same**		**1**
	Regulatory uncertainty and lag	Same	Same	
	Deferral accounting	Same	Same	
	Administrative penalties	Same	Same	
Energy Prices		**Same**		**2**
	Commodity prices	Lower	Same	
	Commodity price volatility	Higher	Same	
	Upfront and installation costs	Same	Same	
Market Shifts		**Same**		**2**
	New technology and energy forms	Same	Same	
	Perception of energy	Same	Same	
	Housing types	Same	Same	
	Changes in use per customer	Same	Same	
	Changes in the capture rates	Same	Same	
Political		**Higher**		**2**
	Energy policy and legislation	Same	Same	
	GHG emissions reductions initiatives and local governments policies	Higher	Same	
	Carbon tax	Same	Same	
	Aboriginal rights	Higher	Same	
Business Profile		**Same**		**2**
	Type and size of the utility	Same	Same	
	Energy product offering	Same	Same	
	Service area and customer profile	Same	Same	
Economic Conditions		**Same**		**2**
	Overall economic conditions	Same	Same	
Operating		**Same**		**3**
	Infrastructure integrity	Same	Same	
	Third party damages	Same	Same	
	Unexpected events	Same	Same	
Energy Supply		**Higher**		**4**
	Availability of supply	Same	Same	
	Security of supply	Higher	Higher	

FEI states that independent of the effect of amalgamation, FEI's business risk is "broadly similar" to what it was in 2012 but there are some differences that indicate there is somewhat higher business risk than what was reflected in the approved capital structure and ROE resulting from the 2013 GCOC Decision. Most notable among these is political risk where FEI has identified "GHG emission reduction initiatives and local government policies" and aboriginal rights as areas of increased risk. In addition to this, FEI has identified "commodity price

[46] Ibid., pp. 3–4.

volatility" (Energy Price Risk) and "security of supply" (Energy Supply Risk) and potential impacts related to Performance Based Rate-making (PBR) as areas where risk is higher or has the potential to be higher over the next period of time.[47] FEI identifies no areas where risk has been reduced since 2012.

Interveners are in general agreement with FEI on a number of risk areas where there has been little or no change since the last proceeding. Consequently, their submissions include minimal commentary on items such as market shift risk, business profile, economic conditions and operating risk. However, there is significant disagreement between the parties with respect to other risk categories. Both AMPC/BCOAPO and CEC disagree with FEI's stance on increased political risk as well as the impact of PBR on regulatory risk. In addition, the interveners have a different perspective than FEI concerning whether energy supply risk is slightly elevated as claimed by FEI or reduced somewhat. Finally, both AMPC/BCOAPO and CEC take the position that energy price risk is much lower due to current low energy price levels. This is in contrast to FEI's claim they are similar and overall energy price risk is elevated due to increased volatility.

This decision first addresses those categories and related issues where there is disagreement among the parties. These include the following:

- Regulatory Risk – Does the introduction of PBR materially increase risk?
- Political Risk – Do recent provincial and municipal activities concerning greenhouse gas (GHG) emissions reduction and municipal policies mean there has been an increase in overall political risk?
- Political Risk – Do recent First Nations-related court decisions mean that FEI faces greater risk?
- Energy Price Risk – Has continued downward movement in gas prices relative to electricity resulted in less risk to FEI?
- Energy Supply Risk – Has there been any material change in energy supply risk to FEI?

Following our review of the more controversial issues raised by the parties, the Panel briefly discusses the less controversial risk categories where there is general agreement among the parties concerning the lack of change in risk relative to the period dealt with in the 2013 GCOC Decision.

4.2.3 Key differences in views related to FEI's business risks

4.2.3.1 Impact of PBR

Mr. Coyne's evidence is that PBR is generally regarded as higher risk than cost of service regulation, a view FEI states is shared by the rating agencies.[48] Mr. Coyne states that although the specific PBR plan includes some moderating features, "the utility remains subject to the risk the formulaic PBR rates may diverge from just and reasonable rates if, for example productivity gains are not realized." Overall, Mr. Coyne states he considers the PBR to have very little risk in the near term but in later years "the Company will be harder pressed to find productivity gains under the Plan and earnings will be exposed to greater risk."[49]

[47] Exhibit B-1, pp. 12–14; Exhibit B-1, Appendix C, Tab 2, pp. 4–6.
[48] Oral Hearing Transcript Volume 2, p. 347; FEI Final Submission, p. 50.
[49] Exhibit B-1, Appendix B, pp. 74–76.

FEI submits there may be an increase in regulatory risk over the PBR term resulting from the potential of being unable to recover prudently incurred costs for exogenous events as a result of the PBR's materiality threshold or if the formula does not adequately compensate FEI for its capital expenditures. In addition, FEI notes the regulatory framework for the period following PBR has not been determined and remains unknown.[50] Also in its submission, the risk presented by PBR is a function of its design and some of the terms will pose greater risk as FEI moves through the PBR term.[51]

Intervener submissions

CEC submits that Mr. Coyne has placed too much emphasis on PBR risks and has not provided any commentary on the opportunities afforded by the model. It is CEC's position that PBR offers an upside potential which is at least equivalent to any additional risks. Further, CEC points out that Mr. Coyne under cross examination acknowledged that FEI has been able to earn its approved return and in many cases exceed it during periods when FEI has been under a PBR Plan and Mr. Coyne also acknowledges cost of service rate plans can be more risky than PBR. In addition, FEI has availed itself of the opportunity to earn above the allowed ROE under PBR and its history of overearning its ROE and the fact that it has a safeguard allowing it to exit the PBR framework eliminates any risk that could be ascribed to the approved PBR model. CEC also notes that the PBR model allows for relief from unexpected events where there are extraordinary situations.[52]

FEI reply submission

FEI also submits that the risk presented by PBR is a function of its design and some of the PBR terms will prove more challenging towards the end of PBR. FEI explains this is because there is potential for greater risk as it moves through the PBR term.[53]

Commission determination

The Panel is not persuaded by FEI's analysis that being under the current PBR plan contributes to increased regulatory risk over the longer term. **The Panel finds that business risk related to the introduction of PBR in this jurisdiction has not increased when compared with cost of service and may potentially offer FEI a greater opportunity for earnings during the PBR period.**

Mr. Coyne makes the assertion that FEI, over time, will be harder pressed to find productivity gains under PBR thereby exposing its earnings to greater risk. However, PBR as approved by the Commission is designed to allow productivity savings, once in place, to continue to benefit FEI for the entire PBR term. Thus, if FEI is able to make adjustments resulting in productivity gains early in the PBR period, it will continue to derive benefits from these changes for the term remaining under PBR. This offers FEI an incentive to establish their productivity gains early in the PBR term thereby maximizing the benefits accruing over the PBR period. Given that FEI has enjoyed an ROE in excess of the allowed ROE base in the first two years of PBR, it can expect to continue to benefit from these savings initiatives for the remainder of the PBR term assuming the productivity improvements continue.[54] Under a cost of service plan typically covering a one to three year period, the utility benefits from productivity

[50] FEI Final Submission, p. 50.
[51] FEI Reply Submission, pp. 32–33.
[52] CEC Final Submission, pp. 108–109.
[53] FEI Reply Submission, pp. 32–33.
[54] FEI Application for Approval of 2015 Delivery Rates pursuant to the Multi-Year Performance Based Ratemaking Plan approved for 2014 through 2019 by Order G-138-14, Exhibit B-1, p. 4; FEI Annual Review of 2016 Delivery Rates, Exhibit B-1, p. 4.

savings only to the end of that period. In the view of the Panel, this seems to favour FEI continuing to earn its ROE rather than presenting additional risk as implied by the comments made by Mr. Coyne.

FEI raises a concern as to the formula not adequately compensating FEI for its capital expenditures. The Panel notes a feature of PBR is the inclusion of a dead band which allows FEI to apply to rebase its capital expenditures covered by the PBR in the event actual costs exceed formula generated costs cumulatively over two years by greater than 15 percent or 10 percent in a single year.[55] The Panel acknowledges this PBR feature does not mitigate the risk of FEI exceeding its formula-driven capital expenditure limit in any given year but it does limit the impact on FEI's ROE.

With respect to FEI's ability to recover prudently incurred costs for exogenous events that fall under the materiality threshold, the Panel notes that a similar risk exists under cost of service where the materiality threshold may be applied but is not explicitly laid out. Therefore, if an exogenous event were to occur, the utility could seek relief by application to the Commission but the outcome would nonetheless remain at risk.

Given these circumstances, the Panel does not agree with FEI that there is increased material risk due to PBR. In the Panel's view, the existence of PBR is as likely to reduce risk as to increase it as FEI has control over its expense load and by its own acknowledgement has a proven ability to effectively manage its costs.

4.2.3.2 Political risk – recent provincial and municipal activities

FEI argues there are developments at all levels of government (municipal and provincial) that suggest a sharper upward trend in its political risk since 2012.

i) Local governments

FEI asserts that the willingness of local governments to dictate energy choices represents a material increase in risk for FEI. FEI asserts that municipalities have been making significant changes to their operations, policy, codes and regulations which are having a direct negative impact on natural gas throughput. Much of this issue concerns the City of Vancouver (COV), which represents approximately 13 percent of FEI's 2016 forecast load, but it is not restricted to that location. Some examples of changes in municipal operations, codes, policy and regulations are as follows:

- A requirement in COV that all new larger buildings be designed to strict energy standards with an energy reduction of 20 percent below 2007 levels by 2020 and carbon neutral by 2030.
- A requirement in COV that new one and two family homes include a number of sustainable features that focus on creating energy savings of up to 33 percent by 2020. Recent bylaw amendments mandate for boiler or furnace upgrades of over $5,000, the annual fuel utilization efficiency be equal or exceed 90 percent.
- Recent Richmond bylaws require new townhomes be designed to score 82 or higher on the EnerGuide Rating System and be solar hot water ready.

[55] FortisBC Energy Inc. and FortisBC Inc. Multi-Year Performance Based Ratemaking Plans for 2014 through 2019 Approved by Decisions and Orders G-138-14 and G-139-14 Capital Exclusion Criteria under PBR, Order G-120-15 with Reasons for Decision, pp. 16–17.

FEI states similar programs can be found in most municipalities that signed the Climate Action Charter. Specifically, FEI expresses concern with the COV's recent steps to endorse Creative Energy Vancouver Platforms Inc.'s Northeast False Creek and Chinatown projects with exclusive franchise for all space and water heating as a part of COV's Neighbourhood Energy Strategy. This will involve a mandatory connection obligation for developers and prevent FEI from competing for this future load. FEI's estimate is that the Neighbourhood Energy Strategy will represent an annual load of 10.5 PJ or 5 percent of its annual load. However, FEI does not suggest that this amount will be immediately lost and it has no growth forecasts for these areas or forecasts of the rate of redevelopment.[56]

ii) Provincial government policies and legislation

FEI states since the 2012 GCOC proceeding, the provincial government has introduced three minor modifications to existing regulations and has issued a special direction to the Commission for the development of liquefied natural gas (LNG) facilities. FEI acknowledges that these do not represent a change in policy since the last proceeding but note that the provincial emission reduction targets put in place in BC has a disproportionate effect on BC natural gas facilities.[57]

Of some concern to FEI is the fact the BC government has recently announced its plans to build on the success its 2008 Climate Action Plan by developing a new Climate Leadership Plan. While only in the initial development stage, this initiative does increase uncertainty. Further, a Climate Leadership Team has been formed which has recently submitted a series of recommendations to government. These include the following:

- A new GHG emissions reduction target from 2007 of 40 percent.
- The establishment of sectorial GHG reduction goals for 2030 (i.e. 50 percent for built environment and 30 percent for industrial sector focusing on the gas industry).
- An increase in the carbon tax.

FEI acknowledges the Climate Action Team recommendations would have greater weight in an investor's deliberations if they were already adopted. Nonetheless, FEI considers it appropriate for the Commission to consider this uncertainty in its deliberations.

FEI also points out the federal government's recent actions have confirmed Canada's intentions to pursue carbon emission reduction and climate change mitigation initiatives but again, there is nothing firm at this time.[58]

Mr. Coyne's opinion is the risks posed by initiatives undertaken at the provincial and municipal level remain "and are aggressive both in a Canadian and North American context."[59] Mr. Coyne makes no comments as to how these risks compare to what existed during the 2012 GCOC proceeding.

Dr. Booth states that many parties accept natural gas as a solution to the GHG problem pointing to a Canadian Gas Association study which shows even with continued expansion of the natural gas distribution system, GHGs

[56] Exhibit B-1, Appendix C, pp. 64–69; Exhibit B-4, CEC IR 44.1.
[57] Exhibit B-1, Appendix C, Tab 9, pp. 59–63.
[58] FEI Final Submission, p. 49; Exhibit B-4, CEC IR 45.1; Exhibit B-9, BCUC IR 51.1.
[59] Exhibit B-1, Appendix B, pp. 76–77.

are declining. This means the distribution system itself is getting cleaner. Dr. Booth does not see there being a requirement from the provincial government for residential users to modify their use of natural gas for space heating and replace them with more expensive electricity. If FEI does see such a consequence, Dr. Booth believes the correct response will be to perform a depreciation study and depreciate the assets more quickly to reduce any stranded risk thereby keeping FEI whole in terms of risk exposure. In conclusion, Dr. Booth's judgement is that FEI faces lower risk than in 2012 and there is no basis for concluding that its risk has increased.[60]

FEI argues that Dr. Booth's position concerning parties accepting natural gas as a solution to the GHG problem is counterintuitive in the context of a BC utility, makes more sense where natural gas is a clean alternative to coal, and ignores the evidence of local and provincial government action in British Columbia. Further, Dr. Booth's evidence on GHG emissions is based on Canada-wide statistics and not limited to BC and should not be given any weight in light of the limited applicability to this province.[61]

Intervener submissions

AMPC/BCOAPO accept there will be efforts to reduce GHGs over time but argues these will not affect FEI's ability to earn its return on or of its capital. AMPC/BCOAPO also acknowledge district energy systems may limit FEI's future growth in some areas (noting multi-family dwellings) but argue that this does not impact FEI's ability to be competitive. They assert that all the evidence supports natural gas remaining very competitive in its key residential market. AMPC/BCOAPO submit this offsets the price impact from future carbon policies and in addition, notes FEI has not been discouraged from undertaking a large capex program in spite of these policies.[62]

CEC submits that climate change is a real and emerging risk issue for FEI but points out there is an absence of a long-term resource plan outlining the nature of such risk and possible responses. In addition, CEC notes the BC provincial government removed a number of capital investment decisions involving LNG plant expansion and Natural Gas for Transportation (NGT) subsidies from the Commission and the Commission needs to be careful and not assume a risk that has not yet emerged with significant impact.

CEC agrees the mandatory connections in District Energy Systems pose an unrealized risk to FEI and submits the Commission needs to assess the likelihood of such scenarios proliferating in the future. CEC further agrees that there has been an increase in the intensity of local government green initiatives that may contribute to FEI's political risk. However, CEC tempers these comments by stating it is important to bear in mind that there is a 35-year time frame in the COV Neighbourhood Energy Strategy plan.[63]

ICG states there is no evidence local government green initiatives have significantly impacted FEI's operations and no material change to throughput can be attributed to municipally owned district energy systems. In addition, ICG asserts the steps taken by the COV are not recent and FEI was aware that both COV and local governments were considering the use of mandatory connections in 2012. ICG also asserts COV was considering the use of an investor owned utility prior to 2012.[64]

[60] Exhibit C7-7-2, pp. 79–80.
[61] FEI Final Submission, pp. 53–54.
[62] AMPC/BCOAPO Final Submission, p. 32.
[63] CEC Final Submission, pp. 111–113.
[64] ICG Final Submission, pp. 1–2.

More broadly, ICG states that there is no evidence from which the Commission can assess the effect or potential effect of mandatory connections and exclusivity of end-use requirements. It also states the actual implementation of local government policies related to mandatory connections may increase the risks facing FEI but there is insufficient evidence to conclude such policies have affected the cost of capital as FEI had not provided the cost competitiveness of natural gas energy sources.[65]

FEI reply submission

FEI acknowledges what it considers to be CEC's supportive comments but takes issue with CEC's comments regarding a 35-year timeline and its tempering effect on FEI's experiencing a less supportive environment. FEI agrees that the 35-year period is legitimate but the typical life of distribution assets is longer than 35 years and it must still invest to maintain safe and reliable service. Moreover, FEI notes that CEC concedes there are more immediate impacts associated with mandatory connection policies. FEI concludes by stating, "irrespective of the time frame, it is undeniable that the number of customers and the amount of throughput at issue is very significant."[66]

FEI asserts that AMPC/BCOAPO have avoided discussing new government initiatives at the federal, provincial and municipal level. Additionally, FEI describes AMPC/BCOAPO's comments regarding its capex program as a "red herring" pointing out that most of its expenses primarily serve the export markets and natural gas vehicles and are not related to serving its core heating load. Further, FEI describes AMPC/BCOAPO's comments concerning price competitiveness as being of little assistance when customers desire low carbon district energy or when FEI is prohibited from attaching or serving customers.[67]

Concerning ICG's submissions regarding the timing of the steps taken by the COV, FEI submits the relevant inquiry in this proceeding is how FEI's current business risk was reflected in the Commission's deliberations in the 2012 GCOC proceeding. FEI points out they did not figure prominently in FEI's evidence nor were they commented upon by the Commission in its 2013 GCOC Decision. Further, mandatory connections have become a big issue in recent months and are accompanied by a plan which contemplates ending natural gas consumption in COV, a policy ICG has left unaddressed.[68]

Commission determination

The Panel determines that the level of political risk has slightly increased since the 2013 GCOC Decision.

Based on the evidence, the Panel agrees there is considerably more activity at the municipal and provincial level with respect to climate related initiatives and policies than in the 2012 GCOC proceeding and the subject is more topical than it was at the time of the last hearing. However, as noted, the question the Panel must address is whether there is additional material risk associated with these activities than existed when the 2013 GCOC Decision was made.

[65] ICG Final Submission, pp. 3–4.
[66] FEI Reply Submission, p. 22.
[67] FEI Reply Submission, p. 23.
[68] FEI Reply Submission, p. 24.

FEI has relied heavily on recent steps taken by municipal governments with respect to policy development and recent activities undertaken at the provincial government level to support its assertion that the level of material risk has increased.

The Panel agrees the recent steps taken by some municipal governments, most notably the COV have the potential to affect the level of future demand and, at least to some extent, pose a threat to FEI's ability to earn a future return on and of its capital. However, the Panel also agrees with AMPC/BCOAPO's assertion that in spite of governmental efforts to reduce GHGs over time, it will not impact FEI's ability to remain competitive, at least in the short to medium term. The key issue is one of timing and the level of knowledge related to potential impacts. Based on the evidence presented, there is only limited knowledge and a great deal of supposition as to how various issues will ultimately be resolved and the timeframes involved. As pointed out by CEC, the Commission needs to bear in mind the COV's Neighbourhood Energy Strategy represents a 35-year time frame. The Panel agrees and understands that over a time period of this length, there is no certainty as to the eventual outcome.

FEI has expressed concern with the government's recent announcement to develop a new Climate Leadership Plan and the team working on this has already made a number of recommendations. FEI acknowledges the recommendations "would have greater weight in an investor's deliberations at present if they were already adopted…" but argues that significant additional investor uncertainty is created by the potential for future political risk. The Panel finds the steps taken by the provincial government to develop a new Climate Leadership Plan pose a potential threat to possible future demand for natural gas but as acknowledged by FEI, none of the recommendations have been adopted and there is no evidence they will be adopted in the near future.

The Panel notes a common way to approach the assessment of risk is to clearly define the situation and the threat that exists and then determine the magnitude of any potential loss resulting from the threat and the probability of it occurring.

FEI has provided a broad description of the threats it believes to exist but has not provided clarity as to the impact or financial loss resulting from these threats. This point is made by ICG who states there is no evidence to support the effect of mandatory connections and exclusivity of end-use requirements. FEI has made assertions with regard to its estimate of the size of load represented by COV's Neighbourhood Energy Strategy. However, FEI acknowledges it is not suggesting this amount will be immediately lost and further reports there are no growth or rate of redevelopment forecasts for the areas covered by the strategy. CEC has agreed that mandatory connections pose an unrealized risk to FEI but notes there is a need for the Commission to assess the likelihood of this proliferating in the future. In the Panel's view, FEI has not addressed this in its evidence.

The lack of detail provided by FEI makes it very difficult to determine the level of risk that exists and its ultimate impact on FEI. Therefore, given the lack of certainty with respect to what lies ahead, the Panel cannot with any degree of confidence, do more than to acknowledge there is a heightened level of potential threats resulting in a slight to moderate increase to the level of political risk when compared to the period around when the 2013 GCOC Decision was rendered. The Panel views the change in the political landscape to be a risk that is evolving and will need to be monitored in future proceedings.

4.2.3.3 Political risk – First Nations

FEI states its ability to construct and operate infrastructure necessary to provide timely service has an influence on attracting and retaining customers. FEI explains that delays in permitting or interference with construction impacts the level of risk to the extent that it discourages new customers or prevents them from serving customers. In consideration of these factors, recent court decisions with respect to First Nations engagement have had a material effect on risk levels as compared to 2012 as they have changed First Nations' and others' ability to influence project implementation and timelines.[69]

Mr. Coyne agrees the presence of 285 different aboriginal First Nations may lead to additional regulatory process. In his view, this impacts FEI's risk profile by adding potential for protracted regulatory or political proceedings.[70]

Intervener submissions

AMPC/BCOAPO state that Terasen Gas Inc. (now FEI) made a similar argument in the 2009 TGI ROE proceeding. In that decision, the Commission noted court decisions post-2005 did constitute an increase in risk over local distribution companies in other provinces, but did not consider that such risk casts doubt on the utility's ability to earn a return on or of its capital. AMPC/BCOAPO argue FEI has made no substantial connection between recent jurisprudence and its operations that raise doubts as to its ability to earn its return. Consequently, the Commission should reject any suggestion this should drive an increased return.[71]

CEC states it agrees that aboriginal rights continue to create uncertainty for businesses operating in BC. However, there is no evidence of a change in risk profile for FEI nor is there evidence suggesting FEI will not continue to manage First Nations relations effectively and efficiently.[72]

FEI reply submission

With reference to AMPC/BCOAPO's submissions, FEI notes that in the 2009 TGI ROE Decision, the Commission's finding stated "presently" the risks did not cast doubt over the utility's ability to earn a return on or of its capital. FEI reaffirms its position that presently there is potential for Aboriginal rights and title issues to impede FEI's ability to add and maintain throughput thereby having the effect of regulatory lag in capital approvals. FEI points out that because AMPC seems to agree that regulatory lag is an accepted risk factor, any lag related to First Nations issues should be viewed in the same light.[73]

Commission determination

The Panel agrees with AMPC/BCOAPO and CEC and finds the evidence is not persuasive that any change in the threat to FEI's operation caused by recent jurisprudence will have a material effect on the utility's ability to earn a return on and of its capital. As noted by CEC, there is no evidence to suggest that FEI will not continue to be successful in managing its relations in an effective and efficient manner. The Panel agrees and notes that FEI has provided no firm evidence as to the probability of project lag or its impact on earning a return.

[69] Exhibit B-1, Appendix C, Tab 9, p. 72; FEI Final Submission, p. 49.
[70] Exhibit B-1, Appendix B, p. 63.
[71] AMPC/BCOAPO Final Submission, pp. 32–33.
[72] CEC Final Submission, p. 113.
[73] FEI Reply Submission, p. 26.

4.2.3.4 Energy price risk

FEI separates the energy price risk category into risk type as follows: natural gas commodity price risk, commodity price volatility risk and the price competitiveness of natural gas (includes upfront and installation costs). FEI's position is collectively, these give rise to a similar level of risk to what existed in 2012.

FEI acknowledges commodity prices are reduced from 2012 but have outlined a number of factors to help explain why the impacts of changes in commodity prices do not translate directly to changes in overall risk. In support of its position, FEI makes the following points:

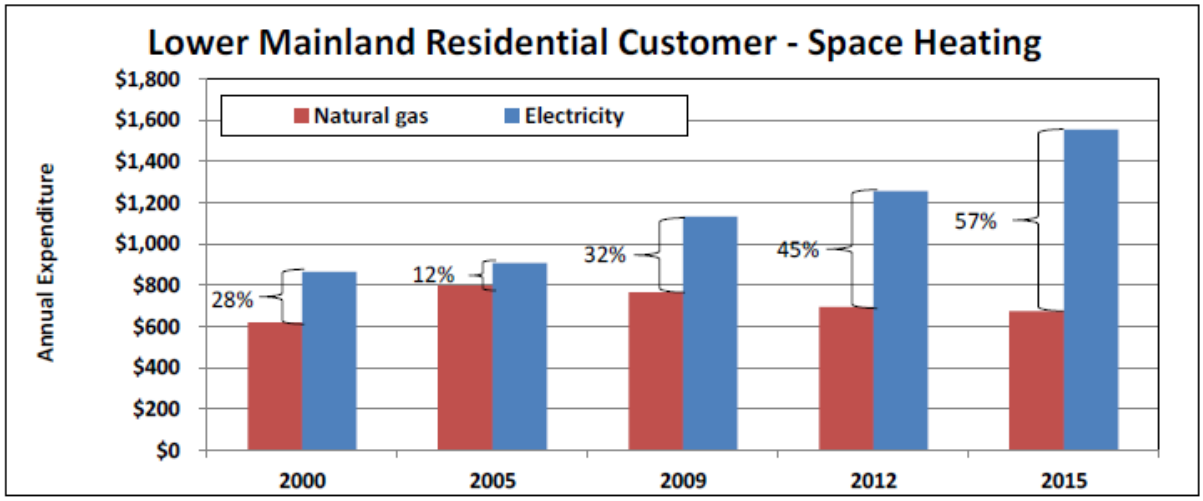
- The capital cost differential between gas and electricity are substantial but developers and builders are the primary decision makers and do not see the operating savings;
- Commodity price volatility has increased since 2012 and while customer rates do not fluctuate with every price change, they remain exposed. In addition to their bills, customers' perceptions are influenced by what they hear on the news; and
- The effect of commodity costs on the total bill is less than in 2012. The commodity prices in 2012 already constituted a small portion of the overall LNG delivered price and therefore, the impact on risk of a price change is in and of itself muted.[74]

Intervener submissions

AMPC/BCOAPO submit that while FEI's bills are similar to five years ago, it does not tell the whole story. AMPC/BCOAPO have identified competitiveness as likely the most important determinant of FEI's business risk and submit that the cost of natural gas by itself tells us little about FEI's competitiveness. The genesis of their position is that energy prices have continued to decrease over the last 10 years yet, customer total billing is similar to what it was five years ago and FEI's rates are now much lower than BC Hydro's. As a result, FEI is in an advantageous competitive position relative to BC Hydro. Figure 4.1 shows the relative cost of natural gas compared to electricity for lower mainland space heating for the period from 2000 through 2015.

[74] Exhibit B-9, BCUC IR 27.1, 27.3; Exhibit B-1, Appendix C, p. 46, pp. 51–56; FEI Final Submission, pp. 42–44.

