

September 24, 2012

BC Utility Customers – AMPC/BCPSO/CEC
c/o Bull, Housser & Tupper LLP
3000 Royal Centre, P.O. Box 11130
1055 W. Georgia Street,
Vancouver, BC V6E 3R3

Attention: Mr. Brian Wallace

Dear Mr. Wallace:

**Re: Generic Cost of Capital Proceeding
FortisBC Utilities (the “FBCU”)¹
Response to the British Columbia Utility Customers² (the “BC Utility
Customers”) Information Request (“IR”) No. 1 on the Evidence of Ms. Kathleen
McShane**

On August 3, 2012, the FortisBC Utilities filed its Written Evidence in the Generic Cost of Capital proceeding as referenced above. In accordance with the British Columbia Utilities Commission Order No. G-84-12 setting out the Amended Preliminary Regulatory Timetable, the FBCU respectfully submit the attached response to the BC Utility Customers IR No. 1 on the Evidence of Ms. Kathleen McShane.

If there are any questions regarding the attached, please contact the undersigned.

Yours very truly,

on behalf of the FORTISBC UTILITIES

Original signed:

Diane Roy

Attachment

cc (e-mail only): Commission Secretary
Registered Parties

¹ comprised of FortisBC Inc., FortisBC Energy Inc., FortisBC Energy (Vancouver Island) Inc., and FortisBC Energy (Whistler) Inc.

² including the Association of Major Power Consumers of BC (“AMPC”), British Columbia Public Interest Advocacy Centre on behalf of the British Columbia Pensioners’ and Seniors’ Organization et al (“BCPSO”) and the Commercial Energy Consumers Association of British Columbia (“CEC”).



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1. Topic: Fair Return standard, page 2

- 1.1 Please indicate where the opportunity cost criteria or any of the legal requirement such as Mr. Justice Lamont's definition of a fair return require that the fair ROE be compared to the accounting returns of other institutions where the invested capital of the utility cannot be invested without purchasing the investment at market prices?

Response:

Neither the opportunity cost criteria nor the legal precedents require that any particular methodology be used to set the fair return. The basis for the comparable earnings test, which uses book, or accounting returns, in the estimation of a fair return has its genesis in the concept of opportunity cost, as discussed at page 113 of Ms. McShane's evidence, supported by legal precedent as expressed in *Federal Power Commission v. Hope Natural Gas 320 U.S. 591 (1944)*. Specifically, *Hope* states:

"By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital."

Please refer to the responses to BC Util Cust-FBCU IRs 1.1.3 and 1.1.4.

- 1.2 Would Ms. McShane also state that the comparability of US returns also requires that capital market conditions in the US and Canada be the same?

Response:

No. Capital market conditions will never be identical between two countries. What is required is for the cost of capital environment to be reasonably similar between the countries to rely on estimates of the cost of equity from one market for applicability to another without adjustment. The cost of capital environment, as evidenced by both government bond and corporate bond yields, as well as the experienced volatility in the two markets is sufficiently similar to rely on cost of equity estimates for U.S. utilities applied to Canadian utilities without adjustment.



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- 1.3 Would Ms. McShane agree that where the regulator has explicitly set the capital structure to offset business risk differences then there is no link to the fair ROE, that is, the utilities can get the same ROE despite different financial risk as in the policy adopted by the AUC.

Response:

No. The fact that the regulator needs to set the common equity ratios for individual utilities at a particular level to reflect their different degrees of business risk so that the same ROE applies to all underscores the connection between capital structure and fair ROE.



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2. Topic: Cost of Capital Trends and testimony highlights

- 2.1 Would Ms. McShane agree that contrary to the implications of the statement on page 3 that the Governor of the Bank of Canada recently stated that the Canadian financial system is "firing on all cylinders." Would she state that this applied in 2009?

Response:

Ms. McShane agrees that the Governor of the Bank of Canada made this statement. His statement is not contrary to the implications of the referenced statement on page 3 to Ms. McShane's testimony. That statement is a summary of the discussion at lines 471 to 734, which was with respect to Bank of Canada's assessment of the global financial system, from which Canada is not isolated. In that context, Mr. Carney's full statement included the proviso, "That said, the world's a very dangerous place at the moment." The Canadian financial system was not "firing on all cylinders" as of the end of the oral portion of the 2009 Proceeding, but it had improved demonstrably since the peak of the financial crisis.

- 2.2 Rather than attribute the recent increase in spreads to increased "risk aversion" would Ms. McShane agree that Government bond markets around the world have been affected by US and European monetary policy, where the explicit objective has been to lower yields on government bonds. If not can she please give her understanding of the objectives of "Operation Twist" in the US.

Response:

Ms. McShane states at page 17 lines 454 to 457 that the reduction in long-term Government of Canada bond yields as at the end of June 2012 relative to the end of the oral portion of the 2009 Application is a result of several factors acting together. One of those factors is investor risk aversion/flight to safety. The other factors listed are weak global economic conditions, central bank decisions to keep short-term interest rates low, and a shrinking pool of risk-free assets. As a result, the slight increase in spreads in June 2012 relative to the end of the oral portion of the 2009 Application referenced at page 17, lines 463-464 can be partially attributed to increased risk aversion, causing investors to flee to government issued securities in countries viewed as safe havens.



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While the reference to central bank decisions to keep short-term interest rates low was specific to the Bank of Canada, monetary policy actions in the US such as Operation Twist, designed to keep short-term rates low while bringing down long-term rates, have impacted the global financial system. As stated in the June 2012 Bank of Canada *Financial System Review* (page 29):

"In most advanced economies, the current low level of interest rates partly reflects the monetary policy response to protracted economic weakness in the wake of the financial crisis. Indeed, in recent months, a number of central banks, including the U.S. Federal Reserve, the Bank of England and the Bank of Japan, have reinforced their accommodative monetary stance, including through exceptional operations designed to bring down long-term yields.

This environment creates incentives that may lead to significant vulnerabilities. It puts pressure on the balance sheets of institutional investors that hold long-duration liabilities, such as life insurance companies and defined-benefit pension plans. It also increases the incentive for investors to search for higher returns, including by taking on duration mismatches and by investing in asset classes or strategies for which they may not fully appreciate all of the associated risks. These two dimensions of risk are related, since the drive for yield is more intense for institutions facing balance-sheet pressures."

- 2.3 Please indicate any time in the last 60 years when Canadian utilities such as EGDI have been able to issue 40 year debt at under a 5% yield.

Response:

Ms. McShane is not aware of any other time that has been the case. Please also refer to the response to BCUC IR 1.10.1.

- 2.4 Please provide the level of the TSX at the time Ms. McShane filed her testimony in 2009 to compare like with like.



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Response:

The closing price of the TSX Composite at the end of May 2009 was 10,370, compared to approximately 11,395 in September 2009 (oral portion of the 2009 ROE proceeding).

- 2.5 Please confirm the current level of the Vix is under 14% and compare that with the time Ms. McShane filed her testimony in 2009 and indicate whether volatility is unchanged from 2009

Response:

It is not confirmed. The S&P/TSX 60 VIX Index closed at a level of 17.7 on September 11, 2012. The last date on which the VIX closed at under 14 was on March 26, 2012. In May of 2009, the VIX had not yet replaced the MVX, so comparisons between the 2012 VIX values and 2009 MVX values are not strictly comparable. On May 29, 2009 the MVX closed at 29.2; by the end of September 2009, it had declined to 17.8, approximately equal to the September 11, 2012 level.

- 2.6 In terms of FEI's common equity ratio, please provide its DBRS bond rating when it was allowed a 33% common equity ratio and a 35% common ratio and the current 40% common equity ratio. If it is Ms. McShane's judgement that FEI has better market access now than when it had a lower common equity ratio please provide the spread on FEI (TGI) long term debt over equivalent maturity long Canada bonds to support that assertion.

Response:

FEI's (then BC Gas Utility Ltd.) common equity ratio was established at 33% in the 1994 generic hearing, increased to 35% in March 2006 (Terasen Gas Inc.) and to the current 40% in December 2009. DBRS rated the company "A" over this period. Market access is not simply a function of bond rating. The capital market conditions at the time of debt issue are of critical importance. Debt market conditions are not the same today as when FEI's allowed equity ratio was 33% or 36%. Please see discussion at page 35, lines 872-880 and associated footnote



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40. Although spreads for FEI are higher today than in years when the allowed equity ratio was lower, the higher spreads are related to broader trends in the debt markets (e.g., the elimination of the Foreign Property Rule, the downward pressure on government bond yields) rather than FEI-specific factors.

2.7 Please indicate the Consensus Economics forecast of the long Canada bond yield for 2013 and any private bank forecasts for longer periods of time.

Response:

The most recent (August 2012) Consensus Economics *Consensus Forecasts* for the 10-year Canada bond yield is 2.3% for the end of August 2013. The *Consensus Forecasts* do not provide a forecast for the long-term (30-year) Canada bond. The average of the most recent forecasts (end of August/beginning of September 2012) of 30-year Government of Canada bond yields made by the major investment banks for all of 2013 is 2.8%. Ms. McShane is not aware of any private bank forecasts for longer periods of time.

2.8 Please provide any academic or legal support for comparable earnings testimony as a basis for the fair ROE and explain why other witnesses on behalf of the utilities do not use this approach.

Response:

With respect to legal support, please see response to BC Util Cust-McShane IR 1.1.1. As regards academic support, Ms. McShane would not expect that academics would focus on the comparable earnings methodology. As the comparable earnings test is specifically associated with public utility finance, and the methodology is intended to implement the "fairness" standard enunciated in the *Hope* decision, academic discussion and support are more likely to be in texts that focus on public utility finance. See, for example, Charles E. Phillips, *The Regulation of Public Utilities*, 3rd Edition, Public Utilities Reports, 1993, pp. 397-398.

