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November 30, 2012

Via Email

Ms. Erica Hamilton  
Commission Secretary  
BC Utilities Commission  
Sixth Floor, 900 Howe Street, Box 250  
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**Re: Generic Cost of Capital Proceeding Order No. G-20-12 (Project No. 3698660)**

By Order G-84-12, the Commission established the Regulatory Timetable. As contemplated by the Regulatory Timetable, the ICG respectfully files responses to Information Request No. 1 from the British Columbia Utilities Commission and from the FortisBC Utilities.

Yours truly,

(original signed)

Robert Hobbs

cc Registered Participants

to the Industrial Customers Group

**Generic Cost of Capital Proceeding**

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**1.0 Reference: Fair Return Standard  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 7**

On page 7, Dr. Safir states that where a range of competitive returns is available for evaluation, the outcome of a “fair return” should always favour the lower range presented.

- 1.1 Would Dr. Safir please clarify if the lower range of a fair return is identical to the “lowest possible return” referred to in Ms. McShane’s evidence? (Cross-reference Exhibit B1-9, Tab F, p. 7)

**Response:**

No, it is not. A lower range, as explained in Dr. Safir’s evidence (p. 7, lines 12-22), refers to the rates of return that lie in the bottom part of the range of fair returns. It is not necessarily the lowest possible return. Moreover, it should be noted that Ms. McShane’s claim that the BCUC and NEB have rejected the selection of the lowest possible return is supported by an NEB quote that refers to the equity thickness, not rates of return. As a result, it is difficult to equate the NEB cite with support for Ms. McShane’s position that the lowest possible return within an acceptable range must be rejected.

**2.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 15**

“I have assumed that “raw” betas adjust toward industry norms over time. To reflect that trend in an empirical result, I have weighted the “raw” beta of 0.25 by 66% and the observed industry average in the Schaeffler & Weber survey, 0.58, by 34%. As a result, my adjusted beta is 0.36.” (p. 15)

- 2.1 Please explain why Dr. Safir has chosen weight of 66% for the raw beta, and 34% for the observed industry average, as opposed to others possible weights; for example, relative weighting of 50/50 or 34/66 (i.e., the inverse of the weights be used).

**Response:**

The 67/33 weighting was adopted because the raw observed beta should have a greater weight than the observed trend, as the former is derived from the most specific information on the business risk faced by particular firms most closely resembling the benchmark.<sup>1</sup> There is no particular magic to the 67/33 split and other weightings could have been applied. However, in Dr. Safir's view a weighting of over 50% should be applied to the specific information (*i.e.*, raw observed beta) in all instances, and some lessor but still significant weight should be applied to the industry averages (determined in various studies and over various time periods), as the observed industry average is a value to which raw betas should trend toward over time. Because the appropriate beta to use in the CAPM calculation should reflect both raw data and industry trends, some combination of both provides a weighted average which best fits what would be expected and faced by investors in a competitive setting. The 67/33 ratio is also consistent with the often cited articles by Marshall Blume ("On the Assessment of Risk," *Journal of Finance*, March 1971 and "Betas and Their Regression Tendencies," *Journal of Finance* June 1975.), which discussed the tendency of betas for all companies to regress towards a common value.

- 2.2 Is there a typical weighting used by analysts to adjust raw Betas? If so, are the weights used by Dr. Safir to adjust the Beta (*i.e.*, two-thirds for the raw Beta and one-third for the long-term trend) similar to the typical weights used by analysts when adjusting raw Betas?

**Response:**

Dr. Safir believes it is typically the case that more weight is given to the raw beta than to the long-term trend, and that the weight given to the long-term trend is a significant one. Dr. Safir is not certain that the specific percentage he employed is the "typical" one in this regard, meaning that it is the one used most often. However, the adjustment suggested by Marshall Blume, in his scholarly articles regarding the tendency of betas for the collective market as a whole to move towards 1, is that a weight of 67% for the raw beta and 33% for the trend would provide a more accurate long term beta calculation in most instances than a raw beta alone. Dr. Safir would also point out that Value Line, Merrill Lynch, and Bloomberg all report adjusted betas, where the adjustment mechanism is approximately two thirds of the raw beta plus 1/3.