Figure 4.1: Space Heating Price Comparison[75]



Notes:

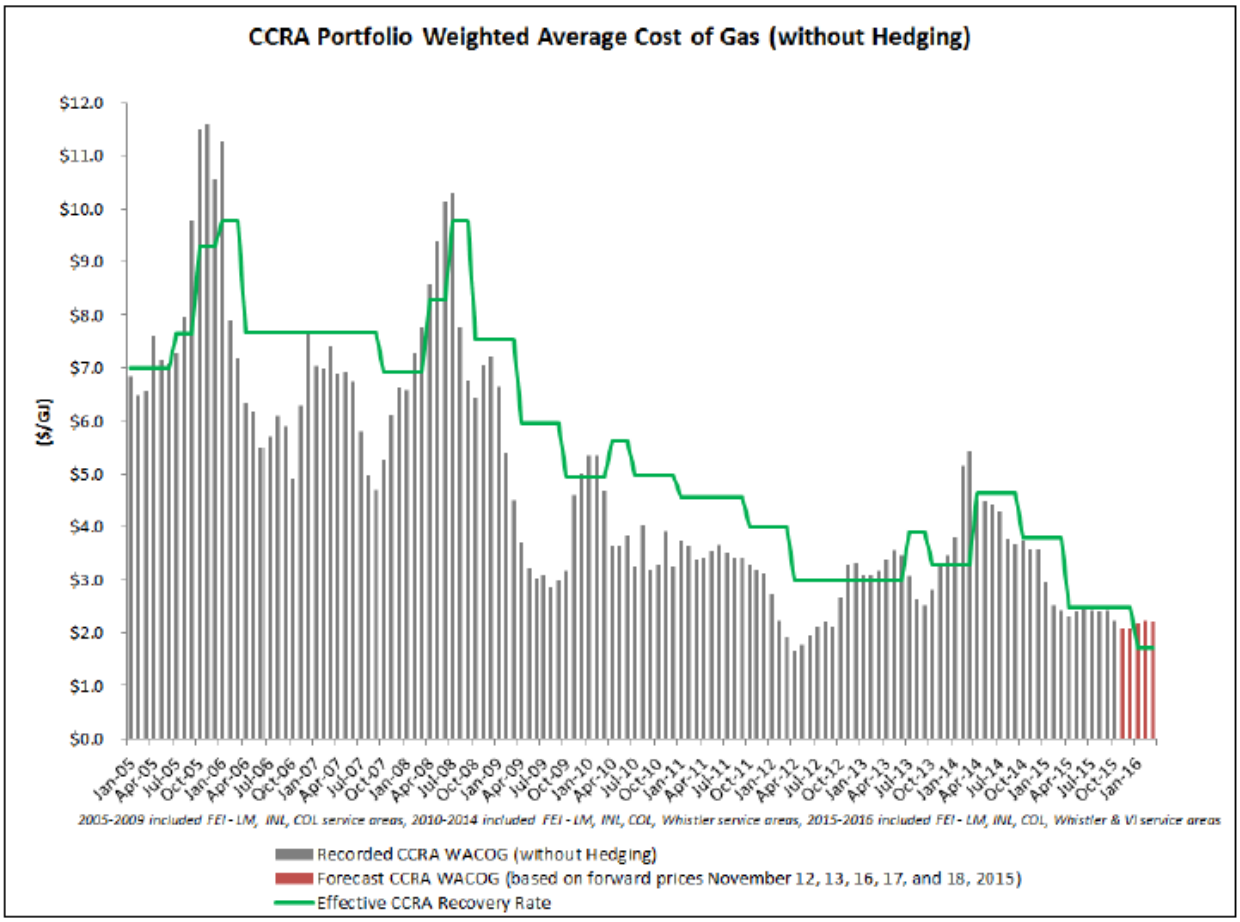
1. Estimated residential bills are based on prevailing rates on July 1 of each specified year with the exception of 2015, where FEI rates are effective August 1, 2015
2. The estimated bills have been calculated by FEI and may differ from actuals

AMPC/BCOAPO point out the evidence shows a positive trend for FEI in its key residential market since 2005 and in the present context, the Commission can definitely conclude gas is more competitive than in its prior reviews. They also point out that in the future, significant electricity rate increases are likely due to anticipated high capital, electricity supply, operating and maintenance costs and large deferral account balances. AMPC/BCOAPO state FEI's competitive advantage over BC Hydro "has increased more since 2012 than it did between 2009 and 2012." Further, they assert this was a key factor in the Commission's 2013 GCOC Decision and suggest "a reduction at least equal to the 1.5 % 2013 reduction in FEI's common equity ratio" in the present circumstance.[76]

Concerning commodity price volatility, AMPC/BCOAPO argue that risk is lower now than in 2013 and reject FEI's claim that risk has increased since 2013. It is AMPC/BCOAPO's position that FEI's evidence, as presented in Figure 4.2, indicates there was high price volatility between 2005 and 2009 and with less volatility since that time.

[75] Exhibit B-7, AMPC IR 2.12.
[76] AMPC/BCOAPO Final Submission, pp. 21–25.

Figure 4.2: Weighted Average Cost of Gas[77]



The most important of these issues to AMPC/BCOAPO is that prices have varied around a lower level. In their view, the likelihood of stable pricing is greater and except for short periods of price disconnects, the risk of dramatically higher natural gas prices remains significantly lower. AMPC/BCOAPO note that consumers might not like significant price volatility, but state it can be assumed in the current low price environment that price fluctuations are less of a deterrent to natural gas use than in the previous high price environment.[78]

CEC makes submissions similar to AMPC/BCOAPO with respect to the competitive pricing advantage FEI has over BC Hydro and does not consider volatility to be an evident concern for customers. CEC submits the overall cost of gas is the most important consideration in customer decision making and recommends the Commission heavily weight the favourable cost of gas and its comparison to electricity and place less weight on the short-term volatility occurrences as it does not affect the customer in any significant way given the current circumstances. Overall, CEC recommends the Commission find "there is no appreciable price risk or volatility risk for natural gas and the overall risk is lower than in 2012 because of prolonged periods of low natural gas prices."[79]

[77] Exhibit B-9, BCUC IR 27.1.
[78] AMPC/BCOAPO Final Submission, pp. 21–22.
[79] CEC Final Submission, pp. 79–88.

FEI reply submission

FEI contends AMPC/BCOAPO and CEC give insufficient weight to factors that mute the impact of reduced prices on FEI's overall competitiveness. It is the increase in the price of electricity rather than a drop in natural gas prices that is the main contributor to improved price competitiveness and lower commodity costs have not translated into lower natural gas bills. FEI asserts the interveners are glossing over the fact it is the consumer's response to changes in relative cost and not the changes themselves that ultimately impacts the company. Despite improved price competitiveness since 2012, the following has occurred:

- Throughput is lower in 2014 than in 2012.
- Use per Customer continues to trend downward.
- FEI continues to lose market share in core space heating and water heating applications.

FEI explains the weak relationship between price competitiveness and these results as being influenced by the following factors:

1) Demand for natural gas is inelastic where a reduction in cost does not result in a similar change in consumption.
2) Factors such as government policies and consumer attitudes about carbon emissions have contributed to the decoupling of price competitiveness from its key indicators.
3) Higher upfront capital costs related to gas appliances and potential main extension test customer contributions continue to be a barrier for builders or developers adopting natural gas.[80]

Commission determination

Because of the importance placed on it by consumers, the Commission in the 2013 GCOC Decision considered energy price to be a key determinant and deserving of significant weight when considering changes to FEI's risk. In the 2013 GCOC Decision, the Commission found there was some reduction in the level of risk related to natural gas' competitive position relative to electricity. The question in this proceeding, as raised earlier is whether the continued improvement in the price of gas has resulted in any further reduction of FEI's risk.

The evidence is clear and points to the fact that the price of gas continues to drop as compared to electricity. As outlined in Figure 4.1, the annual expenditure price differential for lower mainland space heating has increased from a price advantage of 45 percent favouring natural gas in 2012 to a 57 percent advantage for natural gas in 2015. The Panel acknowledges that on the basis of price, the competitive advantage of natural gas has improved over what existed in 2012. However, we also acknowledge there was a substantial price advantage that existed in 2012 resulting in reduced risk as noted in the 2013 GCOC Decision.

In spite of what is clearly a growing competitive price advantage favouring natural gas, FEI reports that key indicators such as throughput, use per customer and market share of core space and water heating applications remain unfavourable. FEI has explained that inelasticity of demand, government policies and consumer attitudes about carbon emissions and higher upfront capital costs have contributed to the decoupling of price competitiveness from the key indicators. The Panel accepts that these factors may be responsible for decoupling

[80] FEI Reply Submission, pp. 26–27.

but suggest that it is equally plausible other factors such as demand side management and weather have had an impact on FEI's more recent key indicator performance.

The Panel continues to put weight on the importance of a competitive price advantage for natural gas over electricity in determining the level of risk for FEI. Therefore, the fact that the gap between natural gas and electricity continues to widen must be given some weight when determining whether the level of energy risk has changed since the 2012 GCOC proceeding. Tempering this somewhat is the fact that some of FEI's key indicators have continued to lag, in spite of a growing competitive price advantage favouring natural gas. **Taking these factors together, the Panel finds the level of energy price risk to have decreased somewhat when compared against the 2013 GCOC Decision.**

4.2.3.5 Energy supply risk

FEI states the continuity of energy supply risk has also remained unchanged since 2012. However, the amount of gas available to FEI could be altered due to the development of several gas infrastructure projects connecting BC deposits with Alberta and with eastern markets in coming years. FEI states this could ultimately impact what customers pay in the coming years. In addition, FEI notes the addition of FEVI and FEW comes with slightly increased exposure to security of supply risk. This is due to its system crossing radial terrain and the Strait of Georgia as well as the fact Whistler is served by the pipeline lateral between Squamish and Whistler which is subject to single point of failure risk.[81]

Mr. Coyne states the expansion of natural gas fired demand related to the retirement of coal plants along with new LNG exports and potential requirements south of the border could result in a capacity shortage on Spectra's T-South pipeline thereby increasing volatility and commodity prices. While acknowledging pipeline expansions are an option, Mr. Coyne's view is the risks with projected additional gas demand in the Pacific Northwest and BC will continue to grow when considered against the availability of pipeline capacity.[82]

Dr. Booth cites data from Canadian Gas Association (CGA) which in their latest analysis states that Canada has over 200 years supply coverage at current production rates. Dr. Booth comments that with such a plentiful cheap resource to distribute "we should expect an expansion in supply which is what happened as there has been significant expenditure on the distribution system." Citing CGA, he notes that 2014 expenditures on pipeline expansion total $1 billion with a further $2.6 billion in distribution spending. This, he states, indicates the industry does not envision long run market problems.[83]

<u>Intervener submissions</u>

AMPC/BCOAPO submit supply risk has been reduced due to further development and quantification of BC's shale gas resources noting this is confirmed by Nova Gas Transmission Ltd.'s (NGTL) further expansion. AMPC/BCOAPO do not consider the security of natural gas supply to be at issue given its important role in the province's future. Further, they submit the province is committed to development of BC's natural gas resources and state there is "no reason to suggest that appropriate infrastructure will not be extended to a resource located in the Province in order to serve the needs of BC customers when it is needed." Nor is there a reason to

[81] Exhibit B-1, Appendix C, p. 46, pp. 51–56; FEI Final Submission, p. 45.
[82] Exhibit B-1, p. 66.
[83] Exhibit C7-7-2, pp. 70–71.

believe gas price competitiveness will be inadequate to support paying for any needed infrastructure by customers. In AMPC/BCOAPO's view, the importance of security of supply is minor in comparison to availability of supply where there is an abundance of the resource in the ground.

AMPC/BCOAPO also submit that amalgamation has resulted in no change to total supply risk as there is no change in the physical risks the combined operations face.[84]

CEC submits the growing use of pipeline capacity could present supply risks but these risks are not attributable to FEI if the utility has reserved adequate capacity for its customers' needs. CEC points out that Mr. Coyne agrees it is the utility's responsibility to look ahead and contract for access to infrastructure reserve opportunity and FEI has a sophisticated gas purchasing group responsible for this. CEC submits that if FEI conducts appropriate planning activities, it is unlikely there will be a gas supply interruption and the Commission "should find it straight forward to assess that the gas supply risk is unchanged and manageable by FEI in the relevant future for this ROE and CEC determination."[85]

CEC submits the FEI characterization of supply availability risk as being unchanged from 2012 is accurate. It notes FEI has acknowledged that supply interruption risk from FEVI and FEW is marginal and those related to amalgamation are modest. Given the marginal nature of the increase in amalgamation risk and the offsetting reduction in risk for interruption of pipeline supply resulting from the Lower Mainland Intermediate Pressure System Upgrade, CEC submits the Commission should consider this as a net reduction in risk.[86]

FEI reply submission

FEI does not share AMPC/BCOAPO's view that availability of supply risk has declined since 2013. It is FEI's view that the production forecast for the Western Canadian Sedimentary Basin indicates the expected production level is lower in the spring of 2015 than it was in 2012, indicating large shale gas reserves will not result in higher production levels. Additionally, NGTL's proposed extensions could potentially represent a challenge to FEI resulting in lower use of Westcoast's T-North and T-South transmission systems impacting the Station 2 marketplace FEI relies upon for much of its supply requirements.

For clarity, FEI notes its evidence is that the security of supply risk is "slightly increased" because of FEVI and FEW being incorporated into its system and FEI has not characterized supply risk as higher than in 2013 because of factors related to bringing gas from northern BC to its system.

FEI rejects CEC's argument that any increase in amalgamated FEI's security of supply is offset by proposed or approved integrity and sustainment projects pointing to their response to BCUC IR 50.2[87]where it was stated that the projects were needed to operate the gas system in a safe and reliable manner.[88]

[84] AMPC/BCOAPO Final Submission, pp. 29–30.
[85] CEC Final Submission, pp. 67–69.
[86] CEC Final Submission, pp. 71–72.
[87] Exhibit B-10, BCUC IR 50.2.
[88] FEI Reply Submission, pp. 33–35.

Commission determination

The Panel finds there has been no change in the level of risk associated with availability of supply and agrees with FEI that the security of supply risk is slightly increased due to the amalgamation of FEVI and FEW into FEI's system.

The Panel rejects AMPC/BCOAPO's assertion there has been a reduction in risk associated with availability of supply as compared to 2012. In the 2012 GCOC proceeding, adequate supply or availability of gas was not an issue and since that time, there has been no significant change in circumstances. However, the Panel agrees with FEI that there has been some change in the risk associated with security of supply due to amalgamation of FEW and FEVI into FEI. In the 2014 GCOC Stage 2 Decision, the Commission found FEI and FEW had additional supply interruption risk when compared to FEI but described them as marginal. In addition, the Commission found that while the possibility of an event related to difficult terrain may exist, the probability of such an event is very low. The Panel notes there is no evidence in this proceeding to suggest that this risk related to terrain has abated. However, as noted in the 2014 GCOC Stage 2 Decision, the probability of an event is very low and therefore is not considered to be a material increase in risk.

4.2.4 Other risk areas

As outlined earlier in this section, there were a number of risk categories where there was general agreement among the parties there was little change in the level of risk as compared to the period preceding the 2013 GCOC Decision; these include risks associated with operating, market shift, economic conditions and business profile.

Operating risk

Operating risk covers any physical risks to the utility system arising from technical and operational factors which includes items like asset concentration, technologies employed to service, geography in the service area and weather. FEI states that since 2012, there has been no change to the level of operating risk of facilities in the mainland service area. FEI also states the amalgamation of FEI with FEVI and FEW has posed no additional operational risk. FEI has focused its assessment on three areas; infrastructure integrity, third party risks and unexpected events. FEI has assessed its infrastructure integrity and although two-thirds of the current assets will need to be replaced over the next 40 years, acknowledges this was understood in 2012 and the risk remains similar for the amalgamated utility. The incidence of third party damage has been decreasing since 2006 and FEI notes this trend was understood in 2012 and has assessed the risk to the amalgamated utility to be similar to that faced by FEI in 2012. The incidence of natural events is one of the higher operating risks to FEI but remain materially unchanged from what existed in 2012.[89]

Neither AMPC/BCOAPO nor CEC take issue with FEI's assessment of its operational risk and both agreed there was no change since last reviewed in 2012.[90] ICG provided no specific submissions with respect to operating risk.

[89] Exhibit B-1, Appendix C, pp. 57–58.
[90] AMPC/BCOAPO Final Submission, p. 33; CEC Final Submission, p. 66.

Market shift risk

Market shifts in the areas of new technology and energy forms, changing customer perceptions of energy and types of homes being built continue to pose challenges to FEI in terms of its ability to attract and retain customers and maintain its market share and throughput levels. FEI has provided a brief description and update for each of these factors and outlines impacts on use per customer and customer additions. FEI submits each of these areas provide similar risks for FEI at present as has existed in the 2012 GCOC proceeding even when considering the effects of amalgamation.[91]

AMPC/BCOAPO, while finding FEI's use of the term "market shifts" misleading and preferring to use the term "market demand," nonetheless seem to agree with FEI's assessment that there is little change with this risk and notes that the utility's customer profile remains very stable. Likewise, CEC prefers to label this group of risks as volume and demand risk but agrees with FEI that the level of risk is likely to differ little from what existed at the time of the 2013 GCOC proceeding. ICG did not specifically address market shift risk but did submit that the Commission should reject loss of market share as a business risk as there is not enough evidence on the record to reach such a conclusion.[92]

Economic conditions

FEI states that economic conditions have an impact on a utility's ability to attract and retain customers and maintain throughput levels and the current economic environment continues to be dominated by uncertainty. The recent drop in oil prices has had a negative impact on GDP growth but this could be partially mitigated by a weaker Canadian dollar combined with the relatively strong US recovery leading to a potential improvement in exports. Given these circumstances FEI assesses the risk related to economic conditions as similar to what existed at the time of the last proceeding.[93]

As noted in Section 3.2 above, there is little disagreement among the parties that the economic condition on the BC economy is not materially different from the 2012 levels.

Commission determination

The Panel finds there has been no change in the level of risk associated with operating risk, market shift risk or economic conditions as compared to what existed at the time of the 2013 GCOC proceeding. In each of these areas, FEI has assessed the factors related to these risks and concluded there is continuity in the level of risk for each, acknowledging this is also the case when considering any additional impacts caused by amalgamation. Interveners either agreed with or took no issue with FEI's conclusions on these risk areas.

4.3 Other items impacting capital structure

FEI submits, in addition to its level of business risk, the following points support a common equity component of 40 percent for FEI as being consistent with the Fair Return Standard:

[91] Exhibit B-1, Appendix C, pp. 39–50.
[92] AMPC/BCOAPO Final Submission, p. 25; CEC Final Submission, p. 96; ICG Final Submission, p. 3.
[93] Exhibit B-1, Appendix C, p. 15.

- FEI's financial metrics, which reflect its allowed ROE and capital structure, are weak for a credit rating in the "A" category and if FEI was to receive a rating downgrade this could adversely impact both its ability to borrow and the cost of borrowing;
- An increase in its common equity component will support FEI's ongoing debt issuance capacity under the Trust Indenture; and
- A comparison to its peers indicates FEI's proposed common equity component is appropriate, but at the low end of the range of reasonableness.[94]

4.3.1 Credit ratings and access to capital

Moody's July 20, 2015 credit rating on FEI stated:

> FEI's credit quality is driven by its credit supportive regulatory environment and its monopoly position. The company has a long term track record of earning its allowed return on equity and its cash flow continues to be highly predictable. This is offset by the company's weak financial metrics, with limited headroom at the current rating level, that are primarily a product of the allowed return on equity and the equity component of its capital structure.[95]

FEI presents the following table outlining its key financial indicator scores compared to the minimum A3 rating per Moody's utility rating methodology:

Table 4.2: FEI's Credit Metrics from 2011 to 2014[96]

	FEI's Score	A3 - Rating Threshold[24]	2011	2012	2013	2014
CFO pre-WC + Interest / Interest	Ba	4.5x	2.3x	2.5x	2.7x	2.8x
CFO pre-WC / Debt	Baa	19.0%	11.2%	14.5%	15.1%	14.4%
CFO pre-WC - Dividends / Debt	Baa	15.0%	6.6%	9.6%	8.0%	10.3%
Debt / Capitalization[25]	A	50.0%	47.4%	44.0%	43.6%	45.2%

FEI notes that with the exception of its Debt to Capitalization ratio, all of its financial metrics are below the Moody's designated threshold for an A3 rating and are generally weaker than its Canadian peer group.[97]

FEI stated that it has not been rated below A3 since 2011 and in 2013, Moody's changed FEI's credit outlook to negative due to the reduction in ROE and common equity ratio in the 2013 GCOC Decision. FEI also indicated that its Moody's rating was eventually amended back to stable in June 2014.[98]

FEI states that Moody's reaction to the 2013 GCOC Decision highlights the risk to FEI's current rating, which is influenced by FEI's relatively weak credit metrics.[99] However, FEI acknowledged that while credit metrics represent a large weighting of the overall methodology, weak credit metrics can be offset by qualitative factors such as strong regulatory support.[100] Nonetheless, a further weakening of these metrics in connection with an adverse regulatory decision on common equity component or ROE would place downward pressure on the

[94] FEI Final Submission, p. 56.
[95] Exhibit B-1, Application, Appendix A, Moody's Investor Services, Credit Opinion: FEI (Moody's Credit Opinion), dated July 20, 2015.
[96] Exhibit B-1, p. 25.
[97] Exhibit B-1, p. 25.
[98] Exhibit B-9, BCUC IR 8.1.
[99] Exhibit B-1, pp. 24–25.
[100] Exhibit B-9, BCUC IR 8.3.

rating.[101] FEI points out that according to Moody's July 2015 Credit Opinion, a weakening of credit metrics in connection with a material adverse regulatory decision could result in a rating downgrade.[102]

Mr. Coyne states that since FEI is rated Moody's A3 and this is the lowest rung in the A rating category, FEI's higher capex spending in the near term may result in downward pressure on FEI's credit metrics and could result in a ratings downgrade.[103]

With reference to its July 2015 Credit Opinion, Mr. Coyne notes Moody's assessment states a ratings downgrade is unlikely.[104] However, Moody's opinion indicates there are several factors that could lead to a downgrade including "an unexpected, material adverse regulatory decision or a forecast of a sustained deterioration in credit metrics including CFO/pre-W/C to debt of less than 11%."[105] Moody's currently calculates FEI's March 31, 2016 "CFO/pre-W/C to debt metric at 15.0%."[106]

Mr. Coyne states that a downgrade below an A rating grade is particularly significant in the Canadian credit market due to the following:

- Canada has less trading of debt with a rating below the A ratings grade;
- Institutional investors often face limits investing in Baa/BBB debt; and
- During the financial market dislocation of 2008 and 2009, regulated issuers below an A credit rating, were effectively shut out of the Canadian credit market.

Mr. Coyne also continues that given FEI's expected financing requirements for its large capital projects, a downgrade to below an A rating would result in higher financing costs and "should be avoided."[107] He refers to Moody's most recent credit opinion which states FEI has "limited financial headroom" at the current rating and that large capital projects are expected to place downward pressure on credit metrics in 2015 with improvement forecast as capital projects are completed in 2016 and 2017. In his direct testimony, Mr. Coyne includes a quote from the Moody's July 2015 Credit Opinion which speaks to this. The Panel notes that the last sentence of the paragraph which states that with respect to the downward pressure on credit metrics "this forecasted weakness is incorporated in the current rating"[108] was not included.

Dr. Booth concludes FEI can access the bond market on more favourable terms than in 2013 and in doing so, it will continue to lower its embedded debt cost, increase its interest coverage ratio and enhance its financial flexibility.[109]

Dr. Booth notes "DBRS has long maintained the exact same 'A' rating on FEI and its predecessor companies through periods when it had a 33% common equity ratio, a 35% common equity ratio, a 40% common equity

[101] Exhibit B-9, BCUC IR 9.1.
[102] Exhibit B-1, Application, Appendix A, Moody's Credit Opinion, p. 3; Exhibit B-9, BCUC IR 8.3.
[103] Exhibit B-1, Appendix B, p. 97.
[104] Exhibit B-1, Appendix A, Moody's Credit Opinion, p. 3, the report states that Moody's does not expect the rating to go down.
[105] Exhibit B-1, Appendix A, Moody's Credit Opinion, p. 3.
[106] Exhibit B-1, Appendix B, p. 97.
[107] Exhibit B-1, Appendix B, pp. 97–98.
[108] Exhibit B-1, Appendix A, Moody's Credit Opinion, p. 3.
[109] Exhibit C7-7-2, p. 35.

ratio and most recently a 38.5% common equity ratio."[110] Moreover, he asserts "the guidelines are heavily based on the degree of regulatory protection, where 50% of the weight applied by Moody's is explicitly for this and not the financial metrics. Consequently, the metrics are not the most important issue."[111]

FEI observes that Moody's downgraded FEI's rating from A2 to A3 in 2005 because it considered FEI's financial profile weak relative to global peers and despite receiving increases in ROE and common equity component in subsequent decisions, Moody's has never upgraded FEI's rating back to A2.[112]

FEI submits:

- A combination of financing requirements for capital project, maturity of purchase money mortgages (PMMs) and rising interest rates have the potential to constrain its ability to issue debt under its Trust Indenture at the current common equity ratio. FEI submits that a 40 percent equity ratio will alleviate these factors, and will help to support FEI's credit rating.
- A reduction in allowed common equity, particularly a reduction approaching the levels Dr. Booth has recommended, would have the double impact of constraining debt issuance capacity and making a rating downgrade likely.[113]
- Maintaining an A credit rating is important because the benefits include: a lower cost of borrowing, access to capital markets and credit with FEI's counterparties.
- Maintaining an A credit rating ensures access to the capital markets on reasonable terms and pricing in all market conditions including a market disruption similar to 2008 and 2009. The potential for a market disruption exists despite the current lower interest rate environment.
- Any downgrade of Moody's A3 rating to Baa/BBB category would lead to a split-rating for FEI and result in FEI being considered principally a BBB rated entity thereby having an adverse impact on FEI's cost of debt, access to capital markets and credit with its counterparties.
- A downgrade below an A rating grade is particularly significant in the Canadian credit market where there is less trading of lower-rated investment grade debt.
- A decision to reduce common equity or ROE may be viewed as undermining regulatory support that has otherwise supported FEI's rating in the face of traditionally weak metrics.[114]

<u>Intervener submissions</u>

AMPC/BCOAPO make the following points in their submission:

- It is appropriate FEI be able to maintain its credit and attract capital but FEI should not pay more than necessary to attract capital;
- FEI's present DBRS "A" with a stable trend and Moody's "A3" with a Stable Outlook means FEI's credit metrics are not weak;
- FEI's DBRS credit rating has not changed in a long period of time including during periods when FEI's common equity ratio varied from 33 percent to 35 percent to 40 percent and then 38.5 percent;

[110] Exhibit C7-7-2, p. 81.
[111] Exhibit C7-7-2, p. 82.
[112] Exhibit B-16, p. 9.
[113] FEI Final Submission, p. 4.
[114] FEI Final Submission, pp. 56–58.

- It is not "credible" that FEI's credit rating would change if its common equity ratio is set to the 35 percent it had prior to 2009;
- The Commission can also take note of the Ontario Energy Board's (OEB) recent confirmation of the common equity ratios for Union Gas and Enbridge Gas Distribution Inc. (EGDI) at 36 percent which indicates that there was no concern a 36 percent common equity ratio would put their "A" credit ratings at risk; and
- Nothing in the current market conditions indicate FEI needs any sort adjustment to improve its access to capital markets.[115]

CEC submits that FEI's previous "negative ratings" outlook from both an ROE reduction and equity component reduction did no permanent damage to FEI. CEC also submits the credit metric sensitivities provided by FEI are positive and as a result, there is no compelling evidence upon which to raise FEI's common equity component.[116]

FEI reply submission

FEI submits AMPC/BCOAPO's reference to FEI's maintenance of an A rating when its common equity ratio was 33 percent is for a period 13 years ago and when it had a 35 percent ratio was almost seven years ago. FEI reiterates its view that Moody's June 2013 decision to place FEI on a negative ratings outlook pending further review is a signal that FEI's current rating is not secure.[117]

Commission determination

The Panel agrees maintenance of an A credit rating helps ensure FEI's access to capital in most market conditions, and among other benefits, ensures a lower cost of borrowing. The evidence presented in this proceeding supports FEI's assertion its credit metrics are weak for an A rating, however, at its current ROE and common equity ratio, the rating agencies have offset this weakness in metrics with other factors including a supportive regulatory environment.