With respect to whether cost of capital experts who appear on behalf of utilities use the comparable earnings approach, some do and some do not. Although she has not done an exhaustive survey of the reasons why those who do not choose not to, at a high level, Ms.



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McShane understands that it is largely because they conclude that returns on book value are not a good measure of the market returns that investors expect. Ms. McShane agrees that the comparable earnings test does not measure the returns that investors expect on market value. However, in her view, the comparable earnings test measures the opportunity cost of equity in a manner compatible with the base (original cost) to which the allowed returns are applied and should be given significant weight to ensure adherence to the fair return standard.

- 2.9 Please confirm that after the financial crisis in 2010 on behalf of Enbridge Ms. McShane recommended an ROE adjustment formula before the National Energy board in a Line 9 hearing.

Response:

Confirmed. In the Enbridge Line 9 proceeding, as a relatively small pipeline, Enbridge Line 9 was seeking a methodology that would permit the determination of the ROE for each of 2008, 2009 and 2010 without estimating the initial ROE from first principles, and which could be used for subsequent test periods. The formula proposed in the Enbridge Line 9 proceeding used the NEB's initial RH-2-94 ROE of 12.25% as a point of departure, and would have changed subsequent years' ROEs from that point of departure by 50% of the change in forecast long-term Government of Canada bond yields and 50% of the change the spread between long-term A-rated corporate and Government of Canada bond yields.

- 2.10 Please confirm that if Enbridge approached Ms. McShane to consider an ROE adjustment formula she would no longer recommend one in general or the particular one she recommended in 2010.

Response:

At the present time, she would not recommend one in general.



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3. Topic: Trends in Economic and Capital market Conditions, pages 17 –

- 3.1 Can Ms. McShane confirm that she is recommending to the BCUC that capital market conditions in Canada are worse and the cost of capital higher than when she prepared her testimony in 2009? If so please provide the date of her 2009 testimony and the level of the TSX on March 9, 2009, the volatility index and the yield spread on BBB rated bonds.

Response:

No. The comparisons in her testimony are among capital market indicators at the end of the oral portion of the 2009 proceeding and when her testimony was prepared for this proceeding. The main conclusions are summarized at lines 448 to 469 of Ms. McShane's testimony.

- 3.2 Please provide a copy of the Consensus Economics forecast referenced in footnote 33.

Response:

Please refer to the response to ICG-McShane IR 1.26b for the Consensus Economics forecast referenced.

- 3.3 Please confirm that the increase in the earnings yield (Page 31) is also consistent with a decline in growth expectations consistent with the rapid recovery that occurred in Canada from the March 9, 2009 lows.

Response:

It is possible that the increase in earnings yield could be in part the result of lower long-term expected growth rates. However, that does not appear to be the case, as the five-year earnings growth rate forecasts available for the companies comprising the S&P/TSX 60 were higher in June 2012 than they were in September 2009, and the September 2009 forecasts were higher than the May 2009 forecasts.



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3.4 Please reproduce Table 3 using the data at the time that Ms. McShane filed her 2009 testimony so that like is compared with like.

Response:

Table 3 is reproduced below, with May 2009 data included.

	May 2009	September 2009	June 2012
S&P/TSX Composite			
Price Index	10,370	11,395	11,597
Earnings	\$624.1	\$530.8	\$789.0
Dividends	\$319.6	\$314.4	\$365.8
Trailing P/E	16.6X	21.5X	14.7X
Dividend Yield	3.1%	2.8%	3.2%
S&P/TSX 60			
Price Index	632	678	664
Earnings	\$43.7	\$38.5	\$48.0
Dividends	\$18.1	\$17.5	\$20.9
Trailing P/E	14.5X	17.6X	13.8X
Dividend Yield	2.9%	2.6%	3.1%
Forward P/E	14.9X	19.1X	12.6X
Forward Earnings Yield (E/P)	6.7%	5.2%	7.8%
10-year Canada Bond Yield	3.4%	3.3%	1.7%
E/P less 10-year Canada Bond	3.3%	1.9%	6.2%



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4. Topic: Business Risk Analysis, page 48-56

- 4.1 Would Ms. McShane agree with the dictionary definition of risk as the possibility of suffering harm, which in a finance context means losing money?

Response:

Yes, Ms. McShane agrees with the dictionary definition, which is consistent with the definition at lines 957 to 959 of Ms. McShane's testimony, i.e., the probability that the utility's future returns (including the return on and of capital) will fall short of the returns that investors expect and require.

- 4.2 Can Ms. McShane explain why given 4.1 above she has not looked at the history of FEI and its ability to earn its allowed ROE?

Response:

Ms. McShane has looked at that information. FEI's ability to earn its allowed return is implicit in its regulatory framework discussed at lines 1417-1423. The regulatory framework, which is a key determinant of a utility's ability to earn the allowed ROE, as well as the ability to recover the invested capital over the longer-term, is an important factor in the assessment of the utility's business risk. It is not only important that the utility be allowed the opportunity to earn the allowed ROE; the allowed ROE itself must be fair and reasonable.

- 4.3 Please explain how declining customer use and fewer additions increases the business risk of FEI, is this due to increased forecasting error? If so should it not show up in FEI's financials?

Response:

It is not related to increased forecasting error. The amount of throughput and the cost to deliver that throughput relative to alternatives is the ultimate determinant of whether a utility will be able to earn a fair return on and recover the invested capital. Continuing declines in customer usage and fewer customer additions are indicators of the increasing risk that, in the long-run, this may



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not be the case. While the regulatory framework provides the utility a reasonable opportunity to recover its invested capital by setting rates that are designed to recover the costs, the price and non-price related attraction of alternatives places limits on that ability.

- 4.4 Please confirm that Gaz Metro has lower natural gas penetration than FEI and more intense competition from electricity and yet the Regie allows Gaz Metro a formula ROE on 38.5% common equity. Does Ms. McShane judge FEI to have greater business risk than Gaz Metro?

Response:

Confirmed with respect to lower natural gas penetration by Gaz Métro. Confirmed that the Régie has allowed Gaz Métro a 38.5% common equity ratio, but it has also allowed Gaz Métro 7.5% deemed preferred shares, i.e., the company does not have any real preferred shares outstanding that create a financial obligation to the utility. Effectively, with no real preferred shares, Gaz Metro is allowed a higher common equity ratio than the 38.5% common equity ratio in isolation indicates. Ms. McShane would not judge FEI to face higher business risk than Gaz Métro.

- 4.5 Please confirm that in the AUC hearings in 2011 Ms. McShane testified that the bulk of BC shale gas would flow west and not flow on the NGTL or ATCO Pipe systems. Please explain why this is no longer her opinion.

Response:

Ms. McShane has not changed her mind. Ms. McShane stated in her rebuttal evidence on behalf of ATCO Pipelines that there was a reasonable likelihood that a significant amount of the Montney/Horn River shale gas can reasonably be expected never to enter the NGTL system. Ms. McShane stated in AUC ID 833, Transcript Vol. 3, page 408, "there's no guarantee that that gas will go through NGTL because there are other markets for that gas, and they will go to the market where they're [sic] the highest netbacks." In this testimony, page 53, lines 1369 to 1370, referring to the BC shale gas, Ms. McShane concluded "how much of that gas will flow to FEI's service area remains uncertain." Ms. McShane also notes that, since the 2011 Alberta generic



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cost of capital proceeding, the BC provincial energy strategy has been amended to support the development of natural gas for export as LNG and there have been a number of licenses granted to export LNG from BC, but the infrastructure to deliver natural gas into FEI's market area has not changed.

- 4.6 In the face of the increased competitiveness of natural gas and improved supply, can she point to one offsetting factor that would cause her to judge the business risk of FEI to have remained constant?

Response:

Ms. McShane has discussed in detail at lines 1243-1538 why, despite the decline in natural gas prices, FEI's market/demand and competitive risks have not declined and that the trends that have been creating downward pressure on FEI's throughput persist. At lines 1376 to 1377, with respect to supply risk, Ms. McShane concluded that supply risks are somewhat lower, but they were already low to begin with, indicating the incremental impact on FEI's risk profile is relatively minor. Operating risks have not changed materially (lines 1391-1392) and the regulatory environment, stemming from energy policy and legislation, is more complex and unpredictable (lines 1430-1431). In Ms. McShane's view, market/demand and competitive risks and regulatory risk are the most critical to the business risk profile, and risks have not declined in either case.



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5. Topic: Bond ratings

- 5.1 Ms. McShane notes that FEI is rated A by DBRS, please indicate which Canadian utilities have better DBRS bond ratings than FEI?

Response:

CU Inc. and Hydro One.

- 5.2 Ms. McShane notes that Moody's upgraded all secured debt financing in 2009 and as part of that system wide upgrading FEI's secured debt was upgraded to A1 or A (high). Please indicate why ratepayers should pay the higher cost of unsecured debt when FEI can issue secured debt on a higher rating.

Response:

First, such a requirement is not practical, since it would entail altering existing bond indentures, some of which have been in place for decades. Second, secured debt is generally more restrictive and more costly to manage than unsecured debt. For example, to dispose of assets outside the normal course of business, the company may need to obtain the consent of the bond holders. Third, not all the debt rating agencies maintain a ratings distinction between secured and unsecured debt. DBRS, for example, maintains the same ratings on the secured debt and the unsecured debt of FEI. Fourth, there is no guarantee that requiring a utility to secure its debt would result in a cost advantage, since, if there is one class of long-term debt, secured or unsecured, all bondholders are equally protected.