- 2.3 To what extent does the long-run market tendency Beta of 0.58 reflective of

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<sup>1</sup> Please note that when Dr. Safir reported his weights as 66% and 34%, he was accidentally misreporting the decimal equivalents of 2/3 and 1/3. In fact, Dr. Safir's weights were 67% (66.66%) and 33% (33.33%).

Canadian data? In particular, how many Canadian utilities were included in each of the 11 “beta” studies undertaken with North American industry data?

**Response:**

To the best of Dr. Safir’s knowledge, most of the utilities included in the beta studies were U.S. utilities. (Please see the response to BCUC IR 6.1.) Please note that, to the extent Canadian utilities are relatively less risky than U.S. counterparts, the use of 0.58 as a long-term trend will tend to overstate the CAPM ROE result.

2.4 Is Dr. Safir aware of studies analyzing Canadian utility betas specifically? If so, what were the beta estimates? Please provide the referenced studies.

**Response:**

It is Dr. Safir’s understanding that Dr. Booth’s study of Canadian raw betas in this proceeding would put the current average at around 0.30. (*Evidence of Dr. Laurence Booth*, November 2012, Appendix C, “Relative Risk Assessment for a Benchmark Utility.”) The study undertaken by Ms. McShane in this proceeding indicates that, as of the end of 2011, the average raw beta for her Canadian utility sample is approximately 0.20. (*Evidence of Ms. Kathleen C. McShane*, August 2012, Schedule 14, pp.1-3.) In comparison, my own average estimate for a raw Canadian utility beta as of October 2012 is about 0.20. (*Prepared Evidence of Dr. Andrew Safir*, November 5, 2012, Attachment B, Schedule 1.) In addition Dr. Safir is aware that parties to utility rate regulation proceedings in other Provinces and at the NEB routinely do studies of beta. For example, beta estimates for Alberta utilities reported in the 2011 proceeding, which set the generic cost of capital for utilities in that Province, ranged from 0.45 to 0.70 (AUC, Decision 2011-474, 2011 Generic Cost of Capital, Dec. 8, 2011, Table 2, p. 8). Dr. Safir does not have access to the individual studies which generated these beta estimates.

**3.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 16-17**

On page 16, Dr. Safir states: “I have used 5% to reflect the marginally higher costs that would be faced by Canadian issuers either crossing the border to utilize the U.S. market or in issuing in the smaller Canadian capital market.”

3.1 Please discuss the derivation of the 5% flotation cost for Canadian issuers.

**Response:**

Flotation costs arise from the transactional requirements for issuing equity in capital markets.

These costs include expenses such as underwriting fees, legal fees and registration fees. Companies must consider the impact of these fees when calculating the cost of capital. Typically they are added to the required return on equity for utilities, since the opportunity cost implicit in any stock issue will be less than a fair return if these costs are ignored.

As indicated in his evidence (pp. 15-17), Dr. Safir relied in part on an analysis performed by the California State Board of Equalization, which used 4.5% as the basis for its flotation cost adjustment. Dr. Safir notes that the specific flotation cost adjustment to his ROE estimates depends on the estimated ROE itself. As a result, in Dr. Safir's analysis, the estimated flotation costs, depending on whether a CAPM or DCF ROE was being estimated for Canada or the U.S., ranged from 32 to 47 basis points. These estimated additions to the ROEs are consistent with findings in other recent cost of capital proceedings in Canada. For example, in its 2004, 2009 and 2011 Generic Cost of Capital proceedings, Alberta accepted flotation costs of 50 basis points. Similarly, New Brunswick accepted a flotation cost adjustment of 50 basis points in 2010, while Gaz Metro adopted a range between 30 and 40 basis points in 2011.

In Footnote 13 on page 17, Dr. Safir states: "The assumption of flotation costs explicitly assumes that these costs are not part of the utility's cost of service."

- 3.2 Assuming that the allowed ROE is included in the utility's cost of service, and if the flotation costs are included in the allowed ROE, then aren't the flotation costs by definition included in the cost of service? In the alternative, what conditions have to hold for the flotation costs not to be included in the utilities cost of service? Please discuss.