The Panel is not persuaded FEI's expected higher capital expenditures through 2017 will in and of itself result in significant downward pressure on its credit rating. Moody's July 2015 credit opinion incorporates the impact of the large capital projects on FEI's credit metrics beginning in 2015 and forecasts improvement as projects are completed in 2016 and 2017. Moody's report indicates "this forecasted weakness is incorporated in the current rating."[118] Moody's report also indicates it does not expect the rating to go down and Mr. Coyne notes in his report that Moody's assessment is that a rating downgrade is unlikely, although it did list some factors that could lead to a downgrade. **Given that Moody's analysis already takes into account the expected capital expenditures with forecast improvements in metrics in 2016 and 2017 and since there is no other evidence forecasting a deterioration in credit metrics, the Panel finds, in the absence of other factors, the expected capital expenditures are unlikely to cause a downgrade in FEI's credit rating at its current equity ratio.**

The Panel accepts FEI's view that a reduction of its common equity ratio, especially to the level recommended by Dr. Booth, could result in downward pressure on the credit rating. Moody's past actions, including its reaction the 2013 GCOC Decision, indicate that any negatively viewed regulatory action could impact FEI's credit rating

[115] AMPC/BCOAPO Final Submission, pp. 65–67.
[116] CEC Final Submission, pp. 51–53.
[117] FEI Reply Submission, pp. 39–40.
[118] Exhibit B-1, Appendix A, Moody's Credit Opinion, p. 3.

due to its weak metrics especially given the additional pressure higher capital expenditures expected over the next few years. With respect to the AMPC/BCOAPO and CEC submissions related to FEI's ability to maintain its credit rating during periods where it was awarded a lower equity thickness, the Panel agrees with FEI that these instances relate to periods prior to 2009 and are unlikely to be relevant to the current decision.

The Panel agrees with the interveners and finds that there is no compelling evidence to support that an increase in common equity component is required to maintain FEI's current credit rating.

4.3.2 Trust indenture issuance test

With respect to its Trust Indenture, FEI states:

> FEI's Trust Indenture governs FEI's debentures including the ability to issue new debt. The debt issuance coverage test in the Trust Indenture provides that FEI will not issue debentures (other than First Mortgage Bonds or Purchase Money Mortgages (PMMs) (both represent secured debt) maturing 18 months or more after the date of issue) unless Consolidated Available Net Earnings (CANE) is at least 2.0 times the annual interest expense on debentures, excluding interest related to PMMs and including the annual interest requirements on the additional debentures being issued (defined as Interest on Funded Obligations under the Trust Indenture). Formulaically, CANE/Interest on Funded Obligations >=2.0. Failure to meet this test would limit FEI's ability to issue long-term debt.[119]

FEI expects the debt financing requirements related to its capital needs for the 2016 to 2018 period could approach $1 billion. In addition, FEI has $275 million of debt classified as purchase money mortgages (PMMs) which are excluded from the debt issuance coverage test of which $75 million matured in 2015 and $200 million will mature in 2016. FEI states that the maturing PMMs are being refinanced with senior unsecured debentures under the FEI Trust Indenture. FEI further states that its Trust Indenture limits the ability to issue secured debt and it is not prudent to continue to use secured debt as it is restrictive and inefficient.[120]

In the Application, using an assumption of a 5 percent yield for new issuances, FEI presented the impact of changes in ROE and common equity ratio under different scenarios on its issuance capacity under the Trust Indenture, as follows:

[119] Exhibit B-1, p. 27.
[120] Exhibit B-1, pp. 27–28.

Table 4.3: Scenario Analysis of ROE and Equity on Issuance Capacity under the Trust Indenture[121]

	(CAD$ 000s)
Increased Scenario - 9.25% ROE and 40% Equity[1,2,3]	767,800
Status Quo - 8.75% ROE and 38.5% Equity	595,600
Decreased Scenario - 8.25% ROE and 37% Equity[1,2,3]	430,000

1- Impact On Earnings due to change in ROE = (2014 Mid-Year Rate Base X Status Quo Equity % X Incremental Change in ROE from Status Quo)/(1-2014 Effective Tax Rate)

2- Impact On Earnings due to Change in Equity = (2014 Mid-Year Rate Base X Incremental Change in Equity from Status Quo % X New ROE%)/(1-2014 Effective Tax Rate) + Incremental Interest Due to Change in Debt = 2014 Mid-Year Rate Base X Incremental Change in Debt% from Status Quo X New Issuance Yield (5%).

3- Impact of Changes in ROE & Equity to Status Quo Issuance Capacity = ((Impact o Earnings due to Change in ROE + Impact of Earnings due Change in Equity)/2) Incremental Interest Due to Change in Debt)/New Issuance Yield (5%)

FEI also demonstrates that its ability to issue debentures becomes more constrained when the new debt yields are assumed to be higher than 5 percent.[122]

FEI stated that if there is a decline in the allowed ROE and/or common equity ratio, there would be implications on its debt issuance capacity including:

- A decline in allowed ROE and/or capital structure would lead to a decline in credit metrics, which in turn could lead to a credit rating downgrade that would increase the cost of borrowing; and
- The resulting increase in the cost of borrowing would further constrain FEI's debt issuance capacity.[123]

FEI provided the following table to show the required debt and equity financing for the capital projects, subject to timing and approval uncertainties.

Table 4.4: FEI's Total Capital Expenditure and Financing 2016-2018[124]

	2016	2017	2018
Approved Major Capital Projects	130,000	160,000	205,000
Potential Growth Projects[3]	-	525,000	525,000
Expected Total Capital Expenditures[2]	**130,000**	**685,000**	**730,000**
Debt Financing[1]	80,000	420,000	450,000
Equity Financing	50,000	265,000	280,000

1 - Excludes refinancing of $200 million of debt maturing during the period

2 - Excludes financing required of formulaic capital which is partially funded through depreciation cost.

3 - Relates to Tilbury 1B expansion and Woodfibre

FEI provided the following table to show the sensitivity of its debt issuance capacity to a range of possible interest rates assuming a decreased, status quo and increased ROE and common equity component.

[121] Exhibit B-1, p. 30.
[122] Exhibit B-1, p. 30.
[123] Exhibit B-9, BCUC IR 11.1.
[124] Exhibit B-9, BCUC IR 11.3.

Table 4.5: Sensitivity of Issuance Capacity to Cost of Debt (Issuance Rate)

(CAD$ 000s)	Decreased ROE & Equity	Status Quo ROE & Equity	Increased ROE & Equity
Issuance Capacity at 5.0%	430,000	595,600	767,800
Issuance Capacity at 6.0%	330,800	473,400	621,400
Issuance Capacity at 7.0%	260,100	386,200	517,000

Mr. Coyne forecasts a risk free rate (long Canada bond) of 3.68 percent based on 2016-2018 forecast data from the Consensus Economics Inc. (Consensus Economics) Survey Data.[125] Mr. Coyne presents the average Canadian utility bond spread vs. 30-year Canada long bond as 1.33 percent and notes that similar to 2013, it has remained somewhat elevated at 1.868 percent.[126] He also presented FEI's spread over 30-year Government of Canada bonds as 1.82 percent for the period from September to November 2015.

Dr. Booth does not agree with FEI's assessment that it might have issues with its interest coverage ratio (ICR) restriction in its bond indenture and as a result, FEI will not have issues accessing capital market. In his view, FEI's ICR analysis has the following deficiencies:

- FEI's ICR is over 2.2 in its recent filing with its securities regulators;
- High quality utilities have no problem accessing capital market; and
- In the current the state of the financial system FEI should have no problems financing itself with his recommended financial parameters.[127]

With respect to debt issuance capacity, Dr. Booth concludes:

> There are some timing differences in the numbers used in the ICR as there are some smoothing options, but the net result is that FEI has considerable financing flexibility and is not currently constrained by the ICR in issuing MTNs. For example, in August 2015 FEI negotiated a syndicated $700 million credit facility of which approximately half is currently unused. On April 8, 2015 FEI issued $150 million of 30 year MTNs at 3.375% using the proceeds to repay short term debt. At the time the 30 year long Canada bond (Cansim V39056) was yielding 2.03% for a 1.35% credit premium. In September 2015 it repaid $75 million of the PMMs with short term notes.[128]

Dr. Booth's evidence includes the Royal Bank of Canada's (RBC) forecast for the 2017 30-year long Canada bond yield of 3.65 percent[129] and notes FEI recently issued bonds at an approximate 1.35 percent over equivalent maturity long Canada bonds.[130] Further, Dr. Booth does not expect the Canada bond yield to exceed 3.8 percent over the next three years.[131]

FEI states that the issuance test under the Trust Indenture differs from the ICR disclosed in FEI's SEDAR filings (SEDAR ratio) in a number of ways. Included among these is the fact the Trust Indenture ratio is prospective whereas the SEDAR ratio is a historic earnings coverage ratio. Further, the SEDAR ratio only includes earnings

[125] Exhibit B-1, Appendix B, p. 41.
[126] Exhibit B-1, Appendix B, pp. 19–21.
[127] Exhibit C7-7-2, p. 2.
[128] Exhibit C7-7-2, p. 85.
[129] Exhibit C7-7-2, p. 23.
[130] Exhibit C7-7-2, p. 1.
[131] Exhibit C7-7-2, p. 2.

and interest from the past year, whereas the issuance test under the Trust Indenture requires the interest on new debentures being issued to be covered as well.[132]

FEI submits:

- Dr. Booth has made the same error in his current evidence as he had made in 2012 in referencing the SEDAR filed ratio as the test used to determine FEI's ability to issue new debt under the Trust Indenture. FEI submits that the SEDAR filing is a requirement for securities compliance purposes and cannot be used as a replacement for the specific terms of FEI's Trust Indenture in determining if it is allowed to issue new debt;[133]
- FEI's issuance capacity would decline materially were the Commission to accept Dr. Booth's recommended ROE of 7.5 percent and a 35 percent common equity ratio;
- There would be considerable risk of a downgrade by Moody's if Dr. Booth's recommended ROE and capital structure are adopted and a downgrade could lead to further constraint on the debt issuance coverage ratio through higher borrowing costs;[134]and
- In an increasing interest rate environment, this capacity would become even further constrained.

FEI reply submission

FEI submits that AMPC/BCOAPO cannot rely on Dr. Booth's evidence on the Trust Indenture and since Dr. Booth did not have a proper understanding of the Trust Indenture, he 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 also refers to its rebuttal evidence highlighting how its 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.[135]

Commission determination

In the Panel's view, the key determinants of whether FEI is likely to be constrained in its ability to issue debt under its Trust Indenture for the 2016 to 2018 period include:

1) An estimate of the most probable interest rate for the period;
2) Debt issuance requirements related to expected capital expenditures and debt retirements in the period and the availability of other financing sources that do not impact the Trust Indenture test; and
3) The Commission decision on ROE and common equity ratio.

The Panel focuses on the 2016 to 2018 period since FEI points to its capital expenditure requirements as the key issue impacting its ability to issue debenture especially if new debt yields are assumed to be higher than 5 percent.

In order to evaluate FEI's evidence related to the various scenarios for ROE and common equity ratio and new debt issuance yields, together with its analysis of required debt and equity financings, the Panel first considers

[132] Exhibit B-16, p. 11.
[133] FEI Final Submission, p. 62.
[134] FEI Final Submission, p. 63.
[135] FEI Reply Submission, p. 45.

the expert evidence in the proceeding related to the expected interest rates for the period 2016 to 2018 compared to the interest rate used by FEI in the various scenarios. Although their approach to determining the risk free rate and their source differs, in that Dr. Booth evidence includes RBC's 2017 forecast and Mr. Coyne used the Consensus Economics forecast for 2016 to 2018, these forecasts of the risk free rate within the 2016 to 2018 period are similar at 3.65 and 3.68, respectively. Their reference points for utility bond are also similar with Mr. Coyne's evidence presenting the average Canadian utility bond spread vs. 30-year Canada long bond as 1.33 percent and recent FEI spreads of 1.82 percent and Dr. Booth referencing FEI's recent issuance at a spread of approximately 1.35 percent over an equivalent maturity long Canada bond. **Considering the expert evidence on the risk free rate and the utility bond spread, the Panel finds the most likely interest rate outcome presented in the sensitivity analysis in Table 4.5 is the analysis using an assumption of 5 percent on new debt issuances.**

With respect to the evidence related to the various scenarios for ROE and common equity ratio and new debt issuance yields, together with its analysis of required debt and equity financings, the Panel notes the following:

1) FEI has included the required debt and equity financing for both approved and potential capital projects, subject to timing and approval uncertainties, and the Panel accepts this as a reasonable estimate of the maximum requirements for the 2016 to 2018 period given the number of uncertainties;
2) $200 million PMMs mature September 2016 and that there are no other significant material maturities of long-term debt in the 2016 to 2018 period. FEI has adjusted the issuance capacity scenarios for the refinancing of the $275 million PPMs;
3) Moody's July 2015 credit opinion forecasts improvements in metrics after completion of the expected capital expenditures in 2016 and 2017; and
4) While there are some limits, FEI has the ability to issue some secured debt under its Trust Indenture if necessary and has some remaining capacity on its $750 million credit facility to cover any short-term needs.

The Panel is of the view that the status quo scenario (8.75 percent ROE and 38.5 percent common equity component), assuming both a 5 percent and 6 percent yield on new debt issuances, demonstrates that FEI has sufficient capacity under its Trust Indenture to meeting its financing needs in the 2016 to 2018 period. FEI does not become constrained until interest rates reach 7 percent which given the expert evidence, the Panel considers unlikely. Further, in the event FEI is faced with interest rates at this level, it has other alternatives related to its ability to issue secured debt, alter the timing of certain capital expenditure or bring an application to the Commission for a change in ROE. Accordingly, **the Panel finds that an increase is ROE or common equity component is not required to support FEI's ability to issue debt under its Trust Indenture.**

The Panel agrees with FEI's submission that its issuance capacity would decline materially were the Commission to accept Dr. Booth's recommended ROE of 7.5 percent and a 35 percent common equity ratio. This is demonstrated by the 8.25 percent ROE and 37 percent equity scenario presented by FEI which represents a near break-even point at an assumed interest rate of 5 percent for new debt issues. In addition, the Panel agrees that such a scenario could increase the risk to a level that could lead to a downgrade by Moody's. If a downgrade were to occur, it could lead to further constraint on the debt issuance coverage ratio through higher borrowing costs. Accordingly, **the Panel finds that a reduction of ROE and common equity component to the levels recommended by Dr. Booth could impact FEI's ability to issue debt under its Trust Indenture.**

4.3.3 FEI's common equity component relative to other Canadian utilities

Mr. Coyne's comparison of the Canadian peer group companies' equity components in relation to his overall risk ranking is included in the table below:

Table 4.6: Canadian Peer Group Comparative Risk Analysis and Authorized Equity Ratio[136]

Operating Company	Risk assessment relative to FEI	Authorized equity component
Proposed FortisBC Energy Inc.	N. A.	40.0%
Current FortisBC Energy Inc.	N. A.	38.5%
ATCO Gas	Less risky	38.0%
Enbridge Gas Distribution Inc.	Less risky	36.0%
Union Gas	Less risky	36.0%
Gaz Métro	More risky	38.5%

With respect to FEI's proposed common equity ratio, Mr. Coyne concludes that FEI's proposed capital structure is "appropriate, albeit conservative." Mr. Coyne states that FEI has higher risk relative to its Canadian peer companies with the exception of Gaz Métro. He also states that Gaz Métro is riskier than FEI and it "enjoys a substantial portion of deemed preferred equity, effectively acting as a further buffer for debt holders." His view with respect to the US proxy group is that FEI's proposal would fall below the entire range of US companies in his proxy group and FEI's proposal is conservative because of FEI's higher relative risk.[137]

In his report, Dr. Booth ranks FEI in the same risk category of gas distributors and identifies FEI as slightly riskier than EGDI and ATCO Gas and is lower risk than either Union Gas or Gaz Métro. Dr. Booth also states the differences in risk between the utilities are tiny.[138]

In his rebuttal evidence, Mr. Coyne states he agrees with Dr. Booth that Gaz Métro is slightly riskier than FEI. Mr. Coyne considers Gaz Métro to be FEI's closest comparator and notes it has the same common equity ratio as FEI of 38.5 percent as well as an allowed 7.5 percent deemed preferred equity at a return of 5.95 percent. In Mr. Coyne's opinion, this is equivalent to roughly 43.5 percent equity at Gaz Métro's current authorized return of 8.90 percent[139] which puts Gaz Métro's allowed equity component above that being requested by FEI in this proceeding. Mr. Coyne considers this appropriate given Gaz Métro's relative risk to FEI.

[136] Exhibit B-1, Appendix B, p. 101.
[137] Exhibit B-1, Appendix B, p. 102.
[138] Exhibit C7-7-2, p. 78.
[139] Exhibit B-16, Prepared Rebuttal Testimony of Mr. Coyne, p. 39, Mr. Coyne's calculation supporting the equivalent equity ratio of 43.5% is calculated as follows: ((5.95% x 7.5%)+(38.5% x 8.90%))/8.9%.

With respect to its main Canadian comparators, FEI submits:

- The reasonableness of its proposed common equity ratio of 40 percent is supported by ratios of other major Canadian natural gas distribution utilities in that a 40 percent common equity ratio places FEI between the higher risk Gaz Métro (equivalent of 43.5 percent at its allowed return on common equity) and lower risk utilities EGDI (36 percent), Union Gas (36 percent) and ATCO Gas (38 percent).[140]
- No other Canadian natural gas distributor has an allowed common equity ratio as low as Dr. Booth's recommendation of 35 percent.
- ATCO Gas is less risky than FEI and has a common equity ratio of 38 percent.[141]

Intervener submissions

AMPC/BCOAPO submit that Mr. Coyne recommends a common equity ratio for FEI that is in excess of the ratio of any of the comparable Canadian utilities.[142] AMPC/BCOAPO support Dr. Booth's recommendation of the same capital structure (i.e. 35 percent) for all of the comparative Canadian utilities, with the exception of Gaz Métro. AMPC/BCOAPO submit it is misleading for FEI to refer to the equity component of Gas Métro as 46 percent including preferred shares because preferred shares are very different from the perspective of the ratepayer and the shareholder and should not be equated. AMPC/BCOAPO further submit "if it is necessary that FEI have more 'equity' to meet credit metric requirements AMPC/BCOAPO supports the Board requiring FEI to issue preferred shares rather providing common shareholders with excessive returns or an overly thick common equity ratio."[143] The issue of preferred shares is addressed in Section 4.3.3.1.

CEC prefers Dr. Booth's view of comparative Canadian companies and submits that FEI's view of its risks relative to the risks of comparable Canadian utilities overstates the appropriateness of a 40 percent common equity component.[144]

FEI reply submission

FEI submits its proposed 40 percent common equity component is well below Gaz Métro's 43.5 percent after accounting for Gaz Métro's deemed preferred shares (not the 46 percent referred to by AMPC/BCOAPO) and is above the major natural gas distribution utilities that the experts agree are less risky than FEI.[145]

Panel discussion

The Panel notes Mr. Coyne's opinion that the Canadian regulatory practice differs from the US practice where it is more common for a US regulator to look at the proxy group of similarly situated companies and then make a determination as to whether or not that company's capital structure is reasonably within the range, given its overall risks, its capital expenditure programs, etc. He also states in Canada, it is more common for a regulator to deem a capital structure based on risk analysis and credit metrics.[146]

[140] FEI Final Submission, p. 4.
[141] FEI Final Submission, p. 60.
[142] AMPC/BCOAPO Final Submission, p. 10.
[143] AMPC/BCOAPO Final Submission, pp. 63–64.
[144] CEC Final Submission, p. 48.
[145] FEI Reply Submission, p. 43.
[146] Oral Hearing Transcript Volume 3, p. 372.

In the Panel's view, while there are differences in the parties' views of an appropriate common equity ratio for FEI, there is general agreement of the relative risk ranking of FEI's comparator Canadian natural gas distribution utilities. All parties agree that EGDI, Union Gas and ATCO are less risky than FEI and Gaz Métro more risky. The Panel accepts this relative risk ranking as a check on our determinations.

4.3.3.1 Introducing preferred shares to FEI's capital structure

The issue of introducing preferred shares to FEI's capital structure was raised by Dr. Booth. He states that "FEI should not be allowed more than the Fair Return Standard due to bond market problems. If any such problems exist, and I don't think they currently do, they can be addressed with a short term solution, such as issuing term preferred shares."[147]

Intervener submissions

AMPC/BCOAPO submit that as an alternative to increasing the common equity component, if FEI requires more equity to meet its credit metrics, the Commission can require FEI to issue preferred shares.[148] They further submit that any concerns with Dr. Booth's recommendation of 35 percent common equity ratio can be addressed by deeming some preferred shares in the capital structure.[149]

AMPC/BCOAPO refer to FEI's final submission in the 2012 GCOC proceeding in which FEI submits "the introduction of preferred equity into the capital structure has the same effect on the cost of equity as adding debt." AMPC/BCOAPO submit the introduction of preferred shares into the capital structure will improve access to the debt market because preferred shares dividends are paid out of after-tax income, must be declared by the Board of Directors and do not constitute interest in the interest coverage test for new debt issuances.[150]

FEI reply submission

FEI submits the intervener evidence presented in this proceeding is not sufficient for the Commission to be able to 'properly assess the ramifications of mandating the introduction of preferred shares into FEI's capital structure. FEI states that the interveners put forward the same proposal in the 2009 proceeding, and this proposal was not accepted as the Commission determined that FEI's capital structure should remain in the form of debt and common equity.[151]

Commission determination

The Panel agrees with FEI and the Panel finds the issue of introduction of preferred shared into FEI's capital structure has not been explored sufficiently in this proceeding for the Commission to make a determination on this issue.

[147] Exhibit C7-7-2, p. 86.
[148] AMPC/BCOAPO Final Submission, pp. 63–64.
[149] APMC/BCOAPO Final Submission, pp. 66–67.
[150] APMC/BCOAPO Final Submission, p. 67.
[151] FEI Reply Submission, p. 45.

4.4 Appropriate capital structure

Commission determination

The Panel has determined a common equity component of 38.5 percent is appropriate for FEI, effective January 1, 2016. This represents no change from the 2013 GCOC Decision where the Commission determined the same equity component.

The Panel notes that the 2013 GCOC Decision put considerable emphasis and weight on changes in long-term risk associated with provincial government climate and energy policies as well as the competitive position of natural gas relative to electricity in reaching its common equity ratio determination. In this proceeding, the provincial government climate and energy policies were covered as part of what was termed political risk and the competitive position of natural gas as compared to electricity was addressed under energy price risk.

The parties generally agree there is little change with respect to the level of risk in a number of identified risk areas as compared to the 2013 GCOC Decision. The parties also appear to be in general agreement that there is little change in operating risk, market shift risk and the risk associated with economic conditions since the last decision. In addition, none of the parties take issue with the position taken by FEI that the amalgamation of FEW and FEVI with FEI has not resulted in any material risk change for the amalgamated Company and the combined entity's business profile remains much the same.

However, there were a number of important areas where the parties were in disagreement which were more closely examined by the Panel. Probably most contentious among these was with political risk where the Panel determined there was a slight increase in risk primarily due to developments at municipal and provincial government levels. Under the same political risk category, the Panel was not persuaded the evidence on recent jurisprudence concerning First Nations would have a material effect on FEI's ability to earn a return of on and of its capital. Offsetting the increase in political risk to some degree was the Panel's determination that energy price risk has decreased somewhat. As noted in Section 4.2, the Panel finds there was little change in regulatory risk and only a slight increase in energy supply risk. Taking these factors together and weighing them accordingly, the Panel considers there to be insufficient justification for awarding either a higher or lower equity ratio at this time.

The Panel also examined potential for FEI's credit ratings to affect its access to capital and found there is no compelling evidence to support the need to increase the common equity component to maintain its current credit rating. A similar conclusion was reached with regard to FEI's trust indenture issuance test where it was found that given the current equity ratio and ROE, there is little evidence FEI's ability to issue debt will be constrained.

As a check, the Panel notes FEI's deemed capital structure of 38.5 percent equity falls within the range among its Canadian comparators. This, while not determinative, does provide a level of comfort with respect to the Panel's decision to leave FEI's common equity component unchanged.

5.0 RETURN ON EQUITY

5.1 Overview of issues

In setting a fair ROE, the Panel must make a determination of a return representing the rate of return that equity investors could expect to earn elsewhere in the market without bearing more risk. Since investors' expectations are not directly observable in the market, it is necessary to make an estimate of the opportunity cost of an alternative investment of equivalent risk. The Panel notes the following guidance provided by the Brattle Group Report (Exhibit A2-3):

- There is no single, widely accepted, best financial model used to estimate the cost of capital;
- Models are imperfect tools but can be useful simplifications of reality;
- Cost of capital estimation continues to be as much art as it is science; and
- To make an appropriate estimate one should consider the "totality of information from alternative methodologies."[152]

In this proceeding, Dr. Booth and Mr. Coyne have presented estimates of investors' expectations based on data that they interpret through the use of variations on the capital asset pricing model (CAPM) and the discounted cash flow model (DCF model). The use of these two models is consistent with the 2013 GCOC Decision, where the Commission found that:

> The two most compelling frameworks for assessing the cost of equity are the DCF model and the CAPM. These models have well understood theoretical bases and explicitly recognize the opportunity cost of capital. Accordingly, these two models are given equal weight in determining the allowed ROE.[153]

The experts' approach to the use of these models to estimate an investor's opportunity cost differs significantly in a number of areas and result in recommendations of a fair ROE ranging from Dr. Booth's 7.5 percent to Mr. Coyne's 9.5 percent.

With a focus on the differences in approach by the experts, the key questions the Panel addresses in making its determination of an appropriate ROE are as follows:

i) Should the decision be informed by use of multiple financial models and other indicators of investor expectations?

ii) In the development of the models, is the selection of the proxy group and the weight placed on US data appropriate?

iii) With respect to both the CAPM and DCF estimates, are the model inputs used by the experts reasonable and how much weight should be given to each of these models and the resulting estimates?

iv) In applying the Panel's judgment to the totality of information, what is a fair return on equity for FEI?

---

[152] Exhibit A2-3, The Brattle Group, Survey of Cost of Capital Practices in Canada, Prepared for the British Columbia Utilities Commission (Brattle Group Report), May 31, 2012, pp. 3–4.
[153] 2013 GCOC Decision, p. 56.