- 5.3 Please provide all support for the assertion that in Canada "investors are likely to focus on the lower rating" especially when it is a Moody's rating where Moody's does not rate all Canadian utilities, whereas DBRS does.

Response:

A study by the Federal Reserve Bank of New York (Richard Cantor, Frank Packer and Kevin Cole, "Split Ratings and the Pricing of Credit Risk", March 1997), in analyzing split ratings of



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investment grade bonds, concluded that, "clearly, pricing in the investment-grade sector is more conservative-placing more weight on the lower rating than the higher rating". For bonds rated in the investment grade category, the authors concluded that, "the market prices split rated bonds between the yield implied by the lower rating and that implied by the average rating".

Two earlier studies which conclude that investors pay more attention to the lower rating are: Billingsley, R.S., R.E. Lamy, M.W. Mar, and G.R. Thompson, "Split Ratings and Bond Reoffering Yields," *Financial Management*, 14 (1985), pp. 59-65 and Liu, P., and W. Moore, "The Impact of Split Bond Ratings on Risk Premia," *Financial Review*, 22 (1987), pp. 71-85.

- 5.4 Please confirm and provide details on why the predecessor company to FEI rescinded its agreement with S&P and no longer has an S&P bond rating.

Response:

Confirmed that FEI does not have an S&P bond rating. FEI (then Terasen Gas) decided early in 2004 to discontinue the engagement of S&P to provide credit ratings on the debt of Terasen Gas. The decision of TGI to discontinue the engagement of S&P was the subject of information requests in both the 2005 cost of capital proceeding and the 2009 Application. As stated in response to BCUC IR 1.57.2 in the 2005 cost of capital proceeding, and repeated in response to JIESC/BCOAPO/CEC-TGI IR 1.35(c) in the 2009 Application, "To initiate or maintain a credit rating relationship, an issuer must believe that the costs of soliciting credit ratings (primarily fees charged by the agency and management's time spent maintaining the relationship) will be less than the benefits of having credit ratings, whether in a lower cost of capital, enhanced access to capital, or a combination thereof. FEI's assessment at the time was that the benefits of the S&P ratings did not exceed the costs of maintaining the rating relationship." S&P continued to provide an unsolicited rating on FEI's outstanding debt based on publicly available information until September 2010, when it was withdrawn due to lack of market interest.

- 5.5 Please confirm that Moody's places more weight on the regulatory environment than the financial metrics discussed by Ms. McShane on pages 58-61 and that Moody's judges the regulatory environment in Canada to be much better (favourable towards investors) than in the US.



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Response:

Moody's puts 25% weight on Regulatory Framework, 25% weight on Ability to Recover Costs and Earn Returns, 10% weight on Diversification and 40% weight on Liquidity and Financial Strength. Ms. McShane cannot confirm that, "Moody's judges the regulatory environment in Canada to be much better (favourable towards investors) than in the US." Moody's stated in its June 2010 *Special Comment: Regulatory Frameworks – Ratings and Credit Quality for Investor Owned Utilities Evaluating a Utility's Regulatory Framework*, "We view Canada's business and regulatory environments as being more supportive than many of those in the U.S."



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6. Common Equity Ratio Changes, pages 62-64

- 6.1 Please provide the common equity ratios that the AUC allows taxable gas and electricity distributors and discuss whether they are responsible for the supply of gas or electricity (obligation to serve) to ratepayers.

Response:

The allowed common equity ratio in Alberta for taxable electric distributors is 39%. For ATCO Gas, the allowed common equity ratio is 39% and for AltaGas Utilities, the allowed common equity ratio is 43%.

In Alberta, the electric distribution system owners have an obligation to provide two types of retail electricity service to customers. First, regulated rate option (RRO) service to customers who are eligible for that service (generally, residential and small commercial customers) and who do not choose to obtain their electricity from a competitive retailer. Second, default supply service to larger commercial and industrial customers who have not made arrangements to obtain their electricity through a competitive retailer or to act as their own retailer. A number of the major electricity distributors in Alberta (e.g., ATCO Electric, FortisAlberta and EPCOR Distribution & Transmission) have chosen to make arrangements (as permitted under the relevant legislation) to have another party provide RRO and default supply service on their behalf, but under the legislation the obligations respecting these services and their inherent responsibilities and liabilities remain with the distribution system owners.

With respect to the gas distribution utilities, Ms. McShane understands that, under the relevant provincial legislation, they continue to have responsibility as the default supplier, but can contract out that responsibility, which ATCO Gas has done.

- 6.2 Please confirm that Union Gas had an investment grade bond rating even when it operated with a 29% common equity ratio and both Union and Enbridge Gas Distribution Inc (EGDI) currently operate with 36% common equity ratios.

Response:

Confirmed that Union Gas had an investment grade bond rating with 29% common equity, 12.5% preferred shares and normalized tax accounting. As a result of negotiated settlement, the common equity ratio was raised to 34% (1997) with Union's switch to flow through



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accounting and the reduction in the preferred share component to under 4% subsequent to the repeal of PUITTA and announced proposal by the CICA to treat preferred dividends as an expense. The common equity ratio was raised to 35% in 1998 subsequent to Union's merger with Centra as a result of a negotiated settlement, and then to 36% in 2006, also the result of a negotiated settlement. Both Union and Enbridge Gas have requested increases in common equity ratio to 40% and 42% respectively for the 2013 test year, but decisions on these requests have not been issued.

- 6.3 Please discuss the differences in regulatory protection between Gaz Metro, FEI, Union and EGDI and confirm that the Ontario utilities operate without the benefit of a comprehensive gas cost reconciliation account available to FEI.

Response:

FEI's deferral accounts by type are described in included in Appendix H, Table 10 of the FBCU's Application. FEI's major deferral accounts are the CCRA, MCRA and RSAM. The CCRA and the MCRA are for recovery of gas commodity costs and related costs, i.e., pipeline and storage respectively. The RSAM is a combination weather normalization and partial decoupling mechanism, which adjusts for changes in customer consumption in the residential and commercial customer classes. Enbridge, Union and Gaz Métro also have gas purchase deferral accounts, which cover gas commodity, pipeline and storage costs. Neither Union nor Enbridge has a weather normalization accounts, and, to Ms. McShane's knowledge, have not requested them. The performance-based regulation plans of Enbridge and Union include accounts to adjust for customer consumption, called the Average Use True-Up Variance Account. Gaz Métro has a weather normalization account, and a mechanism in its incentive plan that provides protection for variations in average customer usage of residential and commercial customers. Ms. McShane cannot confirm that the Ontario utilities operate without the benefit of a comprehensive gas cost reconciliation account available to FEI. The three utilities' gas cost reconciliation accounts (or PGVAs) cover the same supply related expenses.

- 6.4 Please indicate the free cash flow (FCF) for FEI and the Fortis BC utilities since 2000 and projected for the three years of Ms. McShane's "test year" where FCF is defined as net income after preferred share dividends plus non-cash charges



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minus changes in net working capital and planned or normal maintenance capital expenditures.

Response:

Attachment 6.4 contains the FCF analysis of FEI and FBC.

Only projections for 2012 and 2013 have been included. They reflect FBCU's interpretation of FEI's and FBC's most recent BCUC RRA decisions.

- 6.5 Please indicate any financial access problems suffered by Canadian utilities during the financial crisis, where such access problems are defined as inability to raise financing at fair and reasonable rates similar to unregulated firms with the same bond rating.

Response:

Utilities maintain regular contact with their debt capital market advisors. It is Ms. McShane's understanding, based on her conversations with Canadian utilities, that during the financial crisis, these advisors indicated that investors were avoiding all but the safest of credits, and that for those transactions that did get completed, credit spreads and new issue concessions had increased dramatically compared to earlier periods. Based on Ms. McShane's review of new utility issues over the period between the end of August 2008 and early February 2009, no regulated company issued debt with a term greater than 10 years. At the time of its five year debt issue in December 2008, issued at a 400 basis point spread over the five-year benchmark Canada bond, based on Ms. McShane's discussion with the company, Nova Scotia Power could not have raised debt with a term of 10 years or more. Around the same time, AltaLink had planned to issue long-term debt pursuant to AUC Order No. U2008-317, but in December 2008 informed the Alberta Utilities Commission that it had been advised by its lead dealer that it was highly likely that the proposed long-term debt offering could not be successfully marketed until early 2009. As stated in footnote 42, page 36, during the period June 11, 2008 to January 29, 2009 inclusive there was not a single issuer without at least one "A" credit rating who was able to issue long-term debt on any terms in the public Canadian debt 1 market.



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7. CAPM Discussion, pages 66-70

7.1 Is it Ms. McShane's judgment that the BCUC should consider the full range of judgments as to the market risk premium and that it was incorrect in 2009 to rely on the Fernandez survey results that placed the median or typical estimate in a range of 5.0-6.0% with the low point for Canada and the high point for the US.

Response:

The Commission should consider the range of estimates of the risk premium with which it is presented in light of the strength of the analytical support for those estimates. As regards the Fernandez survey, it is Ms. McShane's view that such surveys are problematic, as explained in response to BC Util Cust-McShane IR 1.10.7.

7.2 Can Ms. McShane provide her understanding of the market risk premium estimates accepted by regulatory boards in Canada since 2008 and the financial crisis, that is, what values were used by, for example, the AUC, the Board of Commissioners of Newfoundland and Labrador, the Regie, and the OEB?

Response:

The following table presents the market risk premiums incorporated in the decisions of the BCUC, the Alberta Utilities Commission (AUC), the Ontario Energy Board (OEB), the Newfoundland and Labrador Board of Commissioners of Public Utilities (NLPUB) and the Régie de l'énergie since late 2009.