**Response:**

Dr. Safir's testimony was probably less than clear in this regard. He meant to indicate that flotation costs are not usually explicitly noted as a component of the cost of service. As a result, where they exist, they can be accounted for as a component of the ROE, as they are legitimate costs for which a utility is entitled to recover. However, if flotation costs are included separately in the cost of service of the utility, it would not be relevant to increase a firm's ROE by this factor.

- 3.3 If flotation costs are included in a utility's cost of service, would it still be relevant to increase a firm's ROE by this factor? Please discuss.

**Response:**

No. See previous response (BCUC IR 3.2).

**4.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 12-13  
Canadian CAPM Equity Return Estimate**

Dr. Safir provides its Canadian CAPM equity return estimate in Table 1 on page 12 of his prepared evidence.

Risk-free rate ( $R_f$ )		4.00%
Market Risk Premium (MRP)		5.96%
Annual Total Market Return (1924-2010)	11.66%	
Est. Annual Long Bond Income Return (1924-2010)	5.70%	
Adjusted Beta [ $B_r^*(0.67) + B_l^*(0.33)$ ]		0.36
Recon calculated "raw" beta ( $B_r$ )	0.25	
Long run market tendency beta ( $B_l$ )	0.58	
Utility Risk Premium ( $B^*MRP$ )		2.15%
Unadjusted Cost of Equity ( $K_e = R_f + B^*MRP$ )		6.15%
Flotation Cost (FC)	5.00%	
Flotation Cost Allowance [ $FCA = K_e(FC/(1-FC))$ ]		0.32%
Cost of Equity = ( $K_e = R_f + B^*MRP$ ) + FCA =		6.47%

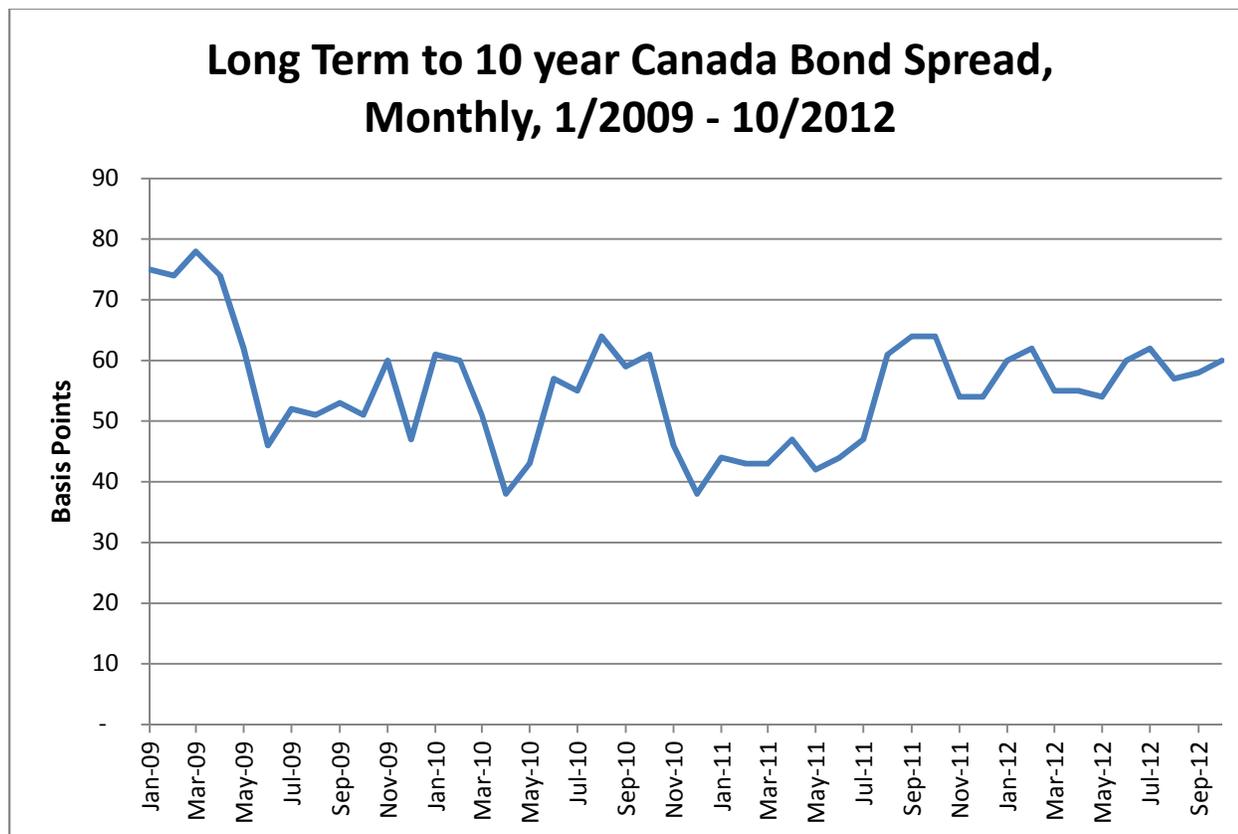
4.1 On page 11, Dr. Safir says that "The risk free rate can be represented by the forecasted rate on the Canadian Long Bond." In Table 1 he shows the risk-free rate as being at 4.00%. Please provide the forecast(s) on which he bases the 4.00% risk-free rate and explain any adjustments he made to the forecasts to derive his 4% risk-free rate. What is the current range of forecast rates on the Canadian Long Canada Bond?