5.2 Key differences in views related to ROE

5.2.1 Use of multiple financial models

Mr. Coyne states that use of the CAPM and DCF models, each with its own set of inherent limitations, provide different perspectives as well as depth to the analysis that helps inform the estimate of ROE. He cautions that neither model should be relied upon individually without corroboration from other approaches. In his opinion, it is necessary to use best judgment to assess the reasonableness of the result and to determine the appropriate weighting to apply to the results under current market conditions.[154]

In arriving at his ROE recommendation, Mr. Coyne considered the results of several tests including his constant growth and multi-stage DCF models, his risk premium analysis and the "alternative" CAPM analysis.[155] Mr. Coyne's overall recommendation is supported by placing equal weight on his multi-stage DCF and CAPM models, the same weighting the Commission applied in its 2013 GCOC Decision.[156] Mr. Coyne states that his approach differs from Dr. Booth who places "predominant weight" on the CAPM model.[157]

Dr. Booth disagrees that he primarily relies on CAPM estimates.[158] In arriving at his ROE recommendation, Dr. Booth's considers and applies his judgment to a variety of different indicators of the fair ROE including:

- capital market conditions;[159]
- his simple CAPM;[160]
- equity risk premium estimate or conditional CAPM (CCAPM);[161] and
- DCF estimates to support his adjustments to the CAPM estimates.[162]

He places weight on survey results from the Fernandez survey,[163] and considers other independent estimates, including TD Economics,[164] Aon Hewitt and Mercer.[165]

Final submissions

FEI underlines the importance of employing multiple tests and cites Mr. Coyne's evidence that the CAPM and DCF bring a different perspective since they are based on different premises. FEI submits only by using multiple tests can the Commission be assured of a reasonable estimate of ROE.[166]

[154] Exhibit B-1, Appendix B, pp. 34–37.
[155] Exhibit B-1, Appendix B, pp. 104–106.
[156] Oral Hearing Transcript Volume 1, p. 20; Exhibit B-1, Appendix B, pp. 104–106.
[157] Oral Hearing Transcript Volume 1, p. 22.
[158] Oral Hearing Transcript Volume 3, p. 503.
[159] Exhibit C7-7-2, p. 8.
[160] Exhibit C7-7-2, p. 41.
[161] Exhibit C7-7-2, p. 50.
[162] Exhibit C7-7-2, p. 56.
[163] Exhibit C7-7-2, p. 40.
[164] Exhibit C7-7-2, pp. 56–57.
[165] Oral Hearing Transcript Volume 3, p. 659.
[166] FEI Final Submission, p. 65.

AMPC/BCOAPO support Dr. Booth's recommendation for using the CAPM and DCF as a "check on one another and applying judgement as necessitated by external conditions."[167]

CEC submits that the evidence resulting from the application of all models presented in the proceeding should be considered but the Commission should apply its own judgment to determine the appropriate ROE in the current circumstances.[168]

Panel discussion

The Panel notes that while there are some differing perspectives among the experts and parties, their views are generally consistent with the Brattle Group Report's finding that decisions should be informed by use of multiple financial models and other indicators of investor expectations where appropriate. The Panel agrees it should consider the "totality of information resulting from applying multiple tests." The Panel also agrees it should consider all of the information from the application of the models presented, as well as other indicators of the fair ROE and should apply its own judgment to determine the appropriate ROE.

5.2.2 Selection of US and Canada proxy groups and US data comparability

As noted in Section 2.0, the "comparable investment requirement" of the Fair Return Standard requires the return available from the application of the utility's invested capital to be comparable to the return of other enterprises of like risk. To assess whether the proposed return meets this requirement, Mr. Coyne and Dr. Booth, on behalf of FEI and the Utility Customers respectively, selected a group of proxy companies in other Canadian and US jurisdictions as comparators for FEI.

The primary use of the proxy companies was in the determination of estimation of beta in the CAPM analysis (see Section 5.2.3.4) and estimating ROE's in the constant growth and multi-stage DCF models (see Section 5.2.4.1).

All parties acknowledge that there are no publically-traded, pure play gas distribution companies in Canada. Hence both Dr. Booth and Mr. Coyne assessed a sample of US companies that are primarily engaged in natural gas distribution in order to assess the market expectations specific to a natural gas distribution utility.[169]

Both consultants also chose a group of Canadian proxy companies. However, because of the lack of pure play gas distribution companies in Canada, the proxy companies are mainly holding companies with a variety of business interests that differ from FEI's business profile.

The uses and limitations of the proxy companies are set out in the followings sections.

[167] AMPC/BCOAPO Final Submission, p. 38.
[168] CEC Final Submission, p. 13.
[169] Oral Hearing Transcript Volume 3, pp. 581–595; FEI Final Submission, p. 77.

5.2.2.1 Selection and use of US proxy companies

FEI asserts that US utilities can be appropriate comparables and that US data requires no adjustment."[170] Mr. Coyne stated US companies are appropriate comparables for use in the various models to estimate a fair ROE for FEI because:

- US and Canadian utilities operate in similar macro-economic environments;
- US and Canadian utilities are governed by comparable regulatory models;
- US and Canadian capital markets are closely linked and move in parallel;
- There is a great deal of cross-border utility investment; and
- Canadian and US utilities compete for capital in a North American market.[171]

Dr. Booth chose his US proxy companies by selecting US companies that had been used in previous proceedings by other expert witnesses for this purpose. Dr. Booth eliminated companies that were no longer appropriate because of merger activity and added three companies based on his review of their descriptions in Google's gas index.[172] Mr. Coyne used a sample of seven US companies while Dr. Booth had eight companies in his proxy group. Six of the companies were common to both samples.

Mr. Coyne asserts that Canadian and US utilities are governed by comparable regulatory models. As evidence of this, he cites a 2013 Moody's report concluding that utility regulation in Canada and the United States is comparable. He also quotes an OEB decision finding that US utility comparators could be used, requiring "only an analytic framework in which to apply judgment and a system of weighting."[173] Mr. Coyne acknowledged that in a 2013 decision, the Newfoundland and Labrador Public Utilities Board made a downward adjustment of 0.5 to 1.0 percent to US DCF results but claimed that this did not reflect "the broader Canadian landscape on this matter."[174]

In his evidence, Mr. Coyne provides detailed information on the proxy companies he used in his ROE models. Table 5.1 summarizes some of the evidence with respect to regulatory practices or actions impacting the US proxy companies that differ from the regulatory practices facing FEI. While the list is not intended to be exhaustive, it demonstrates some of the elements the Panel must consider when evaluating such comparisons.

[170] FEI Final Submission, p. 77.
[171] Exhibit B-1, Appendix B, Evidence of Mr. Coyne, p. 87.
[172] Oral Hearing Transcript Volume 3, pp. 586–587.
[173] Exhibit B-8, AMPC IR 4.2.
[174] Exhibit B-8, AMPC IR 4.5.

Table 5.1: Differences in Regulatory Practices of Mr. Coyne's US Proxy Companies Compared to FEI

US Proxy Company	**Differences in Regulatory Practice Compared to FEI**
Atmos Energy Corporation*	(Comments are related to Texas where 70% of Atmos' regulatory assets are located) • Some capital additions may be brought into rates without prior regulatory approval[175] • Elected regulators who receive political donations from Atmos[176] • Test year determined on a historical basis[177]
South Jersey Resources Corp.*	• Partially forecast test year[178]
Northwest Natural Gas*	Oregon • Partially to fully forecast test year • No interim rates Washington • Historical test period • Interim rates allowed under emergency circumstances[179]
Piedmont Natural Gas*	• Historical test period in North and South Carolina • Formula rate plan (annual rate mechanism) in Tennessee and North Carolina[180]
New Jersey Industries, Inc.	• Partially forecast test year • Interim rates allowed on an emergency basis • Company retains 100% of the first $7.8 million of margins associated with off-system sales, interruptible sales, and interruptible transportation activities. Margins beyond this are allocated 85% to ratepayers and 15% to the company[181]
Southwest Gas Corporation*	• Historical test year • Interim rates not allowed in Nevada, allowed on an emergency basis in California[182]

[175] Oral Hearing Transcript Volume 2, pp. 408–410.
[176] Oral Hearing Transcript Volume 2, pp. 413–414.
[177] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, p. A-59.
[178] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, p. A-64.
[179] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, p. A-68.
[180] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, p. A-72.
[181] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, p. A-76.
[182] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, p. A-81.

WGL Holdings Inc.*	• Historical test year with some items forecast in Washington, DC • Historical test year in Virginia and Maryland • Interim rates are rarely requested in Maryland and generally not requested in Washington, DC[183]

*Also used as a proxy company by Dr. Booth

Mr. Coyne was specifically asked about one of the proxy companies used in his ROE analysis, Atmos Energy Corporation (Atmos), and its treatment by the Texas regulator with respect to allowing capital expenditures that are brought into rates without the regulators' approval. He was also asked to comment on how this treatment compares to the handling of FEI capital expenditures. Mr. Coyne replied that "... just and reasonable rate standards are going to apply at the end of the day and they'll be held to that standard."

When cross-examined about whether there was a difference in political or regulatory risk in jurisdictions where the regulators are elected and utilities may contribute significant funds to regulators running for election, such as in Texas, or where they are appointed, as in BC, Mr. Coyne stated that in his view, the experience and background of the regulators was more relevant than whether they were elected or appointed.[184] He also noted that Atmos operates in eight states.[185]

FEI argues that Mr. Coyne's analysis of regulatory risk facing his US proxy companies demonstrates:

> …the U.S. regulatory environment is generally characterized by widespread use of regulatory mechanisms that are viewed as credit supportive, including accounts that provide for recovery of gas costs for gas utilities and fuel and purchase costs for electric utilities, revenue decoupling, weather normalization accounts, trackers for new infrastructure investment (gas utilities), mechanisms for the recovery of bad debt expenses, and the ability to include CWIP in rate base.[186]

FEI further argues that the majority of the companies in Mr. Coyne's proxy sample operate in more than one regulatory jurisdiction, which diversifies their regulatory risk.[187]

In Dr. Booth's view, there are a number of issues to be considered when using US proxy companies as comparators. These include:

- Growth rate instability related earnings over the past five years. Dr. Booth notes growth rates have varied from negative 17.09 percent for one of the proxy companies to positive 29.23 percent for another.[188]
- Optimism bias of analysts in estimating earnings growth.[189] Dr. Booth states that since analyst earnings forecasts are used to predict growth rates, the use of the DCF model is suspect even for "low risk" utilities.[190]

[183] Exhibit B-1, Appendix B, Evidence of Mr. James Coyne, Appendix A, pp. A-86–A-87.
[184] Oral Hearing Transcript Volume 2, p. 413.
[185] Oral Hearing Transcript Volume 2, p. 415.
[186] FEI Final Submission, p. 78.
[187] FEI Final Submission, p. 78.
[188] Exhibit C7-7-2, Appendix D, p. 14.

- Lower levels of capitalization of US proxy companies. In Dr. Booth's view, this results in some parties arguing that this indicates a higher level of risk for these companies.[191]

Dr. Booth testified he believes the risk of US utilities is clearly higher than Canadian utilities and "the underlying basic estimates indicates that US utilities are riskier than Canadian utilities."[192] CEC agrees with this assessment and argues that the evidence from US companies should be given less weight or should be adjusted based on the inherent differences between Canadian and US utilities.[193]

5.2.2.2 Canadian proxy companies

Because other regulated gas utilities in Canada are not stand-alone companies, in calculating CAPM and DCF rates of return, Mr. Coyne uses the following Canadian proxy group most of which are holding companies:

- Canadian Utilities Ltd. (an Alberta based company that is in the gas distribution business in Alberta and Australia and also in the electric distribution and transmission business as well as in modular construction e.g. work camps etc.);
- Emera Inc. (a Nova Scotia electric company engaged in a takeover bid of TECO in the US. Also provides electric service in Maine and the Caribbean);
- Enbridge Inc. (although it has a large gas distribution company in Ontario, also has a significant oil and gas transmission pipeline business);
- Fortis Inc. (parent of FEI, a holding company with 93 percent of its assets in regulated businesses – gas and electric in Canada, the US and the Caribbean); and
- Valener Inc. (has a 29 percent interest in Gaz Métro as well as significant wind farm interests – partnered with Gaz Métro).[194]

Mr. Coyne states that "only three of the five companies in the Canadian proxy group derived more than 70 percent of their operating income from regulated activities; and only one company, Valener would also satisfy the regulated gas utility screen. This is a clear indication that a Canadian utility group cannot be created to reliably resemble the risks and business profile of FEI."[195] Mr. Coyne further states he includes his Canadian proxy group "to provide a benchmark for the risks and resulting cost of capital for Canadian utilities in general."[196]

Dr. Booth, in assessing other Canadian utilities, looked at the same companies used by Mr. Coyne; Enbridge Inc., Canadian Utilities, Emera, Fortis Inc., Valener, and in addition, Veresen Inc. (a company with pipeline, midstream and electric power businesses) and TransCanada Corporation (a company with natural gas and oil transmission pipelines and electric power generation).[197] Mr. Coyne excluded the use of TransCanada Corporation on the

---

[189] Exhibit C7-7-2, Appendix D, pp. 14–16.
[190] Exhibit C7-7-2, Appendix D, p. 14.
[191] Exhibit C7-7-2, Appendix C, p. 9.
[192] Oral Hearing Transcript Volume 3, pp. 662–663.
[193] CEC Final Submission, pp. 15–16.
[194] Exhibit B-1, Appendix B, Evidence of Mr. Coyne, Appendix A, pp. A-16 to A-51.
[195] Exhibit B-1, Appendix B, p. 33.
[196] Exhibit B-1, Appendix B, p. 29.
[197] Exhibit C7-7-2, Evidence of Dr. Booth, Appendix C, p. 8.

basis that it "is subject to a completely different set of competitive risks than the average natural gas distribution utility."[198]

Commission determination

The Panel finds the use of US proxy companies as comparators to assist in the determination of what is the appropriate rate of return for FEI in terms of meeting the Fair Return Standard is relevant.

However, the Panel notes Mr. Coyne's statement that:

> Notwithstanding the care taken to ensure comparability, market expectations with respect to future risks and growth opportunities vary from company to company. Therefore, even within a group of similarly situated companies, it is common for analytical results to reflect a seemingly wide range. At issue, then, is how to select an ROE estimate in the context of that range. That determination must be based on an assessment of the company specific risks relative to the proxy group and the informed judgment and experience of the analyst.[199]

The Panel finds that the screening criteria used by Mr. Coyne to choose his US proxy companies are reasonable for consideration in assessing growth rate in the DCF model and capital structure. The companies chosen are found by the Panel to have business characteristics somewhat but not directly comparable to FEI. The Panel also found the detailed information provided by Mr. Coyne on each proxy company to be useful in its determinations. **The Panel also finds that the eight US proxy companies chosen by Dr. Booth, although not chosen with the same rigour as employed by Mr. Coyne, includes six of the companies used by Mr. Coyne, and is also a reasonable sample.**

However, the Panel does not agree with Mr. Coyne that the regulatory environment affecting FEI is directly comparable to the regulatory environments faced by the US proxy companies. The Panel is not persuaded that Moody's statement that utility regulation in Canada and the United States is comparable means that there are no differences in the respective regulatory environments that affect levels of risk and the comparability of the allowed ROE for US and Canadian utilities. We note that in addition to some of the differences set out in Table 5.1 above, there is also a question as to whether there are significant differences in the use of deferral accounts and differences in approved forecasting methodologies between FEI and the US proxy companies. Mr. Coyne provided evidence with information on what is described as "significant" deferral accounts used by his proxy companies.[200] **The Panel finds that the evidence is not persuasive in demonstrating that the US proxy companies have access to the same suite of deferral accounts that exists in FEI's rate structure.**

The Panel considers the use of US proxies to be a framework against which a fair return ROE may be assessed, but it is not a clear mathematical determinant that can be simply plugged into an ROE calculation. The regulatory environments of US proxy companies operate are varied and differ in a number of respects from the regulatory environment faced by FEI in British Columbia. The US proxy data, while useful, is an imperfect reflection of the circumstances facing FEI and requires considerable judgment as to the weight to be placed on this data. The Panel is not persuaded the evidence in this proceeding is sufficient to warrant a change in the

[198] Exhibit B-1, Appendix B, p. 31.
[199] Exhibit B-1, Appendix B, p. 29.
[200] Exhibit B-1, Appendix B, Appendix A, pp. A-57 to A-87.

Commission's 2013 GCOC Decision conclusion that differences exist in the regulatory environments in the US relative to British Columbia.

The lack of stand-alone publically traded natural gas distribution companies in Canada results in the reliance on data from holding companies whose interests include significant assets outside of the natural gas distribution business. The difference in corporate make-up of these proxy companies compared to FEI requires applying considerable judgment to any calculations flowing from this data. **The Panel finds the differences in the business circumstances of the Canadian proxy companies to FEI are significant.** In the Panel's view, this is evident from the proportion of the proxy companies activities in non-regulated activities or in regulated activities not related to natural gas distribution.

In addition, it is the Panel's view that the evidence with respect to ROE and the equity component of utilities in other jurisdictions and the calculations derived from proxy companies can help inform our decision, but are insufficient, in and of themselves, to define it. As is reflected in the sections in this decision dealing with FEI's risk and the assessment of the models used to calculate a fair ROE, the Panel has needed to weigh the implications of the deficiencies of the Canadian proxy companies in terms of differences in business functions compared to FEI and the deficiencies of the US proxy companies in terms of their different regulatory environments.

The Panel is not persuaded Dr. Booth's observation that lower levels of capitalization of US proxy companies relative to FEI may be indicative of higher risk faced by these companies is correct, and the Panel gives little weight to this evidence. The instability in earnings growth for the US proxy companies is viewed by the Panel as indicative of the abnormal economic circumstances that have existed over the past few years and supports placing less reliance on the models and thus more reliance on judgment.

The Panel notes that proxy companies are used in both the CAPM model (to estimate betas) and in the DCF calculation process. In both cases, as set out elsewhere in the decision, estimates are prepared based on the Canadian sample and on the US sample and from this, a figure applicable to FEI is derived. A number of uncertainties are identified in the modelling processes and inputs. The limitations set out in this section, namely that the Canadian proxy group is flawed due to its lack of comparability in business functions to FEI and the use of the US proxy group is hampered by the differences in the regulatory treatment of the US companies. Collectively, these add to the list of uncertainties that the Panel must take into account in determining the ROE and equity ratio for FEI that meets the Fair Return Standard.

5.2.3 CAPM/risk premium model

5.2.3.1 Overview of the CAPM estimates and model

Mr. Coyne describes the CAPM as a forward looking estimate of a security's required return based on the relationship between its required return and its systematic or non-diversifiable risk.[201] Mr. Coyne states, to calculate the required ROE for a given security it is necessary to estimate the:

i) Risk free rate of return;

[201] Exhibit B-1, Appendix B, pp. 39–40.

ii) Return for the market as a whole or the market risk premium (MRP); and

iii) Beta of an individual security or the measure of covariance between the return on a specific security and the market.[202]

Similarly, Dr. Booth describes the risk premium model as the investor's required or fair rate of return represented by the risk free rate plus a risk premium. He states that the CAPM is a special form of risk premium model that relates the individual risk of a security to the overall market risk and specifies that the risk premium consists of the MRP multiplied by the security's relative risk or beta coefficient (beta).[203]

Issues with the CAPM model

With respect to use of the CAPM, the Brattle Group Report states the CAPM:

> …has a transparent and well-explored economic theory underlying it. Its results can be replicated easily, since the data required are widely available from many public sources. Implementing the CAPM, however, requires a number of subjective decisions – decisions which can be hotly contested and can lead to significantly different results.[204]

Mr. Coyne outlines a number of issues with the CAPM including:

i) The approach is sensitive: the method of calculating the risk premium, the selection of a security for the risk free rate, the use of forward-looking or historical data and the determination of whether adjustments to Beta are appropriate;

ii) The model assumes that: (1) all investors will behave in an efficient manner and manage their portfolios to diversify risk and will make investment decisions considering the impact of a security on the portfolio; and (2) the market is well functioning; and

iii) The problems of the CAPM are exacerbated in the current market environment where risk free rates remain near all-time lows[205] and consistent with the views of Dr. Booth, result in the need to modify the traditional CAPM assumptions to achieve a reasonable ROE recommendation.[206]

Dr. Booth states that the CAPM is the most common way of estimating the fair rate of return and it is so widely used because it is "intuitively correct" in that it captures the time and risk value of money.[207] Dr. Booth explains that under normal or average markets, the traditional CAPM reflects the correct opportunity cost for an equity investor as being the bond market plus a risk premium. This view of opportunity cost assumes that conditions in the bond markets affecting the long Canada bond yield are also driving conditions in the equity market. However, in Dr. Booth's view, at the current point in time, conditions in the Canadian bond market are largely being driven by external factors and do not reflect normal or average market conditions.[208] Accordingly, Dr. Booth considers it necessary to make adjustments to the CAPM to reflect the current capital market conditions and to adjust for abnormally low Canada bond yields resulting from global bond buying programs.[209]

---

[202] Exhibit B-1, Appendix B, p. 40.
[203] Exhibit C7-7-2, p. 36.
[204] Exhibit A2-3, p. 4.
[205] Exhibit B-1, Appendix B, pp. 35–36.
[206] Oral Hearing Transcript Volume 1, p. 21.
[207] Exhibit C7-7-2, p. 36.
[208] Exhibit C7-7-2, pp. 41–42.
[209] Exhibit C7-7-2, p. 42.

Comparison of CAPM estimates

Table 5.2 compares the expert witnesses' use of the CAPM variants and their estimates.

Table 5.2: Comparison of CAPM Estimates

Expert	Risk-free rate (%)	Market risk premium (%)	Beta	CAPM results (%)	Adjustment (%)	Flotation allowance (%)	CAPM ROE estimate (%)
Mr. Coyne – Canadian proxy group[210]	3.68[211]	7.6[212]	0.65[213]	8.58	--	0.50	9.08
Mr. Coyne – US proxy group	3.68[214]	7.6[215]	0.78[216]	9.58	--	0.50	10.08
Mr. Coyne - average	--	--	--	--	--	--	9.58[217]
Dr. Booth	2.75[218]	5.0-6.0[219]	0.45-0.55[220]	Simple 5.50-6.55[221]	CCAPM (1) +0.45[222] Risk Premium Estimate[223] (2)Operation Twist +1.30[224]	included	7.25 – 8.30[225]

[210] Exhibit B-1, Appendix B, Exhibit JMC-5.
[211] Exhibit B-1, Appendix B, Table 5, p. 41. 3.68 = [(2.1+3.2+3.6)/3]+0.71.
[212] Exhibit B-1, Appendix B, Table 7, p. 49. The Canadian MRP is a range of 5.6 to 9.8 and the US MRP is a range of 7.0 to 8.1 based on historical and forward-looking estimates and 7.6 is the average of the Canadian and US estimates.
[213] Exhibit B-1, Appendix B, Table 6, p. 44.
[214] Exhibit B-1, Appendix B, Evidence of Mr. Coyne, pp. 40–41. 3.68 = [(2.1+3.2+3.6)/3]+0.71; although Mr. Coyne presented 4.29 percent as the US risk-free rate, his US proxy group CAPM calculations in Exhibit JMC-5 Schedules 1 and 2 actually used the 3.68 percent Canadian risk-free rate to arrive at an estimate of 10.08 percent.
[215] Exhibit B-1, Appendix B, Table 7, p. 49. The Canadian MRP is a range of 5.6 to 9.8 and the US MRP is a range of 7.0 to 8.1 based on historical and forward looking estimates and 7.6 is the average of the Canadian and US estimates.
[216] Exhibit B-1, Appendix B, Table 6, p. 44.
[217] Exhibit B-1, Appendix B, Table 21, p. 104.
[218] Exhibit C7-7-2, p. 23, the average of the March and December Consensus Economics forecasts which is a proxy for the average for the year as a whole and consistent with the application to an average forward test year rate base, is 2.75%.

With a focus on the differences in approach by the experts, the key areas the Panel needs to explore in assessing the results of the experts' CAPM estimates are as follows:

i) The adjustments needed to the risk free rate to compensate for the abnormal conditions in the bond markets resulting from the impact of global bond buying programs.

ii) The use of income or total returns in the derivation of the historical MRP.

iii) The methodology to calculate and necessity of using a forward looking MRP to reflect the current expectation of investors.

iv) Testing reasonableness of MRP estimates.

v) The appropriate adjustment to beta.

5.2.3.2 Estimate of risk free rate and adjustment for abnormal conditions

Both Mr. Coyne and Dr. Booth rely on Consensus Economics forecasts of the 30-year Government of Canada bond yield as the risk free rate. However, the experts differ in their approach to an adjustment to the risk free rate to compensate for the abnormal conditions in the bond markets resulting from the impact of global bond buying programs.

Mr. Coyne prepares his estimates of the risk free rate plus an adjustment for abnormal conditions using the 10-year government bond forecast plus the historical spread between 10-year and 30-year government bonds.[226] My Coyne's calculations as follows:

Table 5.3: Mr. Coyne's Calculation of Risk Free Rate Adjusted for Abnormal Conditions[227]

30-Year Risk Free Yield	CDN$	U.S. $
April 2015 Consensus Forecast Average 2016-2018 Forecasts 10-Year bond yield	2.97%	3.60%
Average Daily Spread between 10-year and 30-year government bonds (August 2015)	0.71%	0.69%
Average	3.68%	4.29%

Mr. Coyne selected the 2016 to 2018 period to match the period he expects FEI's rates are most likely to be in effect[228] and explained his use of a three-year forecast in the current abnormal market conditions:

> What I'm saying is that we know conditions are abnormal now. Dr. Booth goes through an exercise he calls 'Operation Twist', to try to account for abnormal bond yields in the government bond yield market. And the approach that I take is to look to a consensus forecast, and to see

---

[219] Exhibit C7-7-2, p. 39.
[220] Exhibit C7-7-2, p. 41.
[221] Exhibit C7-7-2, p. 41, 5.50= (5.0*.45) + 2.75=2.25+2.75=5.0 + 0.5 flotation = 5.50; and 6.55 = (6*.55) + 2.75 + 0.5 flotation = 6.55.
[222] Exhibit C7-7-2, p. 44.
[223] Exhibit C7-7-2, p. 50, the Risk Premium Estimate is the CCAPM adjusted for an estimate of Operation Twist and is a range of 7.25% to 8.30%.
[224] Exhibit C7-7-2, p. 50.
[225] Exhibit C7-7-2, p. 50.
[226] Exhibit B-1, Appendix B, pp. 40–41.
[227] Exhibit B-1, Appendix B, p. 41.
[228] Exhibit B-1, Appendix A, p. 40.

> 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 judgment 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 that 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 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.[229]

Dr. Booth recommends a 2.75 percent risk free rate based on an average of the 2016 three-month and one-year Consensus Economics forecasts plus the current spread between the 30-year and 10-year bond of 0.75 percent. He concludes that the average of the three month and one year rate is a "proxy for the average for the year as whole and consistent with the application to an average forward test year rate base."[230] In addition, Dr. Booth uses an "Operation Twist adjustment" to adjust for the abnormally low Canada bond yields resulting from rampant bond buying programs by central banks.[231]

In the 2012 GCOC proceeding, Dr. Booth placed the impact of Operation Twist on the Canadian bond market at approximately 80 bps from August 2011 through to May 2013.[232] In the 2013 GCOC Decision, the Commission accepted Dr. Booth's adjustment.[233]

Dr. Booth quantifies the Operation Twist impact by determining the extent to which the differential between the preferred share yield and the corporate A yield has widened under recent market conditions.[234] According to Dr. Booth's evidence, the preferred share yield spread increased from 0.80 percent in 2012 to the current 2015 average of 1.3 percent.[235] Dr. Booth testified that he:

> …looked at the volatility those preferreds and I used the average to try and adjust for their volatility, and I use 1.3. Right now I would lower that to about 60 to 70 basis points, because I've now looked at the composition of that index, and it reflects the behaviour of rate reset preferred shares. I would not continue to make a 1.3 percent spread adjustment based upon those preferreds, because those preferreds are behaving -- significantly behaving as a result of rate reset preferreds.[236]

Dr. Booth also testified he now has less faith in the magnitude of the Operation Twist adjustment but what continues to drive his recommended ROE, consistent with the last four years, is he would not change allowed ROEs until the long Canada rate returns to something approaching normality, which in his view is 3.8 percent.[237]

---

[229] Oral Hearing Transcript Volume 1, pp. 186–187.
[230] Exhibit C7-7-2, p. 23.
[231] Exhibit C7-7-2, p. 48.
[232] Exhibit C7-7-2, p. 48.
[233] 2013 GCOC Decision, p. 60.
[234] Exhibit C7-7-2, p. 49; Exhibit C7-9, BCUC IR 12.1.
[235] Exhibit C7-7-2, pp. 48–49.
[236] Oral Hearing Transcript Volume 3, p. 538.
[237] Oral Hearing Transcript Volume 3, p. 542.