Decision and Date	Risk Free Rate	MRP
BCUC, <i>Terasen Gas Inc. Terasen Gas (Vancouver Island) Inc. Terasen Gas (Whistler) Inc. and Return on Equity and Capital Structure Decision, December 2009</i> ^{1/}	4.30%	5.00%-6.00%
Alberta Utilities Commission, <i>2009 Generic Cost of Capital, Decision 2009-216, November 2009</i>	4.13-4.5%	5.00%-5.75%



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Decision and Date	Risk Free Rate	MRP
Alberta Utilities Commission, 2011 Generic Cost of Capital, Decision 2011-474, December 2011	3.4-3.8%	5.00%-7.25% ^{2/}
OEB, Report of the Board on the Cost of Capital for Ontario's Regulated Utilities, EB-2009-0084, December 2009	na	na ^{3/}
NLPUB, Newfoundland Power, PU 43(2009), December 2009	4.50%	6.00%
Régie de l'énergie, Gaz Métro, Décision D-2009-156, December 2009	4.23-4.5%	5.50% ^{4/} -5.75%
Régie de l'énergie, Gazifère, Décision D-2010-147, November 2010	4.15-4.5%	5.50% ^{4/} -5.75%
Régie de l'énergie, Gaz Métro, Décision D-2011-182, November 2011	3.91-4.5%	5.50% ^{4/} -5.75%

Notes:

^{1/} As stated on page 45 of the decision, the Commission gave most weight to the DCF approach with lesser weight to the ERP and CAPM approach and a smaller weight to the comparable earnings approach.

^{2/} On page 13 of the decision, the AUC noted:

"..the Commission finds that the expected market equity risk premium today may be higher than its historic average, due to today's low interest rates. The Commission accepts that the market equity risk premium today may reasonably be as high as the 7.25 per cent mid-estimate.....The Commission finds that a reasonable range for the market equity risk premium is 5.0 per cent to 7.25 per cent."

^{3/} The OEB determined an initial utility equity risk premium of 5.0% prior to the addition of a 50 basis points for "transactional costs". At Ms. McShane's estimated relative risk adjustment of 0.65-0.70, the implied market equity risk premium would be in the range of 7.1-7.7%.

^{4/} In the 2009 and 2010 cases, the 5.50% to 5.75% market risk premium was described as the "market risk premium before the financial crisis" and an additional 50 to 100 basis points was added to the market risk premium to account for the effect of the financial crisis, which would indicate a market risk premium of 6.0% to 6.75%. In 2011, this 50-100 basis point adjustment to the market risk premium for the financial crisis was replaced by a 25 to 40 basis point credit spread adjustment applied directly to the utility return. At the Régie's benchmark distribution utility beta range of 0.50 to 0.60, the credit spread adjustment implies a market risk premium of 6.0% to 6.4%.

7.3 Please provide all justification for the claimed assumption that the market risk premium is assumed to be uncorrelated with the risk free rate. Is this equally true



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if the risk free rate is regarded as the Treasury Bill rate or the long Canada bond yield?

Response:

The very basis of the CAPM is that there is a risk-free rate, and risk-free in the context of the CAPM means that the risk-free security has zero correlation with any other security. The market risk premium is the difference between the market return and the risk-free rate, so it follows logically that the theoretical CAPM posits no correlation between the two. In practice, there would be correlation between both the risk-free rate proxied by either short-term Treasury bills or long-term Government of Canada bonds and the equity market, as the equity market is sensitive to and does react to changes in interest rates.

- 7.4 Would Ms. McShane's criticism of the CAPM be equally true if the Conditional CAPM is used where the market risk premium is conditional on the state of the economy and adjusts for changes in risk aversion by, for example, using the credit spread on corporate bonds?

Response:

Ms. McShane is aware that there have been models developed that extend the CAPM, including the conditional CAPM, which appear to better explain stock returns than the CAPM itself. However, Ms. McShane is not aware of any widely accepted applications of the conditional CAPM that provide guidance on how to adjust either the market risk premium or the beta for changes in market conditions. Moreover, please see the discussion at lines 2237 to 2267 which sets out the various issues with relying on beta that a conditional CAPM would not resolve.

- 7.5 Would Ms. McShane agree that ROE adjustment formulae that she has proposed in the past adjust the allowed ROE by changes in credit spreads and long Canada bond yields and that such models can be regarded as conditional CAPM models. If not why not.



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Response:

No. She would not regard the formula as a conditional CAPM, as the point of departure is based on the application of multiple approaches to estimating a fair ROE, not solely the CAPM.

- 7.6 Would Ms. McShane agree that there are two factor CAPM type models, as proposed, for example, by Fischer Black, where one factor is the interest rate, which specifically account for some of her criticisms of the conventional CAPM. If not why not?

Response:

Ms. McShane is aware that there have been two factor models developed. The Fischer Black model was developed to address the recognition that there is no true risk-free asset. It does not include an interest rate. Fischer Black proposed a model in which the risk-free rate was represented by a portfolio of assets that had no co-variability with the market. He posited that the expected return on a security would be equal to $(1 - \beta_s) \times R_z + \beta_s \times R_m$, where β_s is the beta on the security, R_z is the expected return on the zero-beta portfolio and R_m is the expected return on the market. The implication of the model was that zero-beta security market line was flatter and the intercept (R_z) higher than for the simpler CAPM, predicting higher returns for low beta securities and lower returns for high beta securities than the simple CAPM. To Ms. McShane's knowledge, however, the construct of a zero beta portfolio is largely theoretical, and thus, in and of itself, does not account for Ms. McShane's concerns.

- 7.7 Would Ms. McShane agree that the BCUC's criticism on page 69 is inaccurate to the extent that actual betas, such as the PNG beta of 0.26 referred to, are simply the statistical estimate over a particular time period and whatever happened or did not happen in that time period determines the estimate, which is why judgment is used to determine a forward or expected beta?

Response:

It is true that individual company betas calculated over specific periods may not comport with their fundamental relative risk. Circumstances specific to the company may cause their prices



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over a particular period to move counter to the market and result in a measured beta that is either higher or lower than "normal". It is thus true that one cannot look at a single beta for a single company and discern anything about its risk relative to its peers. Although Ms. McShane agrees that judgment is required to determine a forward "beta" or relative risk adjustment, given the more general concern she has discussed with "raw" utility betas as predictors of expected returns, she agrees with the Commission's conclusion that "the relative risk factor should be adjusted in a manner consistent with the practice generally followed by analysts so that it yields a result that accords with common sense and is not patently absurd."

- 7.8 Would Ms. McShane agree that the OEB comments on page 70 are inaccurate descriptions of the CAPM, since in practise any analyst, including both Ms. McShane and Dr. Booth, update their market risk premium estimates to be consistent with capital market conditions and that Dr. Booth has increased his market risk premium estimates in line with the trend of decreasing interest rates and that the ROE adjustment formulae also capture this? If not why not?

Response:

No. Ms. McShane acknowledges that Dr. Booth has increased his risk premium somewhat as interest rates have declined but that increase does not invalidate the OEB's statement that "In particular, the Board is concerned that CAPM, as applied by Dr. Booth, does not adequately capture the inverse relationship between the ERP and the long Canada bond yield. As such, the Board does not accept the recommendation that it place overwhelming weight on a CAPM estimate in the determination of the initial ERP."

More generally, the OEB also noted that Dr. Booth recommended that "the Board base its fair ROE on a risk based opportunity cost model, with overwhelming weight placed on a CAPM estimate", and that "This view was not shared by other participants in the consultation, who asserted that the Board should use a wide variety of empirical tests to determine the initial cost of equity, deriving the initial ERP [equity risk premium] directly by examining the relationship between bond yields and equity returns, and indirectly by backing out the implied ERP by deducting forward-looking bond yields from ROE estimates...The Board agrees **that the use of multiple tests to directly and indirectly estimate the ERP is a superior approach to informing its judgment than reliance on a single methodology.**" [emphasis in original]



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8. Topic: Market and Book Values

- 8.1 Ms. McShane specifically states (page 71, line 1831-1835) that the allowed ROE should be converted from a market value to a higher book value such that the stream of earnings is maintained. Please confirm that this means that if the allowed ROE is not reduced due to regulatory lag and the stock price rises to reflect that, then she would **not** reduce the allowed ROE to a fair and reasonable level. If not why not.

Response:

It should be clear from Ms. McShane's testimony that is not the case. Ms. McShane's testimony states that "When the allowed return is applied to an original cost book value, a market-derived cost of attracting capital should be converted to a fair and reasonable return on book equity so that the stream of dollar earnings on book value equates to the investors' dollar return **requirements** on market value." [emphasis added]

Please refer to the response to BCUC IR 1.75 series.

- 8.2 Please confirm that Boards have rejected Ms. McShane's assumptions in a) since they amount to "rubberstamping unrealistic expectations."

Response:

Ms. McShane cannot confirm. She does not know to what assumptions the question refers, nor is she aware of any decision that has referred to "rubberstamping unrealistic investor expectations". However, the question's premise, i.e., unrealistic investor expectations, suggests that investors (including sophisticated institutional investors) either do not understand regulation or are irrational. The latter implies that investors are willing to pay a price for utility shares well above book value in the expectation that they will incur significant capital losses, an implication which defies logic.