**Response:**

Dr. Safir's opinion regarding the appropriate risk free rate to use in his CAPM calculation is based on the forecasted rate for Canadian 10 year bonds and the anticipated spread between the 10 and 30 year bond rates over the next 5 years. The 5 year forecast information was taken from the updated economic and fiscal projections put out by the Canadian Department of Finance in October 2012. This rate was approximately 3.5%.<sup>2</sup> The spread between 10 year and 30 year Canadian bonds has been roughly 60 basis points over the past year, and since 2009 this differential has been relatively constant. (See Figure 1.) As a result, over the near future, a reasonable forecast for the Canadian long bond would be approximately 4%, which Dr. Safir used in his calculation. It should be noted that Dr. Safir used 5 years of forecast data

<sup>2</sup> See "Backgrounder: Results of the Department of Finance's October 2012 Survey of Private Sector Economists," Department of Finance, Canada." ([http://www.fin.gc.ca/n12/data/12-134\\_1-eng.asp](http://www.fin.gc.ca/n12/data/12-134_1-eng.asp)) [See Attachment to BCUC IR 4.1]

to develop his average in order to properly discount the impact of U.S. monetary policy which has artificially lowered the current yield on long bonds in both the U.S. and Canada and is expected to do so in the near-term future. In Dr. Safir’s view this impact should have less weight in calculation of a forecasted long term risk free rate as it is not a sustainable or market driven outcome which is reflective of risk free conditions. Most analysts reduce the estimated impact of current U.S. Federal Reserve actions (*i.e.*, Quantitative Easing) after 2014.



**Figure 1**

Dr. Safir is aware of the average private sector forecast survey of 10 year government bond rates compiled by the Canadian Department of Finance in October 2012. This survey projected rates of 2.2% in 2013, 2.9% in 2014, 3.5% in 2015, 4.2% in 2016, and 4.7% in 2017. Dr. Safir is also aware of a forecast by BMO Capital Markets Economics in November 2012 of 1.91% in 2013 and 2.76% in 2014. Dr. Safir also notes that Ms. McShane reported that Consensus Economics (April 2012) forecasted 10 year Canadian Government bond yields to be 3.6% in 2014 and 4.2% in 2015.

On page 13, Dr. Safir states that he used the ratio of the long-term total bond return and a total bond income return based on U.S. data to adjust the average total Canadian bond return.

4.2 Please provide, in tabular format and in a working spreadsheet, the US and

Canada data series used in Dr. Safir's calculation.

**Response:**

See "Attachment to BCUC IR 4.1.xlsx"

Please identify the actual averages of the U.S. long bond total return and income return for the period used in his calculation.

**Response:**

See "Attachment to BCUC IR 4.1.xlsx"

**5.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 13-14  
Calculation of the Raw Beta**

On page 13, Dr. Safir states that "The "raw" beta was calculated by regressing the annual return to each of 5 Canadian companies sharing general characteristics of an appropriate Canadian benchmark (including metrics of the actual benchmark chosen) against market returns as a whole using a 60 month time series to calculate each annual data point from 2008 through October, 2012."