FEI submits that it is appropriate for Mr. Coyne to use a three-year forecast to estimate a forward looking bond yield that includes anticipated changes over the next few years to reflect the long-term perspective, particularly given current market conditions. FEI also submits that Mr. Coyne's forecast risk free rate plus an adjustment for abnormal conditions of 3.68 percent is very near to the RBC forecast of 3.65 percent for Q4 2017 which Dr. Booth has included on page 23 of his testimony.[238]

FEI submits a reasonable Operation Twist adjustment is an essential precondition to the reliability of the risk premium model output because Operation Twist is the only feature differentiating Dr. Booth's risk premium model from the simple CAPM that he rejected.

Intervener submissions

AMPC/BCOAPO characterize Dr. Booth's Operation Twist adjustment as an adjustment to the risk free rate. AMPC/BCOAPO calculate Dr. Booth's risk free rate plus an adjustment for abnormal conditions to be 2.75 percent plus 1.3 percent for the Operation Twist adjustment, resulting in a "proxy risk-free rate of 4.0 %." AMPC/BCOAPO submit this risk free rate plus an adjustment for abnormal conditions is a proxy for the rate used by investors in trading off risk versus return, similar to AON Hewitt's long run target bond yield of 4.21 percent.[239]

CEC recommends 2.75 percent as the risk free rate and submits:

- It is not reasonable to utilize a three-year average for a 1 year rate;[240]
- Forward looking expectations are already captured in the current forecast of long bond yield;[241]
- It is reasonable to expect the market risk premium to decline if the bond yields are expected to increase in the future given the inverse relationship between market equity returns and bond yields.[242]

CEC accepts Dr. Booth's Operation Twist adjustment which indicates current forecast in long Canada yields are "at least 1.3 % too low."[243]

FEI reply submission

With respect to Mr. Coyne's use of the 2016 to 2018 Consensus Economics forecast, FEI submits:

- Mr. Coyne's approach to addressing the need to compensate for the impact of massive global bond buying by central banks does not assume a three-year test period, rather Mr. Coyne uses the forecast long Canada bond yield to establish a normalized, forward-looking bond yield that reflects changes in the long Canada bond over the next few years;
- Both experts normalize the risk free rate using a different methodology but end up in a similar place i.e. Mr. Coyne's forecast bond yield of 3.68 percent vs. Dr. Booth's proxy risk free rate of 4.05 percent; and

[238] FEI Final Submission, p. 92.
[239] AMPC/BCOAPO Final Submission, pp. 45, 53.
[240] CEC Final Submission, p. 23.
[241] CEC Final Submission, p. 23.
[242] CEC Final Submission, p. 24.
[243] CEC Final Submission, p. 40.

- Although it is true that current bond yields incorporate forward expectations of interest rates, as submitted by CEC, interest rates are constantly shifting due to changing economic conditions. As a result, the interest rate at a single point in time may not be reflective of future market conditions.[244]

FEI points to Dr. Booth's oral testimony that the Operation Twist adjustment should be reduced to about 60 to 80 basis points is not consistent with his written evidence in which he describes his 130 basis point adjustment as the "minimum" required adjustment to compensate for the downward effect of government bond buying programs. Further, his support for the adjustment is based on one sample, Canadian Utilities Limited.[245]

Commission determination

The Panel notes that with respect to determining the appropriate risk free rate and an adjustment for abnormal conditions to input into a CAPM estimate, both Mr. Coyne and Dr. Booth:

i) Rely on Consensus Economics forecasts of the 30-year Government of Canada bond yield as the risk-free rate;

ii) Are very close in their estimates of 10-year and 30-year yield spreads; and

iii) Agree on the need to add an additional adjustment to the CAPM to compensate for abnormal conditions in the bond markets resulting from the impact of global bond buying programs.

The Panel recognizes that a risk premium model or CAPM is based on the assumption that current yields are being determined by investors trading off risk and return in a functioning market. The Panel also agrees capital market conditions are similar to 2012 and accordingly, an adjustment for abnormal conditions continues to be reasonable in the current market conditions.

With respect to Mr. Coyne's use of an average of 2016 to 2018 forecast rates to estimate a risk free rate, the Panel is not persuaded that this simple averaging of the forecast rates for this time period results in a supportable "equilibrium or normalized" risk free rate. We accept the position put forward by CEC that current predictions of bond yields already reflect expectations and therefore the current bond yields should be used. While the Panel does not agree with Mr. Coyne's approach to adjusting the risk free rate, we do acknowledge that this is his attempt to adjust for abnormal conditions.

The Panel notes that in the 2013 GCOC Decision, the Commission accepted Dr. Booth's Operation Twist adjustment and Dr. Booth currently uses a consistent methodology in his prepared testimony with the exception of averaging the 2015 spread to address the volatility in the 2015 spread. With respect to his oral testimony that the Operation Twist adjustment should be reduced, the Panel agrees with FEI that reference to a sample on one utility's preferred shares (Canadian Utilities Inc.) as well as the lack of any other detailed analysis related to the predominance of rate reset preferred shares in the index provides insufficient support for a 60 to 70 basis point reduction in Dr. Booth's Operation Twist adjustment. The Panel also notes that AMPC/BCOAPO and CEC both accept Dr. Booth's original 1.3 percent adjustment.

Although the expert witnesses differ in their approach, they both agree on the need for an adjustment in the CAPM to compensate for abnormal conditions in the bond markets resulting from the impact of global bond

[244] FEI Reply Submission, pp. 52–55.
[245] FEI Reply Submission, pp. 17–18.

buying programs. While the expert witnesses differ in their approach and given there is no precise answer, the Panel takes comfort in the fact they end up with similar estimates. **Accordingly, the Panel, using its best judgment, finds a risk free rate plus an adjustment for abnormal conditions in the range of 3.8 to 4 percent is reasonable for use in the CAPM.**

5.2.3.3 Market risk premium (MRP)

Estimate of market risk premium

Mr. Coyne used a MRP of 7.6 percent in his CAPM, based on an ex-ante (forward-looking) and an ex-post (historical average) derivation of the MRP and using an average of both the Canadian and US equity risk premiums to derive a combined North American equity risk premium as follows:

Table 5.4: Market Risk Premium Values[246]

	Canadian MRP	U.S. MRP
Historical MRP	5.6%	7.0%
Forward-looking MRP	9.8%	8.1%
Average	7.6%	

Mr. Coyne states it is appropriate to combine and average US and Canadian equity risk premiums because the equity markets in the US and Canada are "more similar than not, and there is no reason to expect a divergence in market risk premiums going forward."[247]

Dr. Booth estimates the MRP of common equities over long-term Canada bonds at 5.0 to 6.0 percent using historical Canadian capital market history "going back to 1924 so [the estimate] encompasses periods very similar to today, such as the bleak 1930s of slow growth and falling prices, as well as booms and serious inflation problems such as the 1970's." Dr. Booth also gives weight to US data.[248]

5.2.3.3.1 Use of income or total returns in the derivation of the historical MRP

Mr. Coyne determines his ex-post MRP based on the arithmetic average of historical risk premia: for Canada using Morningstar Direct from 1919 through 2011 and Duff and Phelps thereafter and for the US using Duff & Phelps from 1926 onwards.[249] Mr. Coyne uses estimates of the total return on equities over the income return on bonds[250] consistent with the Ibbotson® SBBI® Valuation Yearbook since in his view, this represents the truly risk free rate.[251]

Dr. Booth states that he suspects the difference between his and Mr. Coyne's Canadian MRP estimates results from Mr. Coyne's use of bond yields rather than bond returns which Dr. Booth uses in his estimate. In Dr.

[246] Exhibit B-1, Appendix B, p. 49.
[247] Exhibit B-1, Appendix B., p. 49.
[248] Exhibit C7-7-2, pp. 39–40.
[249] Exhibit B-1, Appendix B, pp. 45–46.
[250] Oral Hearing Transcript Volume 1, p. 195.
[251] Oral Hearing Transcript Volume 1, p. 198.

Booth's view, it is necessary to subtract bond returns from equity returns to estimate the market risk premium and using bond yields which are not returns "ignores the fact that the equity market reflects interest rate changes, whereas the bond return then does not."[252] Dr. Booth also states:

> It is methodologically incorrect to use yields in risk premium analyses, which is presumably why the CIA [Canadian Institute of Actuaries] does not provide that data. Until relatively recently Dr. Booth had never seen an analyst using yields in a risk premium analysis.[253]

Dr. Booth takes the position it is not acceptable to base a risk premium on the subtraction of a yield from a return, since the equity return will reflect changes in interest rates but the bond yield will not.[254]

Intervener submissions

AMPC/BCOAPO submit Mr. Coyne's use of only the income return on bonds is wrong because it compares distinctly different return types and overstates the result because total returns on bonds have been lower than income returns and the differences can add as much as 1.0 percent to the calculated MRP.[255]

CEC's argument is similar to AMPC/BCOAPO's position.[256]

FEI reply submission

With respect to use of the total return or the income return on Canada long bond yields, FEI submits Mr. Coyne has used the appropriate approach as follows:

- The income returns remove the components of the government bond total return that are not risk free and represent a truly risk free rate;
- Ibbotson and Duff & Phelps provide risk premium calculations based on the income portion of the bond yield. Mr. Coyne uses this data in his analysis; and
- Mr. Coyne sites the 2013 Ibbotson® SBBI® Valuation Yearbook which concludes that the income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[257]

5.2.3.3.2 Use of a forward-looking MRP estimate

With respect to use of historical data, Mr. Coyne's view is the longer the averaging period used, the less responsive the data is to current conditions and in the current market conditions, the historical average will understate the current market risk premium.[258] Mr. Coyne states this is the reason he incorporated a forward-looking into his MRP analysis.[259]

[252] Exhibit C7-9, BCUC IR 11.1.
[253] Exhibit C7-8, FEI IR 11.3.
[254] Exhibit C7-8, FEI IR 10.3.
[255] AMPC/BCOAPO Final Submission, p. 8.
[256] CEC Final Submission, p. 31.
[257] FEI Reply Submission, pp. 56–57.
[258] Exhibit B-1, Appendix B, p. 47.
[259] Exhibit B-1, Appendix B, p. 47.

In his ex-ante MRP, Mr. Coyne uses a constant growth DCF methodology to determine the implied expected market return using the S&P/TSX Composite Index for Canada and for the S&P 500 index for the US[260] and he subtracts his forecast risk free rate from the derived expected market returns to arrive at his forward-looking equity risk premia results of 9.78 percent and 8.08 percent, respectively, for Canada and the US[261] In his view, these results "suggest that a pure historical estimate is too low in today's low interest rate environment."[262]

Mr. Coyne's methodology results in the use of an expected constant growth rate of 10.02 percent for the Canadian market and 9.66 percent for the US market.[263] In contrast, Dr. Booth's estimates of the DCF for the Canadian and US markets are set out in Table 5.5.

In response to a request in the oral hearing, Mr. Coyne also prepared a calculation of his forward-looking MRP using a multi-stage DCF resulting in an estimated MRP of 5.49 percent compared to the 7.6 percent derived from including his constant growth model in his primary analysis.[264] Mr. Coyne views this as an "anomalous result" in that current all-time low bond yields should result in market risk premium that is higher than the long-term average, especially given the inverse relationship between interest rates and the market risk premium.

Dr. Booth questioned the credibility of Mr. Coyne's constant growth MRP estimate because it is based on short-term analyst expectations which "are known to be biased" and include average growth rate estimates that exceed "any plausible long run growth rate for the economy." In Dr. Booth's view, Mr. Coyne's basic approach is incorrect as it is only appropriate to use the constant growth model for the overall economy or low risk stocks such as utilities and not for all the firms in the TSX Composite Index.[265]

FEI submits that Mr. Coyne has appropriately used forward-looking data based on the following reasons:

- The use of forward-looking data is necessary to mitigate the inability of long-term data to respond to changes in market conditions;
- The use of only historical MRP data may not properly reflect the current expectations of investors; and
- Mr. Coyne's ex-ante MRP is lowered by the use of his forecast of the 30-year bond yield (3.68 percent) compared to the result if the 30-year bond yield at August 31, 2015 (2.23 percent) was used.[266]

Intervener submissions

AMPC/BCOAPO submit that Mr. Coyne's ex-ante MRP estimates based on constant growth DCFs are not credible. AMPC/BCOAPO prefer Mr. Coyne's adjustment of his model to a multi-stage DCF model and submit the MRP calculation of 5.39 percent for Canada and 3.96 percent for the US are more in line with historical estimates and the independent survey results.[267]

[260] Exhibit B-1, Appendix B, pp. 45–46.
[261] FEI Final Submission, p. 93.
[262] Exhibit B-1, Appendix B, p. 48.
[263] Exhibit B-4, Appendix B, Exhibit JMC-4, Schedule 1 and 2.
[264] Oral Hearing Transcript Volume 3, pp. 486–488.
[265] Exhibit C7-9, BCUC IR 11.1.
[266] FEI Final Submission, p. 93.
[267] AMPC/BCOAPO Final Submission, pp. 52–53.

CEC submits that the forward-looking evidence presented by Mr. Coyne should not be accepted by the Commission.[268]

FEI reply submission

FEI submits that Mr. Coyne's use of a forecast Canada bond yield reduced his ex-ante MRP estimate and similarly he used a forecast rate in his regression analysis.[269]

5.2.3.3.3 Methods to test the reasonableness of MRP estimates

Mr. Coyne tested his MRP estimates by conducting a regression analysis on long Canada bond yields and annual market risk premiums calculated by Morningstar Ibbotson through 2011 and Duff & Phelps after 2011, removing the effects of the global financial crisis in 2008 on the basis that this was an anomalous event. Mr. Coyne notes his "analysis yielded a statistically significant value at the 85 percent confidence level, and in my opinion is informative of the relationship between bond yields and market risk premiums."[270] Mr. Coyne uses the results of his regression formula to calculate a MRP of 10.09 percent using his estimated long Canada bond yield of 3.68. Mr. Coyne concludes that this supports his 7.6 percent MRP estimate as being reasonable and reflects the current low interest rate environment.[271]

In response to CEC IR 2.46.1, Mr. Coyne re-ran the regression equation used to test his MRP estimates without isolating the effects of the 2008 global financial crisis resulting in a reduction of MRP to 7.46 percent. Overall, Mr. Coyne finds the results of the model requested by CEC "to be inferior to its original analysis."[272] Mr. Coyne also refined his criteria and removed other anomalous outliers and this produced MRP result of 8.5 percent accompanied by a higher level of statistical significance.[273]

Dr. Booth uses survey results by Professor Fernandez as a confirmation that his MRP range is in line with the views of other finance professionals and states the survey results support his estimates.[274]

FEI submits that Mr. Coyne's regression analysis on his MRP estimate yielded a statistically significant value and provides evidence that the MRP and bond yields are inversely related. FEI also reiterates Mr. Coyne's calculation, noting that applying his MRP of 7.6 percent yields an ROE of 10.19 percent when a proxy group beta average of 0.65 was used and when the Canada long bond is 3.68 percent. The ROE estimate is reduced to 9.78 percent when the Canada long bond is equal to the August 31, 2015 value of 2.23 percent.[275]

Intervener submissions

AMPC/BCOAPO submit that Dr. Booth's estimate based on historical data is supported by the November 2015 survey by Professor Fernandez against which Dr. Booth checked his data. In AMPC/BCOAPO's view this survey data represents a large sample of analysts, companies and finance professors estimating the MRP in various

[268] CEC Final Submission, p. 30.
[269] FEI Reply Submission, p. 58.
[270] Exhibit B-1, Appendix B, p. 49.
[271] Exhibit B-1, Appendix B, p. 50.
[272] Exhibit B-12, CEC IR 46.1.
[273] Exhibit B-12, CEC IR 46.8.1.
[274] Exhibit C7-7-2, pp. 39–40.
[275] FEI Final Submission, p. 94.

markets. AMPC/BCOAPO also submit that Dr. Booth's results are comparable to independent and credible forecasts including TD Economics, AON Hewitt and Mercer[276] and the estimates used by Mr. Coyne calculating his MRP exceed the expectations of each of the independent forecasters for the market as a whole.[277]

CEC endorses Dr. Booth's conclusions on the MRP[278] and raises additional issues with Mr. Coyne's evidence as follows:

- The effects global financial crisis of 2008 should not have been isolated in Mr. Coyne's regression analysis;
- The weaker F-statistics cited by Mr. Coyne in the regression analysis reflecting 2008 data are not relevant;[279]
- The results of the revised regression analysis may simply be indicative of a generally poor correlation between the variables and as a result less confidence should be applied to the relationship between bond yields and the annual market risk premiums;[280] and
- CEC submits 7.46 percent best represents the long-term average.[281]

FEI reply submission

FEI submits that each of the regression equations Mr. Coyne was asked to perform by CEC continues to corroborate, rather than undermine, his 7.6 percent MRP. FEI also submits Mr. Coyne arrived at his MRP estimate first and used regression to test its reasonableness and the regression result would have supported an even higher MRP.[282]

In reply to Dr. Booth's use of Professor Fernandez's survey results as a confirmation that his MRP range is in line with the views of other finance professionals, FEI submits AMPC/BCOAPO relied primarily on a Fernandez Survey to support their MRP range and there are a number of shortcomings of the study, including the limited number of estimates provided for Canada and the wide dispersion of those estimates.[283]

Commission determination

With respect to the expert's estimates of MRP, the Panel considered the following areas:

a) Use of income or total returns
b) Use of forward-looking MRP estimates
c) Methods used to test whether MRP estimates were reasonable

[276] AMPC/BCOAPO Final Submission, pp. 50–51.
[277] AMPC/BCOAPO Final Submission, p. 52.
[278] CEC Final Submission, p. 38.
[279] CEC Final Submission, p. 32.
[280] CEC Final Submission, p. 32.
[281] CEC Final Submission, p. 34.
[282] FEI Reply Submission, pp. 58–60.
[283] FEI Reply Submission, p. 60.

a) Use of income or total returns

The Panel notes that both experts use similar historical periods and give weight to US data. The Panel observes that Mr. Coyne's average historical MRP is 6.3 percent, compared to Dr. Booth's average of 5.5 percent. Dr. Booth's attributes this difference to Mr. Coyne's use of income returns on bonds rather than total returns which Dr. Booth uses in his estimate. AMPC/BCOAPO also submit the use of income returns can add as much as 1.0 percent to the calculated MRP. The Panel accepts that the difference between the historical averages of the two experts is attributed to this difference in methodology. While Dr. Booth considers this approach to be methodologically incorrect and one that he has only observed recently, he does not provide any further evidence to support his view. In the Panel's view, the differences in the positions of the expert witnesses should be examined further in the next cost of capital proceeding. While not endorsing this approach, the Panel accepts that Mr. Coyne's position is supported by third party evidence including:

- The reference to the 2013 Ibbotson® SBBI® Valuation Yearbook indicating the income return on bonds represents the truly risk free rate; and
- The use of the income returns by Ibbotson and Duff & Phelps in their risk premium calculations.

Given the use of income or total returns is the only clearly identified difference between the two historical MRP estimates, **the Panel accepts Mr. Coyne's estimate of historical MRP of 6.3 percent calculated giving equal weight to Canadian and US historical MRP.**

b) Use of forward-looking MRP estimates

The Panel notes that Dr. Booth is satisfied to base his estimates on historical data dating back to 1924 and encompassing periods he considers to be very similar to today and confirms his position by comparing them to the Fernandez Survey consisting of current expectations of finance professionals. Mr. Coyne's view is the historical average will understate the current market risk premium given current market conditions. This is why he incorporated a forward-looking approach into his analysis. The Panel notes that while the approaches of the experts differ, both experts agree some consideration of forward-looking expectations and data is necessary to appropriately estimate MRP. **Therefore, the Panel finds that some weight should be given to forward-looking MRP estimates.**

The Panel agrees with the interveners' concerns over Mr. Coyne's use of a constant growth DCF methodology to determine the implied forward-looking expected market return and is concerned the growth rates he uses in these models overstate the MRP. The Panel also put little weight on the multi-stage DCF values Mr. Coyne presented in response to the undertaking at the oral hearing because there was not an opportunity to fully explore it within the oral hearing. Further, the Panel notes Mr. Coyne's lack of confidence in the "anomalous" results given that the current all-time low bond yields should result in market risk premium that is higher than the long-term average considering the inverse relationship between interest rates and the market risk premium. **Accordingly, the Panel finds it can place little weight on Mr. Coyne's constant growth or multi-stage DCF estimates of the forward-looking MRP.**

While Dr. Booth estimates the MRP of common equities over long-term Canada bonds at 5.0-6.0 percent using historical Canadian capital market history, the Panel takes note of Dr. Booth's constant growth DCF estimates for the market as a whole as set out in Table 5.5, where he estimates an average of 8.75 percent for the Canadian market as a whole and 9.6 percent for the US market as a whole based upon his estimates of sustainable growth

rates. Dr. Booth's sustainable growth rates average 5.25 percent and 6.91 percent for Canada and US markets, respectively. In comparison, Mr. Coyne's constant growth DCF estimates for the market as a whole using a constant growth model are 10.02 percent for the Canadian market and 9.66 percent for the US market. The Panel considers a reasonable forward-looking growth rate to be somewhere between the estimates of the two experts. **Therefore, with the application of judgement, the Panel accepts 6.5 to 7.5 percent as a reasonable range of estimates for a forward-looking MRP.**

Mr. Coyne gives equal weight to his historical and forward-looking MRPs estimates, while Dr. Booth uses the Fernandez Survey as a check for his historical MRP estimates. As noted above, the forward-looking estimates for the market as a whole reflect different approaches and a wide range of results, none of which were carefully examined in this proceeding. Further, in the Panel's view, all other things being equal, there is a trade-off between relevance of forwarding-looking data and the reliability of historical data and given the higher reliability of the historical estimates, **the Panel places more weight on historical estimates of MRP and less weight on forward-looking MRP estimates and accepts a range of 6.3 to 7.0 percent as a reasonable estimate of MRP.**

With respect to the use of the equity market return expectations of pension funds and other investment managers including TD Economics, AON Hewitt and Mercer, to the extent they are available, the Panel considers this information may represent a relatively direct view of forward-looking returns expected from the equity markets and can be useful as a check of the expert witnesses' forward-looking MRP estimates. The evidence on the record indicates that pension and investment managers appear to be forecasting returns on the Canadian equity markets in the range of approximately 8 percent to 9 percent on an arithmetic basis.

c) Methods used to test whether MRP estimates were reasonable

With respect to CEC's submissions related to Mr. Coyne's regression analysis, the Panel accepts that Mr. Coyne does not use this approach to develop a point estimate of MRP but rather as a means to corroborate his estimate of MRP. The Panel agrees with FEI that each of the regression equations Mr. Coyne was asked to perform by CEC do not undermine his 7.6 percent MRP.

The Panel does note FEI's view that there are a number of shortcomings of the Fernandez Survey, including the limited number of estimates provided for Canada and the wide dispersion of those estimates. Accordingly, the Panel finds that this survey is not an appropriate tool on which to base an estimate of the current market expectations for MRP but the Panel does accept that its results provide some corroboration of the historical MRPs of the two experts.

5.2.3.4 Beta and beta adjustments

Beta estimates

Beta is a measure of systematic risk that represents the risk of a security relative to the market. Beta is an adjustment to the MRP to account for the degree to which the individual stock contributes to the market risk. With respect to beta, the issue the Panel needs to decide is the appropriate range of the adjustment to raw or historical beta estimates reflective of current market expectation.

Mr. Coyne's beta calulations are adjusted to the market mean of 0.65 for his Canadian proxy group and 0.78 for his US proxy group. Mr. Coyne uses estimates from:

(1) Value Line for the US gas distribution proxy group which reports historical beta based on five years of weekly stock returns and uses the New York Stock Exchange as the market index.

(2) Bloomberg for the Canadian proxy group which Mr. Coyne set to five years of weekly returns on the S&P 500 or S&P/TSX Composite Index.

Both Value Line and Bloomberg betas are adjusted to compensate for the tendency of beta to revert towards the market mean of 1 over time.[284]

Based on his analysis, Dr. Booth judges the relative risk of Canadian regulated utilities to be 45 to 55 percent of the market as a whole.[285] Dr. Booth uses five years of monthly data and estimates each beta using the standard formula covariance (Y, X) divided by Population variance (X).[286] He states that the recent history of the beta coefficients of Canadian utilities is in the approximate range of 0.30 to 0.45 and attributes the higher end of this range to the post-financial crisis and the internet bubble.[287] In Dr. Booth's view, as interest rates increase back to normal levels, he expects their betas to revert back to their long-run average of 0.45 to 0.55.[288]

Dr. Booth compares his beta estimates of seven Canadian utility holding companies estimates by RBC, Yahoo, and Google.[289] He notes that these sources do not indicate that their betas are adjusted.[290] He also considered the history of US firms as a comparison and points out they have a higher beta difference of .10 compared to Canadian utilities.[291]

5.2.3.4.1 The appropriate adjustment to beta

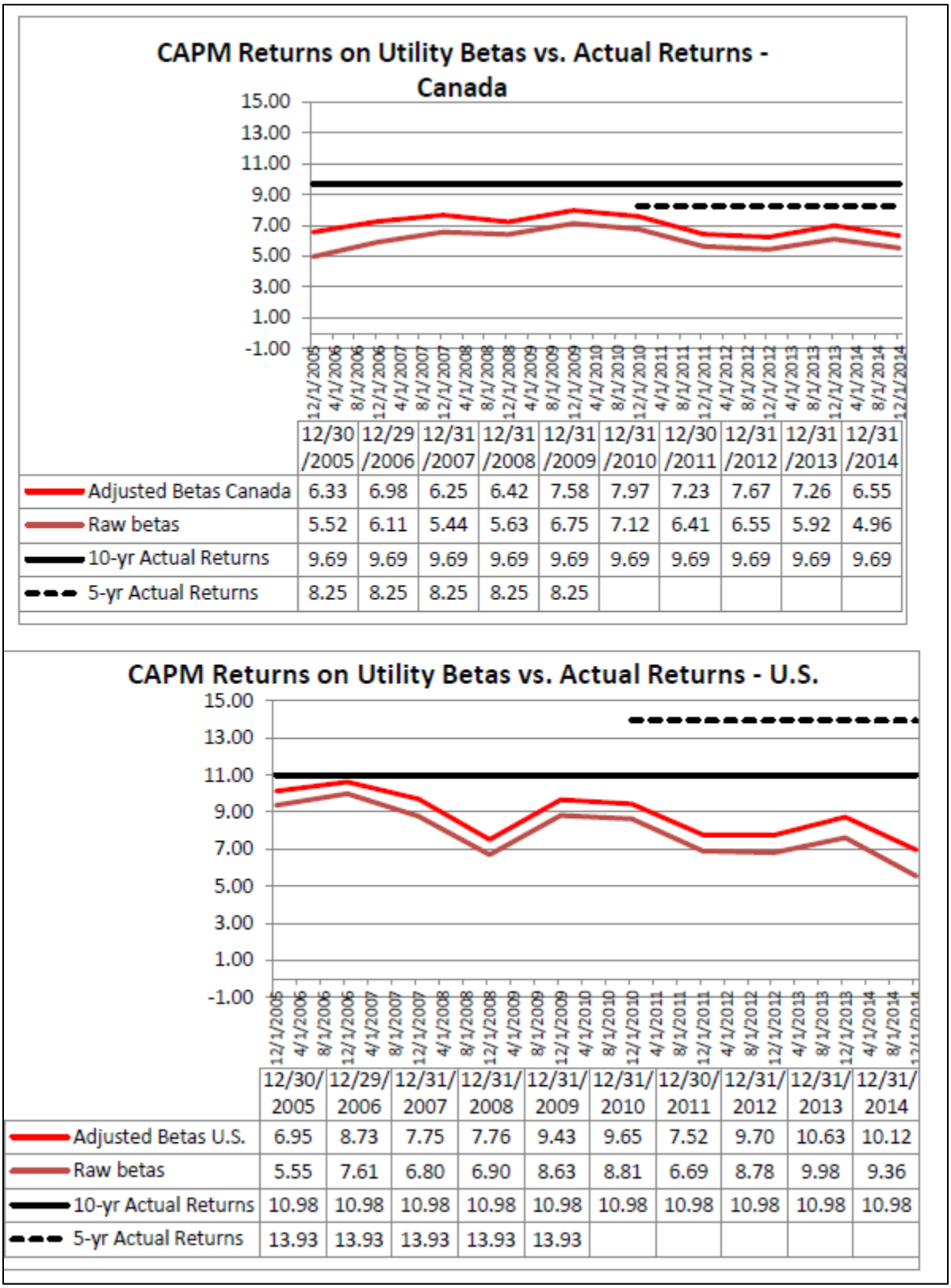
Mr. Coyne cites the empirical evidence, including the Blume studies, supporting a beta adjustment and outlines the statistical purpose for adjusting toward the market average of 1.0. In Mr. Coyne's evidence, he explains the reason to adjust betas toward 1.0 as follows:

> Betas that are below the market average of 1.0 tend to have negative the error terms and underestimate future returns. Consequently, it is necessary to adjust forecasted betas toward 1.0 in an effort to improve forecasts. Because current stock prices reflect expected risk, one must use an expected beta to appropriately reflect investors' expectations. A raw beta reflects only where the stock price has been relative to the market historically and is an inferior proxy for the expected returns when compared to the adjusted beta.[292]

Mr. Coyne presented an analysis to demonstrate it is apparent that unadjusted betas do a poor job of estimated expected returns, as follows:

[284] Exhibit B-1, Appendix B, p. 42.
[285] Exhibit C7-7-2, p. 40.
[286] Exhibit C7-7-2, Appendix C, p. 6, Schedule 2.
[287] Exhibit C7-7-2, p. 40.
[288] Exhibit C7-7-2, Appendix C, p. 6.
[289] Exhibit C7-7-2, Appendix C, p. 8.
[290] Exhibit C7-7-2, Appendix C, p. 10.
[291] Exhibit C7-7-2, Appendix C, p. 6.
[292] Exhibit B-1, Appendix B, pp. 42–43.