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8.3 Please confirm the following quotes from the Alberta EUB in its TransAlta decision (U99099, page 303)

“In essence, a regulated company’s earnings are driven by the portion of the original cost rate base deemed to be financed by common equity. This fact results in a fundamental disconnect to the theory that market capitalization ratios, which have deviated significantly from book capitalization ratios, reflect the appropriate financial risk necessary to determine a fair composite return to be applied to the original cost rate base of a pure play regulated utility. This is because the earnings of a pure play regulated utility are governed by and driven by the regulated return allowed on book equity. In other words, it is the book equity that reflects the appropriate financial risk necessary to determine a fair composite return for a pure play regulated utility.”

“The Board would be derelict in its statutory responsibilities to recognize market capitalization ratios that are derived from a market value capitalization that deviates from the intrinsic long-run value of the regulated firm.”

Please indicate whether Ms. McShane agrees with the AEUB that market values have no place in regulation and that the BCUC would be similarly derelict in exercising its responsibilities and following her advice by making the suggested conversion from market to book values.

Response:

The cited quotes are found on pages 301 and 303, respectively.

Ms. McShane does not agree with the statements. When the market/book ratios of the proxy utilities used to estimate the cost of equity are above 1.0, the application of the market-derived cost of equity to the book value of equity would necessarily have to be increased to provide a stream of earnings on book value that equates to the investors’ dollar return requirements on market value unless the book value equity ratio of the specific utility in question is higher than the market value equity ratios of the otherwise similar risk proxy utilities.

As for being derelict in their statutory duties, the Commission’s responsibility is to provide the utilities subject to its jurisdiction with the opportunity to earn a fair rate of return. As stated on page 28 of Decision 2009-216, the Commission stated:



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"After review and consideration of the legislation and the evidence, legal argument and case law referred to in this proceeding, the Commission reiterates its agreement that there are three criteria or factors to be employed in determining a fair rate of return. Each criterion or factor must be applied by the Commission when determining a fair return, but what constitutes a fair return (including capital structure) is a matter of judgment for the Commission, exercised after weighing all of the evidence and argument in the context of the facts observed in the marketplace."

Further, the Commission stated at paragraph 107:

"The Commission notes with approval the following description by the ATCO Utilities of how the three factors or criteria of the fairness standard are assessed:

In the ATCO Utilities' view, the assertion that the three-part test is "simply three ways of looking at the same thing" fails to recognize the critical fact that there are differing tests which help to "triangulate" a Fair Return. Each may have greater or lesser relevance depending upon the economic landscape upon which the tests are conducted. The frailty of reliance on only a single leg of the three legged stool for stability and reliability of the result over changing economic conditions should be obvious."

The approaches that regulators take, or their philosophical approaches, to the cost of capital, are not static. It is of note that, prior to Decision RH-1-2008 for TQM (March 2009), which adopted an ATWACC approach that uses market value capital structure weights to set the cost of capital, the NEB had historically relied on what it referred to as the "traditional approach". The "traditional approach", i.e., one which establishes a market-derived cost of equity and applies it (inclusive of a small financing flexibility or flotation cost adjustment) to the book value of equity, effectively presumes that the long-run value of the regulated firm is equal to book value. In Decision RH-1-2008, the NEB took a different approach, which "is more aligned with the way capital budgeting decision making takes place in the business world as compared to an approach by component that would include a stand-alone cost of equity estimate," which "better utilizes financial market information," and which "enables better comparisons of return on capital for companies of similar risk." (pages 18 and 19)



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- 8.4 Please provide any references to published academic journals or books that indicate that market to book ratios above 1.0 for a 100% rate of return regulated utility on historic cost regulation does not indicate the allowed ROE is too high.

Response:

This is a topic in which academic interest would be limited, with the debate on the subject focused in regulatory proceedings such as this one, rather than academic journals. Dr. Roger Morin, *New Regulatory Finance*, Public Utility Reports, Inc., 2006, Chapter 12 Market-Book and Q-Ratios (pages 359-378), explains why market-to-book ratios of utilities should be expected to exceed 1.0, including the following:

"Fourth, in an inflationary period, the replacement cost of a firm's assets will increase more rapidly than its book equity. To avoid the resulting economic confiscation of shareholders' investment in real terms, the allowed rate of return should produce an M/B ratio that exceeds 1.0, as the subsequent section on Q-ratios will demonstrate. It would be difficult for utilities to attract capital in an environment where industrials command M/B ratios well above 1.0 while utilities are contemplating a reduction of their stock price toward book value at the next rate case. That is not a realistic view of regulation."

Dr. Morin cites the following articles in his text which support this proposition:

Dr. Forrest Harlow, "Efficient Market Perspectives on Utility Rate of Return Adequacy", *Public Utilities Fortnightly*, March 29, 1984, pages 38-40; and "Q-Ratios and the Target Return on Equity for Utilities", *Public Utilities Fortnightly*, April 12, 1984, pages 29-31.

Dr. Robert H. Litzenberger, "Determination of a Target Market to Book Value Ratio for a Public Utility in an Inflationary Environment", in *Proceedings: Iowa State University, Regulatory Conference on Public Utility Value and the Rate-Making Process*, 1980.

- 8.5 Please confirm that if regulation mimics competition and the utility is allowed to increase its rate base to replacement cost or to a price level adjustment, due to inflationary and other increases, then the correct rate of return to apply to the rate base is not the nominal rate but the real rate. Otherwise the shareholder is compensated for inflation through both the return and the base it is applied to. If



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not please explain in detail why not and provide references to the literature that addressed this question in the 1970's when inflation was a serious problem.

Response:

If a replacement cost rate base, rather than a historical cost rate base were to be used, then theoretically, yes, the rate of return applied should be a real rate of return. Ms. McShane is not recommending a replacement cost rate base. Rather, her testimony explains, at lines 1860 to 1873, how economic theory supports an equilibrium market-to-book ratio for utilities above 1.0.



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9. Topic: Use of US comparables, page 73

- 9.1 Please confirm that where the Boards cited on page 74 indicate that US companies can be informative and results are similar, Ms. McShane is taking them to be identical.

Response:

Ms. McShane does not consider that they are identical. No two utilities are identical. Every utility has unique characteristics. It would be impossible to find two companies in any industry that are identical. The sample of utilities needs to be of comparable total (business plus financial) risk to be used as proxies for the benchmark BC utility to rely on its cost of equity estimate as a proxy for the cost of equity for the benchmark utility. Ms. McShane has selected a sample of U.S. utilities that is of comparable total risk to FEI.

- 9.2 Please report the decisions of the Regie and Board of Commissioners of Newfoundland and Labrador that rejected the use of US firms as comparables and the reasons why.

Response:

The Newfoundland and Labrador regulator (PU 43(2009)) concluded that was clear that on almost every measure Newfoundland Power would have to be considered less risky than the U.S. comparables. In its most recent decision for Gaz Métro (D-2011-182), the Régie concluded that it has not seen sufficient evidence to conclude that the two countries' regulatory, institutional, economic and financial environments, and their impact on the resulting opportunities for investors and for the regulated-rate companies, are comparable. Despite this broad finding, the Régie gives 50% weight to U.S. market return data in arriving at its estimate of the market risk premium.



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10. Topic: Equity Risk Premium Tests, page 76-83

- 10.1 Please indicate whether Ms. McShane judges equity markets to be affected by interest rate changes.

Response:

Yes. All other things equal, rising interest rates are negative for equities and vice versa.

- 10.2 Please confirm that any interest rate changes are included in the return from equities, but not in the bond "income" returns.

Response:

The equity returns would include the effects of changes in interest rates. The bond income returns do not. The bond income returns are intended to be a proxy for the risk-free rate. To be a measure of the risk-free rate, the proxy should not be affected by changes in interest rates.

- 10.3 Please provide the market risk premium estimates in Table 10 where the bond income return is subtracted from the equity income return, so that the risk premium estimates are consistently estimated.

Response:

Ms. McShane does not have the data to do the requested calculations. Nevertheless, Ms. McShane disagrees with the premise of the question. The bond income return is measuring the risk-free rate.

- 10.4 Please provide any academic references in published journal articles or books that would estimate the equity market risk premium by only looking at part of the return from holding bonds but all of the return from holding equities.



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Response:

Please see Ms. McShane's testimony, Appendix A, footnote 7, which provides a citation from the Ibbotson *SBI 2012 Valuation Yearbook* explaining why the bond income return should be used. The textbook, *Principles of Utility Corporate Finance*, by Drs. Leonardo Giacchino and Jonathan Lesser, Public Utilities Reports, 2011, page 234, states: "The most common historic risk-free rate used to estimate the historic market risk premium, i.e., $E(R_m) - r_f$, is the income return on U.S. Treasury bonds." They state that of the three components of the of the bond return, the income return, or coupon payment, reinvestment return and capital appreciation return, only the historic income return is the only truly "risk-free" component.

- 10.5 Please indicate the first testimony filed by Ms. McShane that estimated the market risk premium using bond income returns, rather than actual returns.

Response:

Ms. McShane does not know precisely, but her testimony in the 2009 Proceeding explained why income returns should be used. In her filed testimony for the 2009 Proceeding, she stated at page 49:

"The application of the CAPM requires the estimation of the market return in relation to the risk-free rate. While government bonds are considered default-free, they are not risk-free; they are subject to interest rate risk. The total bond returns experienced include capital gains and losses resulting from changes in interest rates over time. The bond income return, in contrast, reflects only the bond coupon payment portion of the total bond return; it represents the riskless component of the bond return. In principle, using the bond income return more accurately measures the historic equity risk premium above the risk-free rate."

- 10.6 Please confirm (page 84) that when inflation was high required equity returns were high, that is positively related, but the higher discount rate caused equity prices to be lower than they otherwise would have been resulting in a negative ex post (after the fact) relationship between inflation and equity returns. As a result, there was a positive relationship between expected inflation and expected equity



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returns. If Ms. McShane disagrees please explain why this orthodox explanation is invalid.

Response:

Ms. McShane does not disagree with the principle expressed in the question, i.e., that there should be a higher expected return at higher rates of inflation. Her testimony states: "Theoretically, the expected return on equity should be equal to the sum of the real risk-free cost of capital, the expected rate of inflation and an equity risk premium." (lines 2112-2113). Ms. McShane's analysis was assessing whether or not the expected nominal equity market returns would be lower than nominal equity returns have been historically given that the rate of inflation expected in the future is lower than the historical (actual) rate of inflation has been. Her analysis showed that, generally, at lower rates of inflation, real equity returns have been higher than they were at higher rates of inflation and, therefore, no adjustment to the nominal historical equity market returns for lower future inflation was warranted. The observation that real rates of return have been higher at lower rates of inflation is consistent with the documented negative effect on real economic activity and corporate profitability of high rates of inflation. Eugene F. Fama, "Stock Returns, Real Activity, Inflation, and Money", *The American Economic Review*, September, vol. 71(4), 1981, documents the negative relationship between high rates of inflation and future real economic growth rates. Steven A Sharpe, "Stock Prices, Expected Returns, and Inflation", *Finance and Economics Discussion Series 1999-02*, 1999, argued that expectations of real earnings growth are negatively related to expected inflation due to declines in productivity which, in turn, impact corporate profitability.

From Ms. McShane's Table 13 at page 84 of her testimony, it can be concluded that the experienced real equity returns have generally been higher at lower rates of inflation. This is consistent with the conclusions in a study on U.S. markets that historically, inflation has not been good for real equity returns. The study found that, over a 200 year period, equities performed best during periods of deflation, returned an average real return of 8% when inflation was in the range of 0-5% over the entire period and 10% since 1971, and that while equities have more than kept pace with inflation over the long-term, "the asset class generally does not do well in high inflation years." (John J. Mullin and Leila Heckman, "Outlook for U.S. Inflation: Lessons from Two Centuries of Financial History", *Mesirow Financial International Equity*, September 2009.)

Again, these conclusions support the use of historical nominal equity returns without adjustment for lower future inflation for purposes of estimating the market equity risk premium.



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- 10.7 Please explain why Ms. McShane makes no use of current survey evidence of the market risk premium.

Response:

Surveys of market risk premiums are problematic for several reasons. First, there appears to be a significant amount of circularity in the results. Pablo Fernandez, along with Javier Aguirreamalloa and Luis Corres, publishes an annual survey of market risk premiums. Of the 1650+ responses to the 2102 Fernandez survey ("*Market Risk Premium used in 82 countries in 2012: a survey with 7,192 answers*") that provided the source of their estimates, close to 85% of the respondents appear to use other published sources, rather than their own estimates (page 10). Second, it is not clear with what risk-free rate the survey market risk premium estimates are intended to be applicable. The survey does not specify whether, when they use their reported estimates of the equity market risk premium, respondents use them in conjunction with a long-run average risk-free rate or whether they make adjustments they to the estimated market risk premium to account for differences between the long-run average and prevailing risk-free rates. Third, the survey does not specify what other adjustments respondents might make if they are using their estimate of the market risk premium to derive a cost of equity for a particular company. For example, analysts frequently make adjustments to the market equity risk premium for the size of the company, as the "market" is dominated by large capitalization stocks and empirical studies that have documented higher returns for smaller companies than predicted by the CAPM. To provide some perspective, using the U.S. equity market as an illustration, such adjustments for size could range from approximately one percentage point for a mid-cap equity to over six percentage points for micro-capitalization equities (Ibbotson, *S&P 2012 Valuation Yearbook Market Results for Stocks, Bonds, Bills, and Inflation 1926-2011*, pages 89-95).



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11. Topic: Relative Risk Adjustments, pages 88-94

- 11.1 Please indicate the institutional ownership of Fortis and generally the share of NYSE and TSX stocks owned by ordinary retail investors versus institutions.

Response:

Ms. McShane does not have all the requested data, as the data are not readily accessible on an aggregate basis for Canada. The proportion of Fortis Inc. stock held by institutions is approximately 20%. For the other four Canadian utilities in Ms. McShane's Canadian sample, the approximate percentage of shares held by institutions is: Canadian Utilities, 12% (in addition to the 53% of the shares owned by ATCO Ltd.), Emera, 20%, Enbridge, 70% and TransCanada, 60%. In the U.S., the institutional holdings as a percentage of outstanding stock as of January 2012 based on industry level data of the companies covered by *Value Line* was approximately 45%.

- 11.2 Please indicate the share of trading by retail versus institutional investors in Fortis and stocks on the TSX and NYSE respectively.

Response:

Ms. McShane does not have the requested data.

- 11.3 Please indicate whether Ms. McShane agrees that institutional investors generally hold large diversified portfolios and that beta measures the risk of adding a stock to a large diversified portfolio.

Response:

Ms. McShane would agree that institutional investors (e.g. pension funds) generally hold large diversified portfolios. In the context of the CAPM, the beta of the stock weighted by the proportion of the portfolio represented by the stock is a measure of the risk of adding the stock to a large diversified portfolio.



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- 11.4 Please indicate whether Ms. McShane is aware of any academic research that indicates that own price or idiosyncratic risk is priced in either the Canadian or US stock markets.

Response:

A recent article entitled *Idiosyncratic Risk and the Pricing of Poorly-Diversified Portfolios* (Chris Brooks and Xiafei Li, EDHEC-Risk Institute, May 2011) summarized the state of the research on whether idiosyncratic risk is priced in the market as: "However, there is still no consensus in the literature regarding whether idiosyncratic risk is priced in the stock market." Further, "Altogether, the lack of agreement in existing research merely serves to illustrate the fragility of current conclusions on idiosyncratic risk and its role in explaining the cross-sectional variation in returns."

- 11.5 Please indicate if Ms. McShane is aware of any expert witnesses that use observed beta estimates without adjustment to ensure that they are good forecast beta estimates, whereas the academic tests used actual beta estimates.

Response:

Ms. McShane assumes that by observed betas, the question is referring to "raw" betas, i.e., the statistical output from a linear regression. No, Ms. McShane is not aware of any expert witnesses who simply use "raw" betas without ensuring that they are good estimators of future betas and/or good predictors of expected returns. To her knowledge, academic studies use "raw" betas.

- 11.6 Please confirm that the basis of risk management is the use of negative beta securities to hedge a security in question and that the derivative business is based on this.



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Response:

Confirmed.

- 11.7 Please confirm that in practise it is extremely rare to find a negative beta equity security, but if one were to exist then it would be valuable in hedging the risk of an equity portfolio and reducing risk.

Response:

It is not unusual for there to be negative betas, but it is fairly unusual for betas to be persistently negative. The AMEX Gold BUGS Index (also referred to as the HUI Index), which includes the largest and most widely held gold production companies, has shown negative betas vs. the S&P 500 over extended periods of time. In the context of the CAPM, an equity security with a persistently negative beta would be considered valuable for reducing risk in a portfolio.

- 11.8 Please confirm that we are estimating the cost of equity capital or the fair return for an investor in utilities and that indirectly all companies are owned by actual investors and that this is what matters, not the indirect owner such as another utility.

Response:

Confirmed that the fair return is not dependent on the happenstance of ownership. The fair return reflects the opportunity cost of the capital invested, i.e., the return that could be earned if the investor had committed funds to an alternative investment of comparable risk. Ultimately, that risk relates, not to how the investment's price fluctuates when the market moves up and down, but whether the investment will generate comparable returns and the invested capital will be recovered.



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- 11.9 Please provide any citations to any academic literature that supports the use of relative standard deviations of portfolios of securities as a risk measure when risk (standard deviation) always declines when you randomly increase the size of a portfolio.

Response:

Ms. McShane is not aware of any academic literature in a peer-reviewed journal that supports looking at relative standard deviations as a risk measure. Standard deviations are a widely accepted measure of stand-alone risk. The relative standard deviation model is one of the models described in Ibbotson, *2011 Valuation Yearbook*, for estimating the international cost of capital. Relative standard deviations are also used in the Goldman modified beta approach for the same purpose. Please note that Ms. McShane does not use the standard deviation of one company relative to the market, but rather the standard deviation of a portfolio (the utility sector) relative to the average and median standard deviations of the individual market sectors that make up the market portfolio. This approach mitigates the issue the declining standard deviation as one adds securities to a portfolio.

- 11.10 Please provide in machine readable form (Excel) the data used to generate the betas in Table 16.

Response:

The data used to generate the betas in Table 16 are provided in Attachment 11.10. Weekly betas were generated using 260 weeks of data. Monthly betas were generated using 60 months of data.



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12. Topic: Risk Premium Estimates, page 95-100

- 12.1 Please explain why Ms. McShane uses a "normalised treasury Bill return of 2.75% when the US federal Reserve is committed to keeping the Federal Funds rate at 0.-0.25% through 2014 and she is using a three year time horizon.

Response:

In the referenced analysis, Ms. McShane used a normalized Treasury bill rate, measured as the forecast long-term Canada bond yield less the typical maturity premium, because the actual short-term rate, having been kept at abnormally low levels for monetary policy purposes, is not representative of the true risk-free rate that would compensate an investor for inflation and postponing consumption.

- 12.2 Please provide the current Treasury Bill yields in the US and Canada and Ms. McShane's forecasts for both through 2015.