Figure 5.1: Comparison of CAPM Returns on Utility Betas vs. Actual Returns[293]



	12/30/2005	12/29/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/30/2011	12/31/2012	12/31/2013	12/31/2014
Adjusted Betas Canada	6.33	6.98	6.25	6.42	7.58	7.97	7.23	7.67	7.26	6.55
Raw betas	5.52	6.11	5.44	5.63	6.75	7.12	6.41	6.55	5.92	4.96
10-yr Actual Returns	9.69	9.69	9.69	9.69	9.69	9.69	9.69	9.69	9.69	9.69
5-yr Actual Returns	8.25	8.25	8.25	8.25	8.25					

	12/30/2005	12/29/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/30/2011	12/31/2012	12/31/2013	12/31/2014
Adjusted Betas U.S.	6.95	8.73	7.75	7.76	9.43	9.65	7.52	9.70	10.63	10.12
Raw betas	5.55	7.61	6.80	6.90	8.63	8.81	6.69	8.78	9.98	9.36
10-yr Actual Returns	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98
5-yr Actual Returns	13.93	13.93	13.93	13.93	13.93					

[293] Exhibit B-8, AMPC-Concentric IR 5.4.

Mr. Coyne states the analysis shows that even when applying betas adjusted towards the market mean of 1.0, modifications must be made to the CAPM to reasonably project utility equity returns.[294]

Mr. Coyne also supports his position by stating "the Value Line and Bloomberg methodologies are widely accepted and utilized by financial analysts, investors, corporations, and broadly accepted by U.S. regulatory commissions" referencing a similar finding in the Brattle Group Report.[295]

Mr. Coyne testified that his adjustment methodology was not an issue in the OEB Consultative Process on Cost of Capital and the Board did not take exception to his use of adjusted Value Line and Bloomberg betas.[296] He states he is not aware of a single US state or federal regulatory jurisdiction that takes exception to the use of this adjustment methodology and that this issue only comes up in Canadian regulatory proceedings in which Dr. Booth is a witness.[297] In his opinion, the prevailing wisdom on the required adjustments to utility betas is to use the Blume adjustment.[298]

With respect to adjusted betas, in Dr. Booth's view, utility witnesses frequently adjust toward the overall market average of 1.0 which is the level recommended by Blume for the "whole universe of stocks." He states that low beta estimates for utilities "do not mean they are under-estimates, since utility betas are perennially low due to their low risk"[299] and that there is no evidence of these estimates going towards 1.0.[300] Dr. Booth also discusses the work of Gombola and Kahl who he states demonstrate that utility betas are better mechanically adjusted to their grand mean of around 0.50. Dr. Booth finds that such an adjustment makes very little difference to his estimates. Recognizing that betas need to be adjusted, Dr. Booth prefers to "use judgement constrained by the actual historic evidence."[301]

With respect to the use of Merrill Lynch and Value Line to provide adjusted betas, Dr. Booth notes these are US data providers and companies in Canada such as the Financial Post, RBC and the Globe & Mail do not adjust betas and this approach enables the user to apply judgment. He stated he has no issue with adjusting betas but has a problem with adjusting them towards 1.0.[302]

FEI submits that Mr. Coyne's approach to beta and his results are to be preferred based on the following:[303]

- Both Value Line and Bloomberg betas already incorporate the "Blume adjustment";
- Mr. Coyne's own data analysis, the Brattle Group Report findings and other empirical studies have shown that stocks with low betas, including utility stocks, have achieved returns higher than predicted by the traditional CAPM;
- the Blume adjustment is widely used and accepted in every regulatory jurisdiction without debate, except those jurisdictions in which Dr. Booth testifies;

[294] Exhibit B-8, AMPC-Concentric IR 5.4.
[295] Exhibit A2-3, Brattle Group Report, May 31, 2012, pp. 15–16.
[296] Oral Hearing Transcript Volume 2, pp. 228–230.
[297] Exhibit B-16, Rebuttal Evidence of Mr. Coyne, p. 28.
[298] Exhibit B-16, Rebuttal Evidence of Mr. Coyne, p. 28.
[299] Exhibit C7-7-2, Appendix C, p. 7.
[300] Oral Hearing Transcript Volume 3, p. 577.
[301] Exhibit C7-7-2, Appendix C, pp. 8–9; T3:572, 580.
[302] Oral Hearing Transcript Volume 3, pp. 691–692.
[303] FEI Final Submission, pp. 96–98.

- Adjustment to the grand mean of utility betas is not a suitable substitute for the Blume adjustment because it does not sufficiently compensate for the negatively biased result for low beta firms and does recognize the additional risk inherent in the calculation of beta for interest-rate sensitive firms; and
- Dr. Booth also adjusts his raw betas and has used the same generic beta adjustment for at least ten years.

Intervener submissions

AMPC/BCOAPO make the following submissions in support of Dr. Booth's approach to determining beta:[304]

- Dr. Booth's determination of the relative risk of a Canadian utility of 45 to 55 percent is a generous beta relative to the much lower utility betas that have been experienced in recent years;
- No other Canadian regulatory board has accepted betas adjusted towards 1.0;
- Analysts do not generally adjust betas towards a mean of 1.0 as evidenced by sources examined by Dr. Booth, including RBC, Google, Yahoo, the Globe and Mail and the Financial Post;
- Mr. Coyne's calculation of Canadian beta adjusted to the industry average of 0.57 is very close to the upper end of Dr. Booth's range and the bottom of Dr. Booth's range is comparable to Mr. Coyne's raw Canadian beta of 0.47;
- In the last 22 years, Canadian utility betas have not reached the .60 used by the Commission in 2013; and
- Adjusting beta to the average beta of utilities stocks is "best practice" as this is more indicative measure of where utility stock betas are likely to average over time.

CEC supports Dr. Booth's approach to beta and notes that Mr. Coyne's incorporation of the US utilities data results in a higher beta than would be applicable to Canadian utilities.[305]

FEI reply submission

FEI submits that Mr. Coyne's use of Blume-adjusted betas produces a more reasonable result and should be preferred. In its reply submission, FEI responds to the interveners submissions as follows:[306]

- To respond to its interpretation of AMPC/BCOAPO's characterization of the Blume adjustment, FEI reiterates that the Blume adjustment is:
    (a) Not an adjustment to 1.0 but rather directionally toward 1.0 by giving 2/3 weighting to raw betas and 1/3 weight to the market mean of 1.0.; and
    (b) Does not mean that there is an expectation that betas will reach 1.0.
- In the 2013 GCOC Decision, the Commission found that none of the positions fully explained the beta values and accepted an intermediate beta of 0.60, however in the current proceeding, there is significant evidence on the record to warrant placing greater weight on Blume-adjusted data including:
    (a) the Blume studies;
    (b) excerpts from Dr. Morin's textbook;
    (c) the Brattle Group Report;

[304] AMPC/BCOAPO Final Submission, pp. 46–49.
[305] CEC Final Submission, pp. 28–29.
[306] FEI Reply Submission, pp. 67–72.

(d) the Fernandez studies;

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

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

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

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

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

- The riskiness of utility stocks relative to the market should not be used as a basis for determining betas and the lower volatility of these stocks only suggests that betas should be less than one. Further, one would expect raw betas to be below adjusted betas for low beta stocks and the fact that the betas are lower is not an indication of whether raw betas need to be adjusted.

Commission determination

Based on the evidence presented by both experts, the Panel finds it is appropriate to adjust historical betas to estimate expected returns using the CAPM. Both experts and all parties agree that an adjustment to historical raw beta is required.

The issue for the Panel to determine is what the appropriate adjustment to raw historical betas should be. In the 2013 GCOC Decision, the Commission found that none of the positions fully explained beta and on that basis, accepted a beta representing the range of reasonable estimates presented. The Panel notes AMPC/BCOAPO's statement that "there is no historical statistical evidence supporting the Commission's use of a beta of 0.60"[307] with reference to the 2013 GCOC Decision. The Panel also notes FEI's argument that there is significant evidence on the record to consider the appropriateness of placing greater weight on Blume adjusted data.

To determine the amount of the beta adjustment, the Panel considers the appropriateness of using an adjustment to the average beta of utility stocks. Both AMPC/BCOAPO and CEC support such an adjustment. While Dr. Booth refers to the Gombola and Kahl study and considers the effect of adjusting to the average beta of utility stocks, he recommends that recent historical betas be adjusted upward to their historical range reflecting normal market risk. Dr. Booth prefers the use of judgment constrained with historical evidence over simply adjusting to the average of utility stocks. Mr. Coyne's view is such an adjustment does not sufficiently compensate for the negatively biased result for low beta firms and does recognize the additional risk inherent in the calculation of beta for interest-rate sensitive firms. **Given that neither expert endorses the adjustment of beta to the average of utility stocks, the Panel finds there is little evidence in this proceeding to support an adjustment to the average beta of utility stocks.**

The Panel does not accept it should rely solely on Dr. Booth's judgement without stronger empirical corroborating evidence to support his beta adjustments. Accordingly, **Panel finds that it can place only limited weight on Dr. Booth's beta estimates.**

[307] AMPC/BCOAPO Final Submission, p. 48.

With respect to the use of the Blume adjustment, the Panel notes Mr. Coyne's evidence presented in Figure 5.1 above which in his view, shows that unadjusted betas do a poor job of estimating expected returns and Blume adjusted betas still understate the actual return but the result is closer than using raw betas. The Panel is of the view that this analysis confirms, consistent with the Fernandez beta study Mr. Coyne refers to in his rebuttal evidence, the beta calculated using historical data is not a good approximation of a company's beta. In the Panel's view, this analysis confirms that an adjustment is needed but does not provide evidence of what the adjustment to beta should be. The Panel is also concerned that given the disruption in the capital markets during the period presented and recent merger and acquisition activity[308] in the industry there may be confounding factors impacting the results of the analysis.

The Panel acknowledges Mr. Coyne's view that the Blume adjusted Value Line and Bloomberg data he uses are used and accepted. On the other hand, Dr. Booth's evidence shows some data providers do not use this method. Further, the Panel considers that findings of the Brattle Group indicate some variation in practice:

> Beta estimates are provided by many data services for Canadian, American and other traded companies. The most common methodology to estimate betas is to use the most recent five years of weekly or monthly return data. These betas may then be adjusted towards one as adjustment for sampling reversion that was first identified by Professor Marshal Blume (1971, 1975).[309]

The Panel also notes Mr. Coyne's testimony that the Blume methodology is a supported and widely used methodology utilized by financial analysts, investors and corporations. However, considering the survey results included in the Fernandez beta study Mr. Coyne refers to in his rebuttal evidence, the Panel considers the justification for doing so is likely more practical than theoretical.

The Panel notes that none of the studies Mr. Coyne refers to in Exhibit B-31 specifically relates to the behaviour of utility stock betas. The Panel is not persuaded the evidence in this proceeding supports the position that the Blume adjustment applies to utilities in the same way it applies to the market as a whole. The Panel notes this was a point made by Dr. Booth in his evidence.

The Panel has also considered decisions in other jurisdictions. While no other Canadian jurisdiction has previously endorsed the Blume methodology, it is not uncommon to rely on adjusted betas; Mr. Coyne testified US jurisdictions regularly consider or rely on Blume adjusted betas.

Although the methodologies may vary, neither of the experts disagree that some degree of upward adjustment is necessary. The Panel agrees.

The Panel accepts that its task is to estimate beta for a utility stock but as pointed out, there is a lack of empirical evidence supporting the applicability of the Blume adjustment to utility stocks. **Because of this, the Panel finds it can place only limited weight on Mr. Coyne's use of the Blume adjustment as a methodology to adjust historical utility betas.**

[308] Oral Hearing Transcript Volume 3, pp. 584–585.
[309] Exhibit A2-3, Brattle Group Report, pp. 15–16. (Emphasis added)

Given that the Panel places only limited weight on the beta estimates of the experts and there has been little change in economic conditions since the last hearing, consistent with the 2013 GCOC Decision, the Panel continues to accept beta estimates representative of the range of estimates presented of approximately 0.6.

5.2.3.5 Dr. Booth's credit spread adjustment

In his evidence, Dr. Booth analyzed the volatility indices and the spread between corporate debt and Canada bonds and concludes that the increase in A credit spread to 191 bps from the typical average for the normal business cycle of 100 bps was caused partially by liquidity problems which have to be disentangled.[310] Dr. Booth recommends 50 percent adjustment to changes in credit spreads or 0.45 percent[311] to adjust the current market effect. Dr. Booth regards this sort of adjustment as converting the CAPM into a conditional CAPM (CCAPM) where the CAPM holds conditional upon the state of the financial markets.[312]

Mr. Coyne's issue with the CCAPM adjustment is that he believes in current market conditions, the default component would be greater than 50 percent, necessitating a higher adjustment.[313]

Intervener submissions

AMPC/BCOAPO reiterated that 0.45 percent adjustment to the CAPM result, as a prudent adjustment is consistent with the objective of ensuring that FEI's fair ROE reflects current capital market conditions.[314] CEC submits Dr. Booth has provided credible evidence with respect to the need for and appropriate calculation of the credit spread adjustment.[315]

Commission determination

The Panel takes no position with respect to the merits of Dr. Booth's recommended credit spread adjustment. **The Panel finds the evidence on the credit spread adjustment is not persuasive enough to warrant a credit spread adjustment.**

5.2.3.6 Appropriate CAPM estimate

Commission determination

In arriving at its overall determination on the CAPM estimate, the Panel recognizes that using a CAPM requires the selection of a number of subjective decisions that can lead to significantly different results. In addition, consistent with the view of the experts, the Panel recognizes the limitations of the model are exacerbated in the current market environment as reflected in the need to modify the risk free rate to adjust for abnormally low bond yields. Recognizing these limitations, the Panel considers it is necessary to use its best judgment to assess the reasonableness of the inputs into the CAPM and to determine an appropriate overall estimate for the model. The Panel will then determine the appropriate weighting to apply to the results under current market conditions relative to the DCF.

---

[310] Exhibit C7-9, BCUC IR 13.2.
[311] 91 basis point (191-100) with 50 percent adjustment.
[312] Exhibit C7-9, BCUC IR 13.3.
[313] Exhibit B-18, Mr. Coyne Rebuttal, p. 33.
[314] AMPC/BCOAPO Final Submission, p. 53.
[315] CEC Final Submission, p. 40.

With application of appropriate judgement, the Panel accepts an estimate of approximately 8.0 percent, excluding flotation costs, as the CAPM estimate for the appropriate ROE. The Panel arrives at this determination by drawing together its conclusions on the individual inputs to the CAPM estimates as well as considering the level of uncertainty involved, the requirement to exercise its judgment and considering the conclusions reached in previous decisions. As outlined earlier in Section 5.2.3, the Panel's conclusions with respect to individual inputs to the CAPM are summarized below:

i) A risk free rate plus an adjustment for abnormal conditions in the range of 3.8 to 4.0 percent. This is based on both experts agreeing that an adjustment to the risk free rate is necessary in the current market conditions and that both experts' end up with similar estimates.

ii) MRP in the range of 6.3 to 7.0 percent based on:

   a) Acceptance of Mr. Coyne's historical MRP of 6.3 including the use of income returns as opposed to total returns. This is based on third party evidence supporting his view as well as giving equal weight to Canadian and US historical MRP.

   b) Consideration of forward-looking MRP estimates while placing more weight on historical because of the use of largely untested growth estimates in the forward-looking calculations and the Panel's view that forward-looking data is less reliable than historical estimates.

iii) Beta estimate of approximately 0.6. The Panel considers the views of the parties that an upward adjustment to raw historical betas is necessary but given the lack of empirical evidence supporting their positions, the Panel places no reliance on the adjustment methods used by the experts. Consistent with the 2013 GCOC Decision, the Panel bases it determination on the range of estimates presented with an intermediate value of approximately 0.6.

5.2.4 Discounted cash flow estimates

The DCF model is another tool that is commonly used to estimate the cost of capital. This model works directly with an individual asset's cash flows and price. In estimating cost of equity, the DCF model "derives the opportunity cost of equity determined by the market, without having to model explicitly the market risk-return trade-off that generated the market's opportunity set." As such, the DCF model is based on the recognition that the discounted sum of all future expected dividends results in the current stock price and equates the cost of equity with the expected dividend yield plus the expected growth rate of dividends. Therefore, it derives the opportunity cost of equity as determined by the market.[316]

Like the use of the CAPM, reliance on the DCF model to estimate the cost of equity is not without its issues. Two commonly raised issues with this model are the choice of DCF model to be relied upon and the determination of an appropriate growth rate to be used in the formula. With these in mind, the Panel has identified three areas which need to be explored in determining an appropriate DCF estimate. These are as follows:

i) The value of the constant growth versus a multi-stage approach to using the DCF model.

ii) Guidance the Panel can take from the submissions given the difference in approach to DCF taken by Dr. Booth and Mr. Coyne.

iii) The appropriate weight to place on analyst estimates.

In addition to these considerations and further to Section 5.2.2, the Panel must also address Mr. Coyne's proxy group make-up and determine the relative weight given to them.

[316] Exhibit A2-3, Brattle Group Report, p. 26.

5.2.4.1 Constant growth and multi-stage DCF model variants

There are two types of models which are commonly used for DCF estimates, the constant growth and the multi-stage models. Each of these has been used by the experts in this proceeding.

As outlined by Mr. Coyne, the constant growth DCF model is based on a number of assumptions. These include the following:

- an average growth rate for earnings and dividends which is constant;
- a stable dividend payout ratio;
- a constant price-to-earnings multiple; and
- a discount rate greater than the expected growth rate.[317]

Put simply, the constant growth model yields a cost of equity equaling the expected dividend yield plus the perpetual expected future growth rate for dividends. In implementing this model, the expected dividend, the growth rate and the current stock price must be determined.

Where there is reason to believe that investors do not expect a steady growth rate in perpetuity as an input assumption in the constant growth DCF model, the multi-stage DCF model is another option. As outlined in the Brattle Group Report, the multi-stage DCF model may be appropriate where there is reason to believe investors do not expect a steady growth rate forever, but rather, have different growth rate forecasts in the near term (e.g., over the next five or ten years) converging to a constant terminal growth rate at the end of the near-term (e.g., at the end of five or ten years).[318] A key element of this is the expected growth rate must become and remain constant at some point. However, the choice of an appropriate growth rate is the most controversial part of the DCF model implementation, particularly for the long-term as this has a major effect on the cost of equity estimated by the model. This is further complicated by the fact forecast growth rates are generally unavailable for periods longer than five years. This is important given the Brattle Group Report's statement that "the DCF approach requires that the stable-growth assumption must be reasonable and must be met *within the period for which forecasts are available.*"[319]

Generally, the Brattle Group Report views the DCF approach as being conceptually sound as long as its assumptions are met but in practice, can run into difficulty when those assumptions are so strong and unlikely to correspond to reality. Further, the stability of DCF cost of equity estimates can be a problem across similar companies or over a relatively short time span. The more stable a company or industry the less of a problem such issues pose.[320]

Both Mr. Coyne and Dr. Booth present variants of the DCF model. The following table sets out Mr. Coyne's and Dr. Booth's estimates and variants of the DCF model.

[317] Exhibit B-1, Appendix B, p. 51.
[318] Exhibit A2-3, Brattle Group Report, pp. 9, 26–27.
[319] Exhibit A2-3, Brattle Group Report, pp. 27–30. (emphasis in original)
[320] Exhibit A2-3, Brattle Group Report, p. 30.

Mr. Coyne and Dr. Booth's use of the DCF Model

Table 5.5 summarizes the expert witnesses' use of the DCF model variants and their estimates.

Table 5.5: Summary of DCF Estimates

Mr. Coyne		
DCF model type	**Specification**	**DCF Estimates[321]**
Constant growth model[322]	• Seven US and five Canadian proxy companies; • Earnings growth rates taken from SNL Financial, Value Line, Zacks and First Call for each company in the Canadian and US proxy group.	Canada: 12.20%[323] US: 9.18%[324] Average: 10.69%
Multi-stage model (selected)[325]	• Same companies and growth data source as constant growth model above; • Estimated company growth for Years 1 to 5; declining to long-term growth in Years 6-10; nominal GDP growth in Year 10+	Canada: 9.32%[326] US: 8.39%[327] Average: 8.86%
Dr. Booth		
DCF model type	**Specification**	**DCF Estimates**
Constant growth model[328]	• Whole Canadian market • Sustainable growth rate range of 4.72 to 5.77%	Approximately 8.75%[329]
Constant growth model[330]	• US S&P 500 firms • Sustainable growth rate 6.91% (average)	Range: 9.04% to 10.14%[331]

[321] Mr. Coyne's DCF ROE estimates include 50 bps flotation allowance and therefore, Mr. Coyne's estimates in the table are 50 bps lower for comparison purposes

[322] Exhibit B-1, Appendix B, p. 5; Exhibit B-1, Appendix B, Exhibit JMC-7, Schedule 1.

[323] Canada: growth rates, depending on the company, range from 4.19% to 13.63%. Average growth rate 8.03%; Exhibit B-1, Appendix B, Exhibit JMC-7, Schedule 1, pg. 2.

[324] US: growth rates, depending on the company, range from 4.75% to 6.95%. Average growth rate 5.65%; Exhibit B-1, Appendix B, Exhibit JMC-7, Schedule 1, pg. 1.

[325] Exhibit B-1, Appendix B, p. 5; Exhibit B-1, Appendix B, Exhibit JMC-7, Schedule 2, Column 10.

[326] Canada: Years 1 to 5 growth range from 4.19% to 13.63% with an average of 8.03%. Year 6 to 10-average 5.98%. Nominal GDP growth in perpetuity is 3.94%; Exhibit B-1, Appendix B, Exhibit JMC-7, Schedule 2, pg. 2.

[327] US: Years 1 to 5 growth rates range from 4.75% to 7.25% with an average of 5.65%. Year 6 to 10-average 5.47%. Nominal GDP growth in perpetuity is 4.55%; Exhibit B-1, Appendix B, Exhibit JMC-7, Schedule 2, pg. 1.

[328] Exhibit C7-7-2, Direct Testimony of Dr. Booth, Appendix D, pp. 6–8.

[329] TSX dividend yield at the end of September 2015 is 3.17%; Long run growth rate in dividends and earnings is 5.35%.

[330] Exhibit C7-7-2, Direct Testimony of Dr. Booth, Appendix D, pp. 9–10.

[331] Current dividend yield on the S&P 500 index: 1.99%; S&P 500 firms retention rate (b) is 52.3% since 1956; S&P 500 firms average ROE is 13. 43% since 1987. Median is 14.07%. Over the same period, the retention rates were 51.5% (average) and 57% (median); Growth rates: 57%*14.07% = ~7.99% (median) 51.5%*13.43% = ~6.91% (average).

Constant growth model[332]	• Eight low risk US utilities • Sustainable growth rate	Range: 7.09% to 10.40%[333] Median: 8.65% Sustainable Growth Rate Model: 7.02% median

Mr. Coyne applies both a constant growth and a multi-stage DCF model to the Canadian and US proxy groups he has developed. Mr. Coyne's selection of proxy groups has been discussed in Section 5.2.2. In preparing the DCF models for these proxy groups, Mr. Coyne notes the profiles of US proxy group of companies are more like FEI than the Canadian proxy companies but he has nonetheless given them equal weight because of the importance of providing a Canadian perspective. Growth rates for both Canadian and US proxy groups were developed using data from a number of sources as noted in Table 5.5 above. The first five year's growth estimates were based on an average of analyst's estimates. This was followed by a five year transitional stage designed to change the growth rate each year on a *pro rata* basis and eventually connect with the long-term forecast for Year 11 and beyond. Growth estimates for Year 11 and beyond are based on the long-term forecast of GDP.[334]

Mr. Coyne has relied only on the multi-stage model to inform his recommendations for ROE noting that in the 2013 GCOC Decision, the Commission found the "use of analyst's forecasts is more consistent with the multi stage models where analysts forecasts can inform the early stage and longer term forecasts such as GDP growth, can inform the later stages." As outlined in Table 5.5, which took out flotation for comparability across estimates by the experts, the use of the multi-stage model produced results of 9.32 percent for Canada and 8.39 percent for the US proxy group.

According to Dr. Booth, the DCF model should only be used for low risk dividend paying stocks or the market as a whole, where the expected dividends can be assumed to grow at some long run average growth rate.[335]

Dr. Booth indicates he has placed little emphasis on the DCF model in the past and has traditionally viewed his DCF estimates as "checks" on his CAPM estimates but recent low Canada bond yields have given him cause for re-evaluation. Dr. Booth has relied on a DCF model using sustainable growth rates. The sustainable growth styled model is built on the premise that a company's growth is driven by a firm's expected earnings and the extent to which these earnings are paid out as dividends or retained for future investment in the company. Dr. Booth has applied his model to the market as a whole and estimates "the fair return as being 8.50-9.00% in Canada and slightly higher in the US." Dr. Booth estimates the US equity return in the 9.0 to 10 percent range. When DCF is applied individually against a proxy sample of eight US utilities (six were in Mr. Coyne's proxy group), an equity cost of 8.65 percent results based on median analyst five-year growth forecasts. However, when based on Dr. Booth's sustainable growth forecast approach, 7.02 percent is the median DCF equity forecast for the eight utilities in his proxy group.[336] Dr. Booth did not comment on the inclusion of flotation costs in his DCF estimates.