Response:

The 3-month Treasury Bill yield for Canada as of September 11, 2012 was 1.03%. The 3-month Treasury Bill yield for the U.S. as of September 11, 2012 was 0.10%. Ms. McShane has not forecast these yields through 2015. Based on the August 13, 2012 *Consensus Forecasts*, the 3-month Treasury Bill yield for Canada is expected to be 1.0% at the end of November 2012 and 1.2% at the end of August 2013 and the 3 month Treasury Bill yield for the U.S. is expected to be 0.1% at the end of both November 2012 and August 2013.

- 12.3 Please provide citations to any current literature that uses a market risk premium over treasury bill yields of 8.75%.

Response:

Ms. McShane is not aware of any literature that has used an 8.75% risk premium over Treasury bills. Market risk premiums are frequently expressed as long-term averages, i.e., a long-term average equity market return less a long-term average bond return. Adjustments that are



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required to take account of conditions that deviate from "average" are made afterward. For example, in the cost of capital evidence filed with the Nova Scotia Utility and Review Board in August 2012, Dr. Laurence Booth relied on a 5.5% risk premium and a 0.50 beta to develop his CAPM utility ROE, but then made two adjustments to his utility risk premium for higher than normal credit spreads and lower than normal long-term Canada bond yields. Had those adjustments been made directly to the market risk premium, the implied market risk premium over 30-year Canada bonds would have been close to 8% and the implied risk premium over Ms. McShane's normalized 2.75% short-term rate in excess of 9%.

- 12.4 Please provide the step by step calculations needed to get the fair ROEs on page 95 and indicate the estimated utility market risk premium and interest rate risk premiums.

Response:

There are no "fair ROEs" shown on page 95 of Ms. McShane's testimony. Ms. McShane estimates the fair ROE on the book value of common equity for the benchmark BC utility (FEI) at 10.5%, as shown on page 120. As stated at pages 119-120, lines 3044 to 3050:

"The fair ROE for the benchmark BC utility can be viewed as falling within a range bounded by the market-based cost of equity inclusive of the minimal allowance for financing flexibility (10.1%) at the bottom end of the range and the comparable earnings test results (11.5%) at the upper end of the range. The specific weight to be given the comparable earnings test versus the market-based tests is largely a matter of judgment. The comparable earnings test is, in my opinion, entitled to significant weight. With preponderant weight (75%) given to the market-based tests, the fair ROE for the benchmark BC utility, i.e., FEI, is approximately 10.5%."

On pages 93 to 96 is the development of one measure of the utility relative risk adjustment, which is used in combination with others, summarized in Table 31 (page 119). All of the steps to derive the relative risk adjustment, as well as the indicated interest rate risk premiums and utility risk premiums, are set out on pages 93-96. The specific references for the calculations in Table 19 are as follows:



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Columns 1 and 2:

The coefficients are found in the regressions presented in Tables 17 and 18.

Column 3:

Determined as follows:

3.90% = 10.85% - 7.0% see page 93, lines 2350 to 2355

2.50% = 9.4% - 7.0% see page 94, lines 2375 to 2378

Column 4:

Footnotes 1 and 2 to the table define the calculations of the 10.7% and 9.32% shown.

Column 5:

Defined as the values in Column (4) less the Risk-Free rate defined at line 2412 as 2.75%

7.95% = 10.7% - 2.75%

6.57% = 9.32% - 2.75%

Column 6:

Defined as the values in Column (5) divided by the market risk premium defined at line 2412 as

8.75% = (11.5% - 2.75%)

0.91 = 7.95% / 8.75%

0.75 = 6.57% / 8.75%

- 12.5 Please indicate whether Ms. McShane is aware of any literature that indicates that the correct adjustment for utility betas is towards their grand mean of about 0.55, rather than 1.0 or alternatively any literature that supports the Blume adjustment towards 1.0 for utilities.

Response:

Ms. McShane does not know to what the grand mean of 0.55 in the question refers. The only utility-specific analysis that Ms. McShane is aware of was a study by Michael J. Gombola and Douglas R. Kahl, "Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk", *Financial Management*, Autumn 1990. The study, which analyzed U.S. utility betas, showed, for the period studied, mean reversion, but suggested that the "raw" (ordinary least squares regression) betas should be adjusted toward a mean lower than the market mean of 1.0, e.g., 0.70, and the adjustment rate should be higher than the Blume rate of adjustment (0.35). This is the only study of which Ms. McShane is aware that addressed solely the



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adjustment of utility betas. Ms. McShane's adjustment was not made simply for the purpose of predicting the future "raw" (OLS regression) beta. Ms. McShane's adjustment, while consistent with the Blume adjustment, is made for purposes of more accurately estimating the expected return. The adjustment is applied in recognition that that the raw beta for utilities does not accurately reflect the empirical risk/return relationship.

12.6 Please provide the actual not adjusted betas for the Canadian utilities in the Table on page 97.

Response:

The betas in the referenced table were retrieved from the Bloomberg website as they are presented in the table. "Raw" weekly betas can be found on Schedule 14, page 3 of 6.

12.7 Please indicate the last time a Canadian utility sample had a beta of 0.65-0.70 (without BCE/Nortel).

Response:

Ms. McShane is not aware of any Canadian utility samples which have had raw betas of 0.65-0.70.



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13. Topic: DCF Estimates, pages104-106

- 13.1 Please confirm that the constant growth DCF model assumes that the growth rate goes on forever and that if this growth rate exceeds the normal GDP growth rate, then that utility eventually becomes the whole economy. If not why not.

Response:

In principle, growth in earnings/corporate profits cannot exceed, in the longer term, growth in the economy as a whole. If this were the case, earnings/corporate profits would overwhelm GDP. That does not preclude the expectation that earnings will grow faster than the economy as a whole for an extended period. Please note that, for the sample of U.S. utilities, the average of the consensus earnings forecasts is equal to the forecast growth in the economy.

- 13.2 Please indicate which growth rates Ms. McShane rejected as not satisfying the criterion that they are below the nominal growth rate in GDP.

Response:

Ms. McShane did not have a criterion that growth rates be at or below a certain level. Please refer to the response to BC Util Cust-McShane IR 1.13.1.

- 13.3 Please indicate Ms. McShane's long run growth estimates for US and Canadian GDP and whether these are different for GNP?

Response:

The forecasts of nominal GDP growth are found on Schedules 21 and 23 for the U.S. and Canada respectively. GDP is different from GNP. GDP measures the value of all goods and services produced within a country, irrespective of whether they are domestic or foreign. GNP includes the value of all goods and services produced by a country's enterprises, whether produced within that country's borders or abroad. Ms. McShane does not have forecasts of GNP growth.



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- 13.4 Please indicate the government bond yields used to estimate the historic risk premiums on page 101 (indicate the maturity and series #).

Response:

The government bond yields used on page 101 are the market yields on 30-year U.S. Treasury securities. The unique identifier used by the U.S. Federal Reserve is H15/H15/RIFLCFCY30_N.B.

- 13.5 Please provide any citations to the literature or elsewhere to support the assumption that utilities long run growth rate equals that of GDP and confirm that this assumption means they will continue their share of GDP and they are not a mature industry.

Response:

Ms. McShane does not have citations to academic literature specific to utilities. The growth component of a DCF model is intended to be an estimate of what investors expect the long-term growth to be and thus build into the prices they are willing to pay (and thus is embedded in the dividend yield component of the model). Ms. McShane's use of forecast long-term growth in the economy as a reasonable estimate of investors' expectations for long-term growth in earnings for mature industries is based on the link between corporate profits and GDP growth in the long-term. The two primary determinants of profit growth are growth in nominal GDP and unit labour costs. Nominal GDP measures the current dollar value of the goods and services produced in the economy. Simplistically, GDP less payments to labour, depreciation, plus income from abroad equals corporate profits. As long as labour costs are contained, increases in economic growth will be reflected in growth in profits. To Ms. McShane's knowledge, the conclusion that corporate profit growth will track GDP growth in the long-term is not contested. If an industry grows at the rate of the economy, then it should maintain a similar share of GDP as it has currently. If an industry is persistently growing at the rate of the economy, it would be considered a mature industry.



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As noted at page C-5, the FERC relies on GDP growth to estimate expected long-term growth in its standard DCF models for gas and oil pipelines structured as conventional corporations. The development of their model was in part validated by the valuation practices of Merrill Lynch and Prudential Securities who relied on the growth in the economy as their estimate of long-term growth for all firms, including regulated firms.

- 13.6 Please provide all the data underlying the regression results in Tables 25 and 26 so that the estimates can be replicated.

Response:

There is a typographical error in Table 26 on page 105. The Constant Growth DCF coefficient should be -0.53 as per Schedule 16, page 2 of 4.

The data required to replicate the Constant Growth and Three-Stage Growth regression results presented in Tables 25 and 26 are provided in Attachment 13.6. Please refer to the response to ICG-McShane IR 1.18 for the data underlying the Allowed ROE regression results in Tables 25 and 26.



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14. Topic: Historic Utility Risk Premiums106-110

14.1 Please confirm that experienced utility risk premiums were lower in Canada than in the US, but that Ms. McShane judges that this does not mean Canadian utilities are lower risk than US utilities.

Response:

It is confirmed. The achieved utility equity risk premium in Canada is only lower due to historically higher bond returns in Canada, not because utility equity returns were lower in Canada.

Utilities Index Return in Canada vs.	Difference in Canadian Utility Equity Return	Difference in Canadian Bond Return:		Difference in Canadian Utility Risk Premium Over:	
		Total Return	Income Return	Total Return	Income Return
S&P/ Moody's Electric	+1.1%	+1.3%	+0.7	-0.2%	-0.3%
S&P/Moody's Gas	+0.2%	+1.3%	+0.7	-1.1%	-1.2%

14.2 Please provide the data underlying Table 27 so that the results can be replicated (Excel format).

Response:

For the data underlying Table 27, please refer to the response to ICG-McShane IR 1.21.

14.3 Please confirm that the data on utility risk premiums on page 108 (6.4%-7.0%) are greater than the experienced equity market risk premium in Canada and Ms. McShane judges Canadian utilities to have greater risk than the Canadian stock market as a whole.



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Response:

Table 28, page 108 illustrates the estimated utility risk premiums at the current forecast long Canada bond yield of 4.0% recognizing the inverse relationship that exists between utility equity risk premiums and government bond yields. These risk premiums are not directly comparable to those estimated over various historic periods as presented in Schedules 10 and 18. The utility risk premiums in the U.S. are not higher than the returns on the market. While utility risk premiums were higher than market risk premiums in Canada over the longest period for which Ms. McShane has utility data, it does not follow that Ms. McShane views utilities as riskier than the market. It is clear from her CAPM analysis that she does not. Actual returns do not always comport with their relative risk.

- 14.4 Please confirm that the equation on page 110 is not from Williams but was derived by Professor Myron Gordon.

Response:

Confirmed. Ms. McShane did not state the equation was from Williams, nor was it her intention to imply that it was. She cites the quote on page 109 from Williams' text.

- 14.5 Please provide any evidence that Ms. McShane is aware of that utility analyst growth forecasts are unbiased.

Response:

Please see discussion in Appendix C, pages C-6 to C-9.

- 14.6 Please confirm that the analyst growth forecast are of earnings and not dividends as required in the Gordon (constant growth DCF) model? If not why not.



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Response:

Confirmed. As noted at page C-2 of Ms. McShane's testimony, all investor returns, including dividends, must come ultimately from earnings. The analysts' earnings growth forecast growth rates are, as indicated at page C-4, intended to represent the normalized expected growth rates in earnings over a business cycle. To Ms. McShane's knowledge, there are no consensus forecasts for long-term dividend growth rates. The earnings forecasts are routinely used as inputs for DCF estimates of the cost of equity. Please see pages 111 and C-6 through C-9.

- 14.7 Please confirm that since earnings are more unstable than dividends (like the arithmetic versus geometric comparison) the expected growth rate in dividends would be less than that for earnings even if the earnings growth rates are unbiased.

Response:

It is not confirmed. There is no evidence that analysts build year-to-year variability in earnings into their long-term growth forecasts. The earnings growth rates are intended to be a smoothed average over a business cycle, which would be in the nature of a geometric average.

- 14.8 Please indicate any US jurisdiction that has applied any weight to comparable earnings evidence and any Canadian board, other than the BCUC, that has given it any weight for the last ten years.

Response:

Ms. McShane has not surveyed all U.S. jurisdictions but does know that comparable earnings evidence was presented in Georgia in 2010 (AGL Resources) and in Wisconsin in 2009 (Wisconsin Energy Corp.). In neither instance did the regulator specify explicit weights applied to the results of particular cost of equity tests.

There have been no instances other than the BCUC where a Canadian board has given weight to the comparable earnings test in the past 10 years. Please refer to the response to BCUC IR 1.34.3 and BC Util Cust-FBCU IR 1.1.3.



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15. Topic: Floatation cost allowance

- 15.1 Please confirm that most boards allow a 0.50% flotation cost allowance, but the Régie allows only 0.30%.

Response:

Not confirmed. Please refer to the response to BCUC IR 1.78 series. It is true that in Decision D-2009-156 for Gaz Métro, the Régie established the allowance for issuance costs at 30 to 40 basis points after a review of Gaz Métro's actual equity issuance costs since 1993. However, in Décision D-2010-147 for Gazifère, the Régie noted that it did not have data on actual issuance costs for the company, as unlike Gaz Métro, Gazifère does not directly issue equity in the capital market and approved a theoretical flotation cost allowance of 50 basis points.

- 15.2 Please indicate any board that has allowed a 1.50% flotation cost allowance in Canada.

Response:

None. Please note that Ms. McShane is not recommending an adjustment for financing flexibility of 150 basis points. Please see response to BCUC IR 1.75.2.1

- 15.3 If the cost of equity capital is 10%, but a 1.50% flotation cost is allowed so the allowed ROE is 11.5% please indicate what a \$100 book value investment would sell at if this was assumed to be a perpetuity.

Response:

Theoretically, at an earnings retention rate of 30% to 40%, approximately \$125.

Attachment 6.4

FEI Free cash flow	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
(\$000s)	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Approved ¹	Approved ¹
Net Income ²	\$ 59,792	\$ 68,225	\$ 70,980	\$ 75,914	\$ 71,125	\$ 85,697	\$ 89,527	\$ 91,112	\$ 92,050	\$ 102,419	\$ 95,115	\$ 104,084	\$ 103,251	\$ 105,184
Add: Depreciation ²	\$ 58,814	\$ 68,793	\$ 70,153	\$ 71,681	\$ 77,650	\$ 77,243	\$ 82,216	\$ 77,985	\$ 77,952	\$ 79,742	\$ 99,730	\$ 103,689	\$ 112,081	\$ 117,343
Add: Amortization ²	\$ 2,997	\$ 1,099	\$ 2,463	\$ 710	\$ (417)	\$ (1,067)	\$ (1,750)	\$ (2,724)	\$ (3,076)	\$ (72)	\$ (2,572)	\$ (5,269)	\$ 11,847	\$ 25,569
Less: Net Working Capital Change	\$ (22,487)	\$ (43,549)	\$ 36,126	\$ (7,399)	\$ (29,111)	\$ (39,894)	\$ (5,638)	\$ 21,770	\$ (20,537)	\$ 41,853	\$ (23,480)	\$ 14,477	\$ 18,177	\$ (1,858)
Less: Non-CPCN Capital Expenditures ³	\$ (88,428)	\$ (72,778)	\$ (72,671)	\$ (80,591)	\$ (70,364)	\$ (75,667)	\$ (83,591)	\$ (73,158)	\$ (89,998)	\$ (90,968)	\$ (85,783)	\$ (113,838)	\$ (127,970)	\$ (127,010)
Total Free cash flow	\$ 10,688	\$ 21,790	\$ 107,051	\$ 60,315	\$ 48,883	\$ 46,312	\$ 80,764	\$ 114,985	\$ 56,391	\$ 132,974	\$ 83,010	\$ 103,143	\$ 117,386	\$ 119,228

Notes:

¹ - 2012 and 2013 amounts are those as approved through the 2012/2013 RRA (BCUC Order G-44-12) and shown on the FEI financial schedules in Section 7, Tab 7.1 of that Application

² - 2002-2011 amounts as shown in 2012 Generic Cost of Capital Proceeding Application, Appendix A, Section 8 - FEI Historical Financial Information

³ - Includes sustainment, growth and other base capital expenditures. 2000-2002 amounts as shown on Page 6.2 in FEI annual reports. 2003-2008 amounts as shown in Appendix I-1 of 2010-2011 RRA.

2009-2010 amounts as shown in Appendix D-6 of 2012-2013 RRA. 2011-2013 amounts as shown on 2012/2013 RRA approved financial schedules (G-44-12), Section 7, Tab 7.1, Schedule 42

FBC Free cash flow (\$000s)	2000 Actual	2001 Actual	2002 Actual	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Forecast ¹	2013 Forecast ¹
Net Income ²	\$ 14,422	\$ 15,827	\$ 14,630	\$ 20,250	\$ 23,585	\$ 24,380	\$ 26,684	\$ 28,143	\$ 31,001	\$ 34,499	\$ 38,293	\$ 46,268	\$ 44,028	\$ 46,439
Add: Depreciation and Amortization ²	\$ 9,620	\$ 12,695	\$ 14,344	\$ 14,637	\$ 16,817	\$ 18,840	\$ 26,746	\$ 30,949	\$ 34,016	\$ 37,376	\$ 41,771	\$ 45,349	\$ 49,387	\$ 51,382
Less: Net Working Capital Change	\$ (14,250)	\$ 5,114	\$ 13,098	\$ (1,158)	\$ (2,618)	\$ (7,534)	\$ (9,394)	\$ 11,691	\$ 8,403	\$ (6,890)	\$ 6,728	\$ (2,024)	\$ (7,024)	\$ -
Less: Capital Expenditures ³	\$ (35,601)	\$ (40,450)	\$ (79,059)	\$ (54,494)	\$ (85,887)	\$ (113,310)	\$ (109,348)	\$ (143,742)	\$ (111,579)	\$ (112,723)	\$ (142,038)	\$ (88,365)	\$ (98,160)	\$ (119,519)
Total Free cash flow	\$ (25,809)	\$ (6,814)	\$ (36,987)	\$ (20,765)	\$ (48,103)	\$ (77,624)	\$ (65,312)	\$ (72,959)	\$ (38,159)	\$ (47,738)	\$ (55,246)	\$ 1,228	\$ (11,769)	\$ (21,698)

Notes:

¹ - 2012 and 2013 amounts are representative of the most recent forecast that resulted from the 2012-2013 Revenue Requirements Decision from August 15, 2012 which are still subject to submission and approval by the Commission, therefore these amounts are preliminary in nature.

² - 2002-2011 amounts as shown in 2012 Generic Cost of Capital Proceeding Application, Appendix A, Section 8a - FBC Historical Financial Information.

³ - Includes sustainment, growth and other base capital expenditures. 2000-2004 amounts are derived from the capital expenditures shown on Forecast and Actual Additions to Plant Schedule in the respective BCUC Annual Reports. 2005-2011 amounts are derived from the capital expenditures shown on Capital Variance Analysis Schedule in the respective BCUC Annual Reports.

Attachment 11.10

REFER TO LIVE SPREADSHEET

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Attachment 13.6

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