[332] Exhibit C7-7-2, Direct Testimony of Dr. Booth, Appendix D, pp. 13–14.
[333] Forecast growth rate 4% to 7%; Current dividend yield range from 2.29% to 4.02%. Average: 3.21% and median: 3.2%; Current (November 18, 2015) dividend yield: 1.98%.
[334] Exhibit B-1, Appendix B, pp. 5–6, 58–59.
[335] Exhibit C7-7-2, pp. 50–51, 58; Appendix D, pp. 6–17.
[336] Exhibit C7-7-2, Appendix D, pp. 6–17; Ibid., pp. 50–51, 58.

Mr. Coyne does not agree that the sustainable growth rate approach as applied by Dr. Booth appropriately captures the expected growth rate of a regulated utility. In his words, "In the fullest form of the sustainable growth formula, new equity issuance, or what are commonly known as externally generated funds are also considered."[337] This method is the common approach for sustainable growth rate calculation and Dr. Booth's approach is the model in its simplest form projecting growth as a function of internally generated funds. Mr. Coyne's position is that a firm's growth is understated in this model by the failure to consider debt and equity issuances as a source of future growth.

Mr. Coyne also points out that the Federal Energy Regulatory Commission (FERC) has moved away from using the sustainable growth rates in its DCF methodology and now uses a two-step DCF methodology relying on a combination of analyst growth rates and GDP growth estimates. Dr. Coyne continues by stating he has concerns with the reasonableness of Dr. Booth's sustainable growth rate calculation in that he "has effectively pre-supposed analyst ROE and payout projections for his proxy group companies. Thus, by using this growth measure, Dr. Booth has assumed the reasonableness of analyst's ROE projections, yet, not the analyst's projections of growth rates by the same analysts." By example, he refers to the table on page 13 of Appendix D of Dr. Booth's evidence where the mean and median ROE projections for the proxy group are close to 10.2 percent but Dr. Booth's use of the simple form of the sustainable growth rate method yields ROEs of 6.83 and 7.02, respectively.[338]

In FEI's view, Dr. Booth's sustainable growth DCF approach guaranteed that future utility growth and resulting DCF value would be understated. FEI considers Dr. Booth's simplified sustainable growth model to be unrealistic as the only source of utility growth is the reinvestment of retained earnings and does not take into account funds generated by utilities through the injection of new equity (shown as the product of "s x v" where "s" represents the growth in shares outstanding and "v" is that portion of the market to book ratio that exceeds one). FEI points out that in the full form of the sustainable growth DCF model, the injection of new equity is accounted for and further, Dr. Booth has admitted he has included adjustments for the impact of external financing in his sustainable growth DCF models in the past.[339]

FEI submits Dr. Booth has suggested "the total impact of including the incremental source of financing would be negligible, assuming (a) that utility's market-to-book value is close to one, and (b) the growth in shares outstanding is very small." FEI points out that the eight US utilities he used to calculate his CAPM estimates and his sustainable growth DCF model have market to book ratios that are significantly higher than one and based on Dr. Booth's logic, would provide a higher than the presented DCF result.[340]

Intervener submissions

With reference to Dr. Booth's use of the sustainable growth model, AMPC/BCOAPO assert FEI only partially responded to the points he made during his cross-examination as to why the "s x v" effect is negligible. Concerning FEI's argument that the "s x v" term should be included, "Dr. Booth explained that in any event utility market-to-book ratios ought to be close to one, as regulation should lead to a market price that is approximately equal to the utility's book value, and the term furthermore contains a 'huge' risk of estimation

[337] Exhibit B-16, Rebuttal Testimony of Mr. Coyne, p. 36.
[338] Exhibit B-16, pp. 35–37.
[339] FEI Final Submission, pp. 89–90; T3:501.
[340] FEI Final Submission, p. 90; T3:625–626.

error." AMPC continue by referring to Dr. Booth's point that when the issuance of capital stock is negligible, the "s x v" is effectively zero and FEI has provided no evidence that it will dilute its capital stock by a non-negligible amount and Dr. Booth described why this was highly unlikely during the oral hearing.[341]

AMPC/BCOAPO assert that Mr. Coyne has relied on constant growth calculations and even though he ultimately claims not to have used them, they play a prominent role in his evidence. It is their position that constant growth DCF models are meaningless and have no place in the comparison, particularly where there are predictions of constant growth that exceed the growth of GDP.[342]

CEC submits the estimates from the constant growth model are likely inaccurate and highly inflated and recommends the Commission disregard or place very little weight on Mr. Coyne's constant growth DCF model and "disregard the comparison and the average that Mr. Coyne provides." It is CEC's position that Dr. Booth's evidence is superior to Mr. Coyne's and Dr. Booth's evidence is better used as a check than as a basis for ROE determination. Specifically, CEC states that Dr. Booth's evidence concerning sustainable growth rates "is reasonable and does not unduly understate the firm's growth model, and is superior to Mr. Coyne's analyst forecasts."[343]

FEI reply submission

FEI considers the evidence contradicts Dr. Booth's assumption that price to book ratios equal one pointing out the market to book ratios of the utilities used in Mr. Coyne's proxy groups averaged well over 2.0 and Dr. Booth's estimates based on sustainable growth rates have understated his DCF outcomes. FEI takes issue with Dr. Booth's view that it is unlikely that FEI "will dilute its capital stock by a non-negligible amount" pointing out FEI does not issue equity and Dr. Booth has "overlooked the fact that the S*V term is derived from the proxy group companies." Thus, based on these proxy groups, FEI asserts the results coming from Dr. Booth's simplified model could be significantly understated.[344]

5.2.4.2 Analyst estimates

The Brattle Group Report states the choice of an appropriate growth rate is the most controversial element of using DCF and note most economists are in agreement that investment analyst's expected growth rates are more representative of investor expectations than historical growth rates. The Brattle Group Report acknowledges some critics claim analyst's earnings growth rates are tainted by a bias towards optimism as there is an observed tendency for analysts to estimate growth rates that are higher than what actually occurs. However, the Brattle Group Report also makes the following statement:

> Analyst forecasts for the utility industry are likely to be more accurate than forecasts for other industries because firms with less variability in their earnings tend to have more accurate forecasts. This suggests analyst forecasts for the utility industry are likely to be more accurate and less prone to potential bias when compared to forecasts of other industries.[345]

[341] AMPC/BCOAPO Final Submission, p. 56; T3:601.
[342] AMPC/BCOAPO Final Submission, p. 58.
[343] CEC Final Submission, pp. 19, 41.
[344] FEI Reply Submission, p. 76.
[345] Exhibit A2-3, Brattle Group Report, p. 29.

Mr. Coyne submits that in the US, several regulatory changes have been implemented to deal with this issue. Specifically, both the US Securities and Exchange Commission and the New York Stock Exchange have taken measures designed to provide fair disclosure and remove the incentive for analysts' bias. In Canada, regulators took similar actions to improve the independence of research and ensure Canadian Securities Analysts practiced professionally. Mr. Coyne also noted the 2013 GCOC Decision rejected suggestions of analyst bias.[346]

One of Dr. Booth's arguments for relying upon unadjusted DCF results was his view that optimism bias exists in analyst's growth forecasts. Dr. Booth has provided evidence in the form of a Globe and Mail article based on a study by a consulting firm, McKinsey, reporting that analysts start out optimistic when making a five-year forecast before "they hone in on the correct number" as they get more information. Dr. Booth also reports that a 2007 study by Easton and Sommers documented the optimism bias at 2.84 percent when analyst's estimates are compared to current earnings realizations.[347]

FEI argues there is no evidence of analyst bias in growth forecasts relying upon the following reasons:

- The Brattle Group Report comments concerning the accuracy of forecasts in the utility industry and Dr. Booth's admission in the 2013 GCOC Decision that optimism bias in the utility industry is less evident than in other sectors in the economy.
- The Battle Group Report noted there is "substantial academic evidence that analyst earnings estimates are superior to other forecasts."
- Mr. Coyne identifies several factors explaining why the substantial academic evidence referred to in the Brattle Group Report is reasonable. Included among these are the facts that equity analysts have no incentive to provide optimistic research reports and are industry experts on the companies they follow as well as the regulatory changes that have been made on both sides of the Canada/US border.
- The Commission has rejected Dr. Booth's assertion that upward bias in growth forecasts requires adjustments to DCF results in each of the last three cost of capital proceedings.

FEI also points out that Mr. Coyne's multi-stage DCF limits the use of analyst growth rates to five years with a transition period following.[348]

Intervener submissions

AMPC/BCOAPO submit the potential for upward bias has inflated FEI's DCF estimates to an amount that would not be consistent with a fair return. They consider it problematic to rely on analyst's growth forecasts due to a well-known optimism bias attached to analyst forecasts. In addition to the evidence brought forward by Dr. Booth, AMPC/BCOAPO states this bias is 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." AMPC/BCOAPO refer to a 2011 Alberta Utility Commission decision expressing concern for the potential for upward bias in analyst's growth estimates as further support for its position.

CEC submits the evidence supporting bias toward over-optimism when estimating earnings should be given significant weight. It is CEC's view that Mr. Coyne's use of analyst's growth rates in his multi-stage DCF model

[346] Exhibit B-1, Appendix B, pp. 55–56.
[347] Exhibit C7-7-2, Appendix D, pp. 14–15.
[348] FEI Final Submission, pp. 86–88.

may have inflated the evidence resulting in an ROE recommendation which is too high and therefore should be viewed with caution and adjusted downward. CEC did not share with the Commission how it reached this conclusion.

CEC holds that Dr. Booth's model is both reasonable and superior to Mr. Coyne's analyst forecasts and does not unduly understate the firm's growth model. CEC recommends the Commission heavily weigh the DCF estimate of Dr. Booth.[349]

FEI reply submission

FEI takes issue with the AMPC/BCOAPO suggestion that TD, Aon and Hewitt and Mercer capital market reports show comparable or lower forecast returns for the whole market than Mr. Coyne's analyst forecasts for low risk utilities. FEI asserts there is no evidence suggesting that a specific utility's earnings growth rates and the multi-stage DCF over a specific period of time should always be lower than market returns as a whole.

FEI does not support the use of pension plan information but states that if it were used, it would show that Mr. Coyne's multi-stage DCF results are close to the pension report's corresponding returns as cited by AMPC/BCOAPO. FEI points to the category within the Fearless Forecast and the Aon Hewitt report called US defensive equity. Mr. Coyne describes these as low-risk companies such as utilities. He outlines how when the arithmetic growth rate and an equity beta of .75 as relied upon in these reports are used, a geometric equivalent ROE of 8.5 percent is achieved. When an additional 50 basis points is added for flotation, he notes this would increase the ROE to 9.0 percent.[350]

AMPC/BCOAPO sur-reply

On May 16, 2016, AMPC/BCOAPO filed a sur-reply, which among other things took issue with FEI arguing the nature of pension forecasting for the first time in its reply submission. After submissions from the parties and a reply from AMPC/BCOAPO, the Commission allowed the sur-reply to remain on the record.

AMPC/BCOAPO submit that while it "recognizes that paragraph 144 (not 143, as FEI states) repeats some of the BCUC 1.40.2 response absent citation, the pension fund argument in FEI's Reply submission (pp. 60-64) remains largely general." AMPC/BCOAPO submit it did not argue that "pension returns" are relevant. It did argue that "published pension plan forecasts of general returns (asset classes like Canadian equities, US equities, etc.) are relevant to the returns potential investors might expect from FEI."[351]

Commission determination

There were three areas the Panel identified as needing to be explored in reaching its determination on the DCF model and its weighting in this proceeding: the choice of DCF approaches, guidance to be taken from expert witness submissions and the weight placed on analyst estimates.

[349] CEC Final Submission, pp. 18, 41.
[350] FEI Reply Submission, pp. 73–74.
[351] AMPC/BCOAPO Sur-Reply, pp. 2–3.

a) Constant growth versus the multi-stage approach to using the DCF model

The primary issue with the use of these two models is whether it is appropriate to rely on a growth forecast in perpetuity as implied by the constant growth model or whether the growth forecast should be staged over a period of time settling into a tempered long-term perpetual grow rate thereafter. Dr. Booth favours the constant growth model but only in the context of the market as a whole stating that this and S&P utility indexes "are more reliable than for individual companies due to significant measurement error attached to forecasting future growth rates." Dr. Booth further notes it is impossible for utilities to grow faster than the GDP forever, thereby explaining a significant drawback to a constant growth DCF model when used in the context of a company or small group of companies. Mr. Coyne has prepared both constant growth and multi-stage DCF models but he relies only on the multi-stage model explaining that in the 2013 GCOC Decision, the Commission favoured a multi-stage approach.

The Panel considers the constant growth DCF model to have limited value when applied against a single company or small group of companies and agrees errors in forecasting will likely result due to the improbability of utilities perpetually growing at a rate faster than GDP. The Panel also agrees that if the constant growth model is to have any application, it is when taken in the context of the market as a whole thereby eliminating some of the issues related to determining a reasonable growth rate for a smaller group. **The Panel therefore finds that no weight can be placed on Mr. Coyne's constant growth DCF results as applied to his proxy groups.** For proxy group DCF estimates, the Panel favours use of the multi-stage DCF approach as it provides a more realistic and reasonable approach to estimating growth over the long-term.

b) Mr. Coyne and Dr. Booth's use of the DCF model

Dr. Booth has provided ranges for the overall equity return in the Canadian market of 8.50 percent and 9.5 percent and 9.0 to 10.0 percent in the US market as a whole. As Dr. Booth provided no definitive estimates for utilities as a group, the Panel infers that Dr. Booth intended these estimates to cover the upper end of his DCF estimate range. The fact that utilities are generally considered to be lower risk than the market as a whole would indicate a ROE estimate for utilities or FEI falling somewhere below these levels. However, this is only conjecture and as a result, the Panel places little weight on Dr. Booth's constant growth whole market DCF estimates for the purpose of determining a fair ROE.

Dr. Booth also introduced a version of the sustainable growth rate DCF approach asserting that a median ROE of 7.02 percent results when applied against his US proxy group of eight utilities. Dr. Booth did not provide evidence as to the level of adoption of this approach in Canada and the US although Mr. Coyne pointed out that FERC has moved away from any reliance on sustainable growth rates, a point the Panel notes was not contested. The Panel observes that Dr. Booth took into account only internally generated funds and neglected to take into account externally generated funds such as the issuance of new equity. This concern was raised by Mr. Coyne and AMPC/BCOAPO responded to this by stating Dr. Booth's explanation is FEI has provided no evidence it will dilute its capital stock by an amount that is non negligible and thus the s x v is effectively zero. While FEI does not issue equity to the public, the Panel notes FEI's equity financing requirements of $594 million related to expected capital expenditures in 2016-2018 (see Table 4.4) will likely require the shareholder to make equity injections to maintain FEI's approved equity structure. In addition, , Dr. Booth's sustainable growth model is applied to his proxy group, not FEI, and therefore whether FEI is to issue new equity is irrelevant given they were not part of the proxy group. The Panel is of the view that the lack of consideration of the potential for proxy

companies to issue equity is important and could have resulted in a different set of outcomes. **Therefore, the Panel finds that no weight can be placed on Dr. Booth's sustainable growth rate model for his US proxy group as it is not based on a more robust and comprehensive version of this model.** Moreover, the Panel remains unpersuaded as to whether it is valid to apply the sustained growth rate model itself. There has been limited evidence in this proceeding on the model, its variations and the level of adoption in other jurisdictions. Given these limitations, the Panel views any results attributed to the use of this model with caution.

The Panel notes that Mr. Coyne, while preparing a constant growth DCF model, did not rely on it in his DCF calculations and therefore disagrees with AMPC that this information played a prominent role in his evidence. Instead, Mr. Coyne has relied upon his multi-staged DCF model results for his Canadian and US proxy groups. When commenting on the Canadian proxy group, Mr. Coyne stated he did not think it was anywhere near as good a comparator as his US sample and explains he uses them "because I find it helpful to use a Canadian sample to see what numbers I would derive, but I use them with caution."[352] The Panel agrees noting that in terms of form and function the companies in the US proxy group are closer than the companies Mr. Coyne has selected in his Canadian proxy group. The Panel has provided its assessment of Mr. Coyne's US proxy group data in Section 5.2.2 where it outlined a number of issues related to comparability with FEI and concluded US proxy data "is an imperfect reflection of the circumstances facing FEI requiring considerable judgement as to the weight to be placed on this data."

Given these concerns, the Panel finds that only limited weight can be placed on the DCF estimates based on either the Canadian or the US proxy groups. By Mr. Coyne's acknowledgement, the US proxy group is more comparable to FEI in terms of form and function when compared to the Canadian proxy group. Moreover, in the view of the Panel, the US proxy group companies operate in a different regulatory environment and likely face a greater level of risk than indicated by Mr. Coyne.

c) Analyst's Estimates

In the 2013 GCOC Decision, the Commission found that there was "reason to be cautious of potential bias in the utility sector." However, based the evidence presented by the experts, it was not convinced an adjustment for analyst bias should be made.[353] The Panel holds a similar view in this proceeding. Dr. Booth has provided evidence that support the existence of optimism bias. However, counter to this, the Brattle Group Report states utility industry estimates are likely to be more accurate than those in other industries. Moreover, as argued by FEI, Dr. Booth acknowledges this in the 2012 GCOC proceeding where he stated "optimism bias is probably more evidence (sic) in growth stocks than it is in value stocks, and it's less evident in utilities than in other areas."[354] **Given these considerations, the Panel finds that caution must be exercised with analyst estimates due to the potential for optimism bias but is not persuaded the evidence supports the need to adjust analyst forecasts related to the utility industry.**

[352] Oral Hearing Transcript Volume 2, p. 422.
[353] 2013 GCOC Decision, p. 71.
[354] 2012 GCOC proceeding, Exhibit B-26, p. 21.

5.2.4.3 Appropriate DCF estimate

Commission determination

As noted above, the Panel found that only limited weight could be given to Dr. Coyne's multi-stage DCF estimates, excluding the financing flexibility adjustment, of 9.32 for the Canadian and 8.39 percent for the US proxy groups but has a higher level of confidence in the US estimates due to them being a closer comparator to FEI on many parameters. However, also noted is the Panel's concern there is a greater level of risk faced by FEI's US comparators due to operating in a different regulatory environment which is not directly comparable to British Columbia. Given these factors, the Panel does not consider direct application of Mr. Coyne's estimates for either market to be appropriate. **Accordingly, with application of appropriate judgement, the Panel accepts a maximum 8.4 percent excluding the financing flexibility adjustment as the DCF estimate for an appropriate ROE.**

5.2.5 Financing flexibility adjustment

In the 2013 GCOC Decision, the Commission accepted an allowance for financial flexibility of 50 bps added to the CAPM and DCF tests in determining the fair ROE.[355] The decision referenced a definition of this allowance for financing flexibility as consisting of: (1) flotation costs comprising financing and market pressure costs arising at the time of the sale of new equity; (2) a margin, or cushion, for unanticipated capital market conditions; and (3) a recognition of the "fairness" principle.[356]

Both Mr. Coyne and Dr. Booth agree that 50 bps is a reasonable financing flexibility adjustment[357] and Mr. Coyne is of the view an adjustment of 50 bps is common regulatory practice in Canada.[358]

FEI submits that 50 bps for financing flexibility is consistent with past precedent and expert evidence, that it is a reasonable financing flexibility adjustment, is common regulatory practice in Canada and addresses the utility's need to raise capital without impairing its financial integrity.[359]

CEC submits 50 bps is reasonable.[360]

Commission determination

The Panel notes there is agreement among the experts and parties to a 50 bps financing flexibility adjustment. This is consistent with the 2013 GCOC Decision and given the agreement of the parties, the Panel accepts an allowance for financial flexibility of 50 bps added to the CAPM and DCF tests in determining the fair ROE.

There was not an extensive examination of this issue in the current proceeding and as a result, no evidence to suggest deviating from using the 50 bps financing flexibility adjustment relied upon in recent hearings. However, with respect to Mr. Coyne's testimony that 50 bps is generally used in Canada, the Panel notes that there was no

[355] 2013 GCOC Decision, p. 80.
[356] 2013 GCOC Decision, p. 79.
[357] Exhibit B-1, Appendix B, p. 60.
[358] Exhibit B-9, BCUC IR 39.1.
[359] FEI Final Submission, pp. 99–100.
[360] CEC Final Submission, p. 14.

evidence comparing Canadian jurisdictions on the record to support this. In addition, the Panel notes the Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. 2006 ROE Decision, the Commission allowed a "pure" flotation allowance of 25 bps for the DCF test and no flotation cost allowance for the CAPM and stated the Commission "will not automatically add a 50 basis point surcharge to whatever return it deems appropriate, but will exercise its judgment each time."[361] The Panel expects the issue to be more closely examined with a jurisdictional review on the application of a financing flexibility adjustment in Canada in FEI's next hearing dealing with ROE and common equity component.

5.2.5.1 FEI's ROE relative to other Canadian utilities

Mr. Coyne's comparison of the Canadian peer group companies' approved equity ratio and ROE in relation to his overall risk ranking is included in Table 5.6:

Table 5.6: Canadian Peer Group Comparative Risk Analysis and Authorized ROE[362]

Operating Company	Risk assessment relative to FEI	Authorized equity ratio	Authorized return on equity
Proposed FortisBC Energy Inc.	**N. A.**	**40.0%**	**9.50%**
Current FortisBC Energy Inc.	**N. A.**	**38.5%**	**8.75%**
ATCO Gas	**Less risky**	**38.0%**	**8.30%**
Enbridge Gas Distribution Inc.	**Less risky**	**36.0%**	**9.30%**
Union Gas	**Less risky**	**36.0%**	**8.93%**
Gaz Métro	**More risky**	**38.5%**	**8.90%**

Panel discussion

Although none of the parties presented arguments on the comparison of FEI's current or proposed ROE to other Canadian utilities and while not determinative of a fair ROE, the Panel considers this step useful for considering the overall reasonableness of the range of estimates presented in the CAPM and DCF estimates. When compared against FEI's current and proposed ROE to the Canadian peer group's ROEs and equity components compiles by Mr. Coyne, the Panel notes the experts' assessment that FEI is more risky than EGDI, Union Gas and ATCO Gas and less risky than Gaz Métro. Given this ranking, one would expect it is appropriate for FEI's ROE to fall somewhere above EGDI, Union Gas and ATCO Gas and below Gaz Métro. Given that ATCO Gas' ROE is less risky than FEI it is reasonable that ATCO Gas' authorized ROE is lower than that of FEI. With consideration of the inclusion of Gaz Métro's preferred shares in its capital structure and its higher allowed ROE, the Panel is satisfied FEI's current ROE is appropriately positioned relative to the riskier Gaz Métro. The Panel notes that Union Gas

[361] Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. Application to Determine the Appropriate Return on Equity and Capital Structure and to Review and Revise the Automatic Adjustment Mechanism (2006 TGI ROE), Decision dated March 2, 2006, pp. 54–55.
[362] Exhibit B-1, Appendix B, p. 101.

and EGDI both have slightly higher authorized ROEs than FEI. However, this is offset by their significantly lower 36 percent equity ratio.

5.3 Appropriate return on equity

Commission determination

The Panel has determined that a return on equity of 8.75 percent meets the Fair Return Standard and is appropriate for FEI, effective January 1, 2016. This represents no change from the 2013 GCOC Decision where the Commission determined the same return on equity.

The Panel notes in the 2013 GCOC Decision, the Commission determined that the most compelling frameworks for assessing the return on equity are the DCF model and the CAPM and placed equal weight on the CAPM and DCF model in determining the allowed ROE.

The experts' DCF models and CAPMs and underlying assumptions have been explored extensively in this proceeding. The Panel notes Mr. Coyne arrives at his recommendation of 9.5 percent ROE based on his detailed analysis, placing equal weight on the estimates produced by his models. On the other hand, Dr. Booth recommends an ROE of 7.5 percent more from an application of his judgment than from any output from his models.

With respect to reliance on the models, the Panel agrees with Mr. Coyne, that the use of the models provides different perspective that helps inform the estimate of ROE but that both the DCF model and CAPM have their own set of inherent limitations. All parties advise the Panel to use its judgment to assess the reasonableness of the results of the models. FEI underlines the importance of using multiple tests to be assured of a reasonable estimate of ROE and AMPC/BCOAPO recommend using the models as a check on each other and applying judgement based on external conditions.

In determining the appropriate weight to place on the models, the Panel recognizes they are imperfect and must consider the totality of the evidence. In Mr. Coyne's approach, both models rely on proxy group information and a selection of proxy companies that are imperfect comparators due to differing business and regulatory environments than FEI. In the view of the Panel, company specific risk is not important in the CAPM. The CAPM depends on a number of subjective decisions including the determination of the risk free rate in the current all-time low interest rate environment. Both experts outline the issues with the CAPM in the current environment. The DCF model is highly sensitive to growth rate estimates and there can be significant variability in analyst estimates and adding to this, there are no strong comparator Canadian companies for use as proxies in the DCF model. As a result of the current global economic environment, the reliability of the models has been called into question more than once in the previous cost of capital hearings, requiring the Panel to exercise its judgement to a greater degree.

Accordingly, in addition to considering its findings on the appropriate ROE indicated by: (1) the CAPM model of approximately 8.5 percent including financing flexibility adjustment; and (2) the DCF model of no more that 8.9 percent including a financing flexibility adjustment, the Panel also considers whether conditions have changed sufficiently since the 2012 GCOC proceeding to warrant an increase or decrease in ROE.

In addition to favouring the application of judgment more heavily than in the previous decision, the Panel does not believe a strict reliance on an equal weighted mechanical calculation of its findings with respect to DCF model and CAPM outputs in this circumstance is appropriate for determining a fair ROE. Given these factors, the Panel has concluded FEI's currently allowed ROE of 8.75 percent, within the context of a 38.5 percent equity capital structure, remains well within the range of current model outputs and is therefore reasonable.

Taking these factors together and weighing them accordingly, the Panel considers there to be insufficient justification for awarding either a higher or lower ROE at this time. The Panel also examined and found there is no compelling evidence to support the need to increase the return on equity given the 38.5 percent common equity component.

As a check, the Panel notes FEI's 8.75 percent approved ROE, given its equity component of 38.5 percent falls into the appropriate range among its Canadian regulated utility comparators. While not determinative, this further supports the Panel's decision to leave FEI's ROE unchanged.

6.0 AUTOMATIC ADJUSTMENT MECHANISM

The issue the Panel must deal with is whether to continue with an AAM as a means of providing annual updates to the benchmark utility's ROE or whether it should be suspended or eliminated entirely.

An AAM based on changes to long-term Canada bond rates was first implemented by the Commission in 1994[363] but in 2009, by Order G-158-09, it was eliminated. In eliminating the AAM in 2009, the Commission stated, "in its present configuration, the AAM will not provide an ROE for TGI for 2010 that meets the Fair Return Standard."[364] In the 2013 GCOC Decision, the AAM was reinstituted on the basis that it "better meets the FRS than giving no consideration to market changes over the period between ROE proceedings." The Commission in this instance addressed some of the concerns with previous mechanisms and established a two variable model taking into account utility bond spreads as well as long-term Canada Bond yields. However, in recognition of the effect of monetary policy on bond rates, the Commission directed any implementation of this mechanism be subject to an actual long-term Canada bond yield of 3.8 percent being met or exceeded. Therefore, the AAM formula would not apply unless the long Canada bond yield was below 3.8 percent.[365] The Canada long-term bond yield has remained below the 3.8 percent threshold since 2013 and therefore, the AAM was not applied to FEI's ROE during the period since the 2013 GCOC Decision.[366]

FEI's position is that a formula cannot capture all of the changes affecting a utility's cost of capital and will yield a return that does not meet the Fair Return Standard. FEI submits the Commission should suspend use of the AAM formula in this jurisdiction and review the cost of capital in a three to five-year time frame. A periodic review is the best way to ensure the ROE is reflective of the true cost of equity and meets the Fair Return Standard. However, if the Commission was to continue to believe an AAM to be an appropriate approach, FEI

[363] 2013 GCOC Decision, p. 81.
[364] Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc., and Terasen Gas (Whistler) Inc., and Return on Equity and Capital Structure (2009 TGI ROE), Decision dated December 16, 2009.
[365] Ibid., pp. 90–91.
[366] Exhibit B-1, p. 32.

recommends a two-factor model capturing corporate credit conditions as well as the prevailing risk free bond rates as approved in the 2013 GCOC Decision.[367]

FEI notes that an AAM has been in place since 2013. Over this period, there has not been an ROE adjustment and over this period, Régie Quebec has suspended application of its formula. Further, FEI points out that Dr. Booth opines he doesn't expect it will be triggered in the next three years.[368]

Mr. Coyne in his Direct Testimony holds views that are consistent with those of FEI.[369] He also notes in his rebuttal testimony that using a formulaic AAM introduces the potential for error in setting ROE as there is risk that bond yields and credit spreads, the formulaic coefficients, do not effectively model utility returns. It is Mr. Coyne's opinion that use of an AAM formula is not a substitute for proceedings where cost of capital evidence is presented and vetted by the stakeholders and it should be only relied upon to make interim changes to the cost of capital between rate proceedings.[370]

Intervener submissions

AMPC/BCOAPO support continuation of the use of the AAM arguing there was substantial work done to arrive at this formula both in the 2012 GCOC proceeding and to a lesser extent this hearing and thereby reinforcing the benefit of an AAM for stakeholders. In their view, the efficiency benefits of the 2013 GCOC Decision approved AAM formula remains relevant and the fact the long Canada bond yield has yet to meet the 3.8 percent long Canada bond trigger does not invalidate its usefulness.[371]

Dr. Booth states that adjustment models allow the ROE to be kept current without a need for extensive hearings but notes that keying a "fair ROE off the long Canada bond forecast currently causes significant problems due to distortions in that forecast."[372] His current judgement is the fair ROE has not decreased to the same extend as has the long Canada bond yield pointing out they are set by "global policy makers" or central banks rather than investors. Consequently, he judges adjusting the ROE by 50 to 75 percent of the decrease in long Canada bond yields, as recommended in the 2012 GCOC proceeding, underestimates the fair ROE.

Dr. Booth still regards 3.8 percent as "a minimum long Canada bond yield consistent with investors trading off risk and return, since this equates to a negligible real after tax rate of return for a taxable investor." Further, he states that he is not as optimistic as RBC and other forecasters' expectations that the 3.8 percent rate will be reached in 2018, as it will depend on when the Federal Reserve Board begins to sell its stockpile of government debt. Dr. Booth states he is happy to set a fixed rate for the period ending in 2018 noting he does not think in the next three years the one-year ahead forecast long Canada bond yields will reach 3.80 percent.[373]

[367] Exhibit B-1, pp. 32–33; FEI Final Submission, p. 101.
[368] FEI Final Submission, pp. 101–102.
[369] Exhibit B-1, Appendix B, p. 103.
[370] Exhibit B-16, p. 10.
[371] AMPC/BCOAPO Final Submission, p. 69.
[372] Exhibit C7-7-1, p. 63.
[373] Exhibit C7-7-1, p. 63.

CEC recommends the Commission continue with the existing AAM pointing out that the Commission is likely to review the cost of capital regardless of whether an AAM is in place or not. CEC submits that the AAM can provide comfort that the ROE will be responsive to current situations.[374]

Commission determination

The Panel is not persuaded that continuing to rely on an AAM to update FEI's ROE on an annual basis is appropriate or will necessarily meet the Fair Return Standard. Therefore, the Panel suspends further use of an AAM as a mechanism to adjust FEI's ROE on an annual basis.

The Panel continues to hold the view that an effective AAM can be a useful tool in providing an updating mechanism for ROE thereby eliminating some of the need for lengthy and expensive formal reviews. However, the Panel acknowledges that economic conditions are uncertain and accept Dr. Booth's explanation of long Canada bond yields being less affected by investors and more by central banks. Therefore, the Panel does not believe that continuing with an AAM at this time will necessarily result in changes reflecting a fair ROE or meeting the Fair Return Standard.

Over the past three years, bond yields have not reached the 3.80 percent trigger point specified in the 2013 GCOC Decision nor is there conclusive evidence in this proceeding this target will be reached over the next few years. The Panel acknowledges that RBC and other rate forecasters have predicted that the trigger point will be exceeded by 2018. However, there were similar predictions at the time of the 2012 GCOC proceeding which did not occur and in this instance, Dr. Booth has expressed doubt as to the 3.80 percent trigger point being reached by the end of 2018.

In the Panel's view, there is limited benefit to continuing to apply the AAM for the next period of time and there may be potentially undesirable consequences with its continued use. In addition, there has been little examination of the formula itself and no further evidence to suggest a 3.80 percent trigger point is as valid today as it was considered to be in the 2013 GCOC Decision. Therefore, the Panel is persuaded that a suspension of the AAM is warranted. However, once there is a return to more certain economic conditions with more normal interest rates, the Panel believes the re-implementation of an AAM is worthy of further consideration.

7.0 FEI AS THE BENCKMARK UTILITY

In the 2013 GCOC Decision, the Commission found that FEI was the appropriate benchmark utility and stated:

> FEI is well established, of sufficient size and has a diverse customer and asset base. In addition, FEI is well understood as a utility by all the participants as it has traditionally been used as the benchmark utility in British Columbia. This and the fact that there is a substantial body of FEI related evidence already on the record in this proceeding makes FEI a reasonable candidate for the benchmark utility. Therefore, notwithstanding the various positions of the participants as to whether FEI can be described as a pure play gas distribution utility, the Commission Panel agrees with the participants and accepts FEI, in the present time frame, as the most appropriate choice for the benchmark utility.[375]

[374] CEC Final Submission, p. 117.
[375] Order G-148-12, Reasons for Decision, p. 4.

FEI states the Commission should continue to treat FEI as the benchmark utility and based on its current characteristics there is no compelling reason to change.[376]

CEC agrees that FEI should continue as the benchmark utility and recommends that the Commission maintain this status.[377]

Commission determination

No party in this proceeding disagreed with FEI continuing to be the benchmark utility. Accordingly, the Panel directs **the common equity component and ROE approved in this decision will serve as the benchmark cost of capital for any other utility in British Columbia that uses the benchmark utility to set rates.**

[376] Exhibit B-1, pp. 34–35.
[377] CEC Final Submission, p. 118.

DATED at the City of Vancouver, in the Province of British Columbia, this 10th day of August 2016.

Original Signed By

K. A. KEILTY
PANEL CHAIR / COMMISSIONER

Original Signed By

D. A. COTE
COMMISSIONER

Original Signed By

N. E. MACMURCHY
COMMISSIONER

British Columbia Utilities Commission

Sixth floor, 900 Howe Street
Vancouver, BC Canada V6Z 2N3
TEL: (604) 660-4700
BC Toll Free: 1-800-663-1385
FAX: (604) 660-1102

ORDER NUMBER
G-129-16

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

and

FortisBC Energy Inc.
Application for its Common Equity Component and Return on Equity for 2016

BEFORE:
K. A. Keilty, Panel Chair/Commissioner
D. A. Cote, Commissioner
N. E. MacMurchy, Commissioner

on August 10, 2016

ORDER

WHEREAS:

A. On October 2, 2015, FortisBC Energy Inc. (FEI) filed an application for a review of its common equity component and return on equity for 2016 (Application) pursuant to the British Columbia Utilities Commission (Commission) decision in the Generic Cost of Capital Stage 1 proceeding;

B. In its Application, FEI submits that the amalgamated FEI (the amalgamation of three affiliated entities: the former FortisBC Energy Inc., FortisBC Energy [Whistler] Inc. and FortisBC Energy [Vancouver Island] Inc.) continues to be the logical choice to serve as the benchmark utility for the purpose of determining the cost of capital for other utilities;

C. By Order G-177-15 dated November 9, 2015, the Commission established a proceeding to review the Application. The regulatory review was by way of a limited scope oral hearing and included two rounds of information requests (IRs) to FEI and one round of IRs on intervener evidence;

D. Six parties registered as interveners in this proceeding. Among those registered, the most active were the Commercial Energy Consumers of British Columbia, the British Columbia Old Age Pensioners' Association *et al*. and the Association of Major Power Customers of BC (AMPC): collectively, the "Utility Customers";

E. On December 7, 2015, the Commission issued Order G-193-15 in the FEI Annual Review of 2016 Delivery Rates Decision setting interim delivery rates for all non-bypass customers effective January 1, 2016 and approving FEI's existing capital structure and return on equity on an interim basis effective January 1, 2016, pending the outcome of this cost of capital proceeding;

F. On December 15, 2015, the Commission issued Order G-204-15 and ordered, among other things, that FEI's existing common equity component and return on equity would remain the benchmark on an interim basis, effective January 1, 2016;

G. On January 26, 2016, the Utility Customers filed intervener evidence of their expert witness, Dr. Laurence Booth;

H. The oral hearing took place from March 9, 2016 to March 11, 2016;

I. The argument phase of the proceeding took place from April 3, 2016 to April 28, 2016. On May 5, 2016, AMPC sought leave to file two narrow sur-reply submissions;

J. By Order G-68-16 dated May 13, 2016, the Commission, after considering comments from FEI and other interveners, allowed the sur-reply to remain on record; and

K. The Commission has reviewed and considered all of the evidence and submissions on record for the proceeding.

NOW THEREFORE pursuant to sections 59 to 61 of the *Utilities Commission Act*, the British Columbia Utilities Commission orders as follows:

1. FortisBC Energy Inc.'s common equity component is set at 38.5 percent, effective January 1, 2016.

2. FortisBC Energy Inc.'s return on equity is set at 8.75 percent, effective January 1, 2016.

3. The use of the Automatic Adjustment Mechanism formula is suspended indefinitely.

4. The common equity component and return on equity approved for FortisBC Energy Inc. in the decision issued concurrently with this order will serve as the benchmark cost of capital for any other utility in British Columbia that uses the benchmark utility to set rates.

5. The common equity component and return on equity will remain in effect until otherwise determined by the Commission.

6. FortisBC Energy Inc.'s interim rates set by Order G-193-15 are approved as permanent, effective January 1, 2016. FortisBC Energy Inc. is to file, within 15 working days from the date of this order, updated final rate schedules in accordance with Directives 1 and 2 of this order.

DATED at the City of Vancouver, in the Province of British Columbia, this 10th day of August 2016.

BY ORDER

Original Signed By:

K. A. Keilty
Commissioner

FortisBC Energy Inc.
Application for its Common Equity Component and Return on Equity for 2016

LIST OF ACRONYMS

2006 TGI ROE Decision	Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. Application to Determine the Appropriate Return on Equity and Capital Structure and to Review and Revise the Automatic Adjustment Mechanism, Decision dated March 2, 2006
2009 TGI ROE Decision	Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc. and Terasen Gas (Whistler) Inc. Return on Equity and Capital Structure, Decision dated December 16, 2009
AAM	Automatic Adjustment Mechanism
AMPC	Association of Major Power Customers of BC
Application	FortisBC Energy Inc. Application for its Common Equity Component and Return on Equity for 2016
Atmos	Atmos Energy Corporation
BC Hydro	British Columbia Hydro and Power Authority
BCMEU	British Columbia Municipal Electrical Utilities
BCOAPO	British Columbia Old Age Pensioners' Organization *et al.*
BCUC, or Commission	British Columbia Utilities Commission
bps	basis points
CGA	Canadian Gas Association
CAPM	capital asset pricing model
CCAPM	conditional capital asset pricing model
CEC	Commercial Energy Consumers Association of British Columbia
Consensus Economics	Consensus Economics Inc.
COV	City of Vancouver
Creative Energy	Creative Energy Vancouver Platforms Inc.
DCF	discounted cash flow

EGDI	Enbridge Gas Distribution Inc.
FEI	FortisBC Energy Inc.
FERC	Federal Energy Regulatory Commission
FEVI	FortisBC Energy (Vancouver Island) Inc.
FEW	FortisBC Energy (Whistler) Inc.
FortisBC	FortisBC Utilities
GCOC	Generic Cost of Capital
GHG	greenhouse gas
ICG	Industrial Customers Group
ICR	interest coverage ratio
IR	Information Request(s)
LNG	liquefied natural gas
MRP	market risk premium
Moody's	Moody's Investor Services
NGTL	Nova Gas Transmission Ltd.
OEB	Ontario Energy Board
PBR	Performance Based Rate-making
PMM	purchase money mortgage(s)
RBC	Royal Bank of Canada
ROE	return on equity
UCA	*Utilities Commission Act*
Utility Customers	Commercial Energy Consumers Association of British Columbia, British Columbia Old Age Pensioners' Organization *et al.* and Association of Major Power Customers of BC

LIST OF APPEARANCES

P. Miller	Commission Counsel
L. Bussoli	Commission Counsel
M. Ghikas	Counsel for FortisBC Energy Inc.
T. Ahmed	Counsel for FortisBC Energy Inc.
R. B. Wallace, Q.C.	Counsel for Association of Major Power Customers of B.C.
C. Weafer	Counsel for Commercial Energy Consumers of British Columbia

---

E. Cheng	Commission Staff
L. Cheung	Commission Staff
S. Allen	Consulting Staff
Allwest Reporting Ltd.	Court Reporters

LIST OF PANELS

FORTISBC ENERGY INC.

Expert Opinion on a Benchmark Fair Return

James M. Coyne	Concentric Advisors

ASSOCIATION OF MAJOR POWER CUSTOMERS OF BC, COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA AND BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION *ET AL.*, COLLECTIVELY THE UTILITY CUSTOMERS

Laurence D. Booth, DBA	University of Toronto

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

and

FortisBC Energy Inc.
Application for Common Equity Component
and Return on Equity for2016

EXHIBIT LIST

Exhibit No.	Description
COMMISSION DOCUMENTS	
A-1	Letter dated October 15, 2015 - Appointing the Commission Panel for the review of the FortisBC Energy Inc. Application for Common Equity Component and Return on Equity for2016
A-2	Letter dated November 9, 2015 – Commission Order G-177-15 establishing the Regulatory Timetable
A-3	Letter dated November 25, 2015 – Commission Information Request No. 1 to FEI
A-4	**CONFIDENTIAL** Letter dated November 25, 2015 – Confidential Commission Information Request No. 1 to FEI
A-5	Letter dated November 30, 2015 – Request for Submissions on Interim Order
A-6	Letter dated December 4, 2015 – Commission amending Regulatory Timetable
A-7	Letter dated December 15, 2015 – Commission Order G-204-15 with reasons for decision on interim rates
A-8	Letter dated January 12, 2016 – Commission Information Request No. 2 to FEI
A-9	Letter dated January 15, 2016 – BCUC Rules of Practice and Procedure to parties
A-10	Letter dated February 9, 2016 – Commission Intervener Evidence Information Request No. 1 to Utility Customers
A-11	Letter dated February 16, 2016 – Commission cancelling Procedural Conference and Request for written submissions
A-12	Letter dated February 25, 2016 – Commission clarifying Scope of Oral Hearing in response to FEI (Exhibit B-15)

A-13	Letter dated March 3, 2016 – Oral Hearing information
A-14	Letter dated May 6, 2016 – Request for Submissions on AMPC's request to file sur-reply submissions
A-15	Letter dated May 13, 2016 – Commission Order G-68-16 with reasons for decision on AMPC's request for leave to file sur-reply

COMMISSION STAFF DOCUMENTS

A2-1	Letter dated November 25, 2015 – Commission staff filing FortisBC Energy Inc. – Price Risk Management Workshop Summary Report (October 27, 2015)
A2-2	Letter dated January 12, 2016 – Commission staff filing Morningstar Australasia Pty Ltd. – Morningstar Stock Sector Structure (2011)
A2-3	Letter dated January 13, 2016 – Commission staff filing The Brattle Group – Survey of Cost of Capital Practices in Canada (May 31, 2012)
A2-4	Submitted at Oral Hearing March 10, 2016 - NEW JERSEY RESOURCES, INVESTOR FACT SHEET, DATED NOVEMBER 13, 2015
A2-5	Submitted at Oral Hearing March 10, 2016 - THREE-PAGE EXCERPT FROM STATE OF NEW JERSEY BOARD OF PUBLIC UTILITIES DECISION, "EXHIBIT P-1"
A2-6	Submitted at Oral Hearing March 10, 2016 - TWO-PAGE EXCERPT FROM STATE OF NEW JERSEY BOARD OF PUBLIC UTILITIES DECISION, RE: EVIDENCE OF PAUL R. MOUL
A2-7	Submitted at Oral Hearing March 10, 2016 - EXCERPTS FROM ATMOS ENERGY CORPORATION 2014 SUMMARY ANNUAL REPORT, "INVESTING FOR SAFETY"
A2-8	Submitted at Oral Hearing March 10, 2016 - DALLAS MORNING NEWS ARTICLE DATED AUGUST 19, 2013
A2-9	Submitted at Oral Hearing March 10, 2016 - EXCERPT FROM FORTISBC WEBSITE, "SWITCH TO NATURAL GAS AND SAVE"
A2-10	Submitted at Oral Hearing March 10, 2016 - EXCERPTS FROM WRITTEN EVIDENCE OF JAMES H. VANDER WEIDE

APPLICANT DOCUMENTS

B-1	**FORTISBC ENERGY INC. (FEI)** Letter Dated October 2, 2015 - Application for Common Equity Component and Return on Equity for2016
B-2	Letter dated December 4, 2015 - FEI Submission regarding Interim Order Exhibit A-5
B-3	Letter dated December 9, 2015 – FEI Reply Submission regarding Interim Order
B-4	Letter dated December 18, 2015 – FEI Response to CEC IR No. 1
B-5	Letter dated December 18, 2015 – FEI Response to BCOAPO IR No. 1
B-6	Letter dated December 18, 2015 – FEI Non-Confidential Response to BCUC Confidential IR No. 1
B-7	Letter dated December 18, 2015 – FEI Response to AMPC IR No. 1
B-8	Letter dated December 18, 2015 – FEI Response to AMPC Concentric IR No. 1
B-9	Letter dated December 18, 2015 – FEI Response to BCUC IR No. 1
B-10	Letter dated January 22, 2016 – FEI Response to BCUC IR No. 2
B-11	Letter dated January 22, 2016 – FEI Response to ICG IR No. 2
B-12	Letter dated January 22, 2016 – FEI Response to CEC IR No. 2
B-12-1	**CONFIDENTIAL** – Letter dated January 22, 2016 – FEI Confidential response to CEC IR-2_48.3.3
B-13	Letter dated February 9, 2015 – FEI Information Request on Intervener Evidence to AMPC
B-14	Letter dated February 18, 2015 – FEI Submission on Exhibit A-11 and Request for Clarification
B-15	Letter dated February 22, 2015 – FEI Reply Submission on Scope of Oral Evidence
B-16	Letter dated February 29, 2015 – FEI Submitting Rebuttal Evidence of FEI and Mr. Coyne
B-17	Letter dated March 4, 2016 - FEI Submitting Witness Panel Direct Testimony

B-18	Submitted at Oral Hearing March 9, 2016 - BAR GRAPH ENTITLED "FIGURE 1: RECOMMENDATION VS. ALLOWED FOR Canadian DISTRIBUTORS"
B-19	Submitted at Oral Hearing March 10, 2016 - CHAPTER 5 FROM THE IBBOTSON VALUATION HANDBOOK
B-20	Submitted at Oral Hearing March 10, 2016 - UNDERTAKING NO. 1, RE: TRANSCRIPT VOLUME 1, PAGE 141, LINE 21 TO PAGE 142, LINE 18
B-21	Submitted at Oral Hearing March 10, 2016 - UNDERTAKING NO. 2, RE: TRANSCRIPT VOLUME 1, PAGE 120, LINE 4 TO PAGE 121, LINE 20
B-22	Submitted at Oral Hearing March 10, 2016 - UNDERTAKING NO. 3, RE: TRANSCRIPT VOLUME 1, PAGE 65, LINES 18 TO 20
B-23	Submitted at Oral Hearing March 10, 2016 - UNDERTAKING NO. 4, RE: TRANSCRIPT VOLUME 1, PAGE 144, LINES 7 TO 17
B-24	Submitted at Oral Hearing March 11, 2016 - UNDERTAKING NO. 5, RE: TRANSCRIPT VOLUME 1, PAGE 144, LINE 23 TO PAGE 145, LINE 6
B-25	Submitted at Oral Hearing March 11, 2016 - UNDERTAKING NO. 6, RE: TRANSCRIPT VOLUME 1, PAGE 96, LINE 16 TO PAGE 97, LINE 4
B-26	Submitted at Oral Hearing March 11, 2016 - "DOCUMENTS FOR FEI CROSS-EXAMINATION OF DR. BOOTH"
B-26-1	Letter dated March 17, 2016 - FEI Submitting Revised Undertaking No.6
B-27	Submitted at Oral Hearing March 11, 2016 - MR. COYNE'S CO-AUTHORED EVIDENCE IN FRONT OF THE RÉGIE
B-28	Submitted at Oral Hearing March 11, 2016 - LIST OF COMPANIES WITH A TICKER AND AN M/B ON IT
B-29	Submitted at Oral Hearing March 11, 2016 - UNDERTAKING NO. 7, RE: TRANSCRIPT VOLUME 1, PAGE 135, LINE 3 TO PAGE 137, LINE 22
B-30	Submitted at Oral Hearing March 11, 2016 - UNDERTAKING NO. 8, RE: TRANSCRIPT VOLUME 2, PAGE 460, LINE 25 TO PAGE 461, LINE 9
B-31	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 9

B-32	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 10
B-33	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 11
B-34	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 12
B-35	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 13
B-36	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 14
B-37	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 15
B-38	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 16
B-39	Letter dated March 17, 2016 - FEI Submitting Undertaking No. 17

INTERVENER DOCUMENTS

C1-1	**COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)** Letter Dated November 10, 2015 – Request for Intervener Status by Christopher Weafer
C1-2	Letter Dated November 30, 2015 – CEC submitting IR No. 1
C1-3	Letter dated December 4, 2015 - CEC Submission regarding Interim Order Exhibit A-5
C1-4	Letter dated January 12, 2016 – CEC submitting IR No. 2 to FEI
C1-5	Letter dated February 19, 2015 – CEC Submission on Scope of Oral Evidence
C2-1	**UNION GAS LIMITED (UNION GAS)** Letter Dated November 16, 2015 – Request change to Interested Party from Intervener Status by Patrick McMahon - changed to Interested Party see D-1
C3-1	**BRITISH COLUMBIA MUNICIPAL ELECTRICAL UTILITIES (BCMEU)** Letter Dated November 20, 2015 – Request for Intervener Status by Marg Craig and Alex Love
C3-2	Letter dated December 4, 2015 - BCMEU Submission regarding Interim Order Exhibit A-5

C4-1	**BRITISH COLUMBIA HYDRO AND POWER AUTHORITY (BC HYDRO)** Letter Dated November 20, 2015 – Request for Intervener Status by Tom Loski
C5-1	**BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION, ACTIVE SUPPORT AGAINST POVERTY, DISABILITY ALLIANCE BC, COUNCIL OF SENIOR CITIZENS' ORGANIZATIONS OF BC, AND THE TENANT RESOURCE AND ADVISORY CENTRE (BCOAPO)** Letter Dated November 23, 2015 – Request for Intervener Status by Tannis Braithwaite, Lobat Sadrehashemi and James Wightman
C5-2	Letter Dated November 30, 2015 – BCOAPO submitting IR No. 1
C5-3	Letter dated December 4, 2015 - BCOAPO Submission regarding Interim Order Exhibit A-5
C5-4	Letter dated January 12, 2016 – BCOAPO submitting Comments regarding IR No. 2
C5-5	Letter dated February 19, 2015 – BCOAPO Submission on Scope of Oral Evidence
C6-1	**INDUSTRIAL CUSTOMERS GROUP (ICG)** Letter Dated November 23, 2015 – Request for Intervener Status by Brian Merwin and Robert Hobbs
C6-2	Letter dated December 4, 2015 - ICG Submission regarding Interim Order Exhibit A-5
C6-3	Letter dated January 12, 2016 – ICG submitting IR No. 2 to FEI
C7-1	**ASSOCIATION OF MAJOR POWER CUSTOMERS OF BC (AMPC)** Letter Dated November 23, 2015 – Request for Intervener Status by Matthew Keen, Brian Wallace, and Richard Stout
C7-2	Letter Dated November 30, 2015 – AMPC submitting IR No. 1 to FEI
C7-3	Letter Dated November 30, 2015 – AMPC submitting IR No. 1 to Mr. Coyne (FEI)
C7-4	Letter Dated December 4, 2015 – AMPC Submission on interim order
C7-5	Letter Dated December 9, 2015 –AMPC Comments regarding Reply Submission on Interim Order
C7-6	Letter dated January 12, 2016 – AMPC submitting comments regarding IR No. 2
C7-7	Letter dated January 26, 2016 – AMPC submitting Evidence of Dr. Booth
C7-7-1	Letter dated February 3, 2016 – AMPC submitting Correction to Dr. Booth Evidence
C7-7-2	Letter dated March 4, 2016 – AMPC Submitting Clean Copy of Dr. Booth's Evidence
C7-8	Letter dated February 18, 2016 – AMPC submitting Dr. Booth Information Responses to FEI IR No. 1
C7-9	Letter dated February 18, 2016 – AMPC submitting Dr. Booth Information Responses to BCUC IR No. 1
C7-10	Letter dated February 19, 2015 – AMPC Submission on Scope of Oral Evidence

C7-11	Letter dated March 9, 2016 – AMPC submitting Booth Opening Statement
C7-12	Submitted at Oral Hearing March 9, 2016 - AMPC BOOK OF DOCUMENTS
C7-13	Submitted at Oral Hearing March 10, 2016 - FEI 2016 ROE AMPC WITNESS AID

INTERESTED PARTY DOCUMENTS

D-1	**UNION GAS LIMITED (UNION GAS)** Letter Dated November 16, 2015 – Request change to Interested Party from Intervener Status by Patrick McMahon
D-2	**CORIX MULTI-UTILITY SERVICES INC. (CORIX)** Letter Dated November 18, 2015 – Request for Interested Party Status by Ian Wigington
D-2-1	Letter Dated December 4, 2015 – Corix Submission on interim order
D-3	**PACIFIC NORTHERN GAS LTD. (PNG)** Letter Dated November 23, 2015 – Request for Interested Party Status by Janet Kennedy, Verlon Otto and Anwar Chaudry
D-3-1	**PACIFIC NORTHERN GAS LTD.** Letter dated December 3, 2015 - Submission regarding Interim Order Exhibit A-5
D-4	**CREATIVE ENERGY (CE)** Letter Dated November 23, 2015 – Request for Interested Party Status by Michelle McLarty
D-5	**SENTINEL ENERGY MANAGEMENT INC. (SENTINEL)** Letter Dated December 7, 2015 – Request for Late Interested Party Status by Jim Langley

LETTERS OF COMMENT

E-1	**RIVER DISTRICT ENERGY** Letter dated December 1, 2015 - Submission regarding Interim Order Exhibit A-5
E-2	**FORTISBC ALTERNATIVE ENERGY SERVICES INC. (FAES)** Letter dated December 3, 2015 - Submission regarding Interim Order Exhibit A-5
E-3	**FORTISBC INC. (FBC)** Letter dated December 3, 2015 - Submission regarding Interim Order Exhibit A-5
E-3-1	Letter Dated December 9, 2015 – FBC Reply Submission regarding Interim Order