On page 14, he identifies the five companies he used in his calculation, and notes in footnote 10 at the bottom of page 14 that this is the same set of companies used by Ms. McShane in her Canadian analysis.

- 5.1 What were the general characteristics and metrics used in selecting the 5 Canadian companies used? To what extent, if at all, was the fact that Ms. McShane used the same set of companies a consideration for Dr. Safir in selecting the sample companies?

**Response:**

Dr. Safir reviewed Ms. McShane's screening criteria for the selection of Canadian companies and believed it was appropriate. Dr. Safir also notes that the universe of Canadian companies for which to calculate betas in determining a utility ROE is not that large to begin with.

- 5.2 Why was the 60-month period from 2008 to October 2012 selected as the appropriate time period to use for calculating the raw beta?

**Response:**

Although there is no economically correct time span over which to calculate a beta, it is not uncommon among economists and financial analysts to use a 60 month period in estimating beta. For example, Yahoo Finance reports betas calculated over a 60 month interval, while Morningstar calculates them over a 36 month period. However, some analysts, such as Bloomberg or Value Line, calculate betas based on weekly returns and for periods that may range between two to five years. Dr. Safir believes that five years is long enough to capture the financial fundamentals of the firm, but not so long as to be unable to form a basis for an estimate of what future risk will be.

**6.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 13-14; Exhibit A2-29  
Calculation of the Raw Beta**

On page 15, Dr. Safir states that "...as an empirical matter, a wide range of "beta" studies – at least 11 of them – undertaken with North American industry data suggest that utility "betas" have ranged from 0.35 to 0.77 over the past 40 years, with an average value of 0.58."

In footnote 11, Dr. Safir identifies a June 2012 study by S. Schaeffler and C. Weber titled "The Cost of Equity of Network Operators – Empirical Evidence and Regulatory Practice." (Exhibit A2-29)

6.1 For each of the values used to calculate the average value of 0.58, please identify the specific study, and the value adopted from the study, and whether or not the data used in the study applied to U.S. utilities, Canadian utilities or both.

**Response:**

The table below identifies the specific studies utilized to derive the average Beta of 0.58, the average Beta provided by each study, and the national origin of the companies studied to the extent this information is available within the Schaeffler and Weber article. Dr. Safir has not reviewed the underlying studies themselves.

	Author	Companies analyzed	Time	Beta
1	Pettway (1978)	36 US electric utilities	1971-1976	0.50
2	Hagerman and Ratchford (1978)	Value Line Investment Survey, 89 utilities companies, questionnaires	1975	0.69
3	Clarke (1980)	50 US electric utilities	1965-1974	0.62
4	Bower et al. (1984)	77 US electric and 25 US gas utilities	1971-1979	0.68
5	Conine and Tamarkin (1985)	60 US electric utilities	1971-1980	0.77
6	Norton (1985)	CRSP, 21 regulated companies	1975	0.63
7	Fraser et al. (1986)	86 US electric utilities	1974-1983	0.35
8	Golec (1990)	79 US electric utilities	1969-1983	0.36
9	Gombola and Kahl (1990)	61 US electric and 48 US gas utilities	1967-1981	0.52
10	Riddick (1993)	Electric and gas distribution utilities on CRSP tapes	1965-1986	0.53
11	Lally (2005)	64 US electric and 29 US gas utilities	1999-2003	0.75
	Average			0.58

While no study apparently utilized Canadian data, Dr. Safir is of the view that these results are applicable to Canadian utilities as the economic environment within which all these utilities raise capital is similar and regulation in both Canada and the U.S. is somewhat similar. As a result, the general risks faced by the Canadian utility sector on a long term trend basis are similar to that faced by utilities in the U.S. as well.

- 6.2 The dates of the studies cited in the Schaeffler and Weber paper (Table 1), appear to range from 1954-57 for the earliest study reviewed to 2004-2009. Does Dr. Safir note any trend in the value of the betas over time, such that earlier studies should be rejected from his sample used to calculate his average value of 0.58?

**Response:**

Dr. Safir has plotted the average betas for each survey by survey beginning date and by survey end date and has found no discernable trend in the value of the betas, as derived in these

studies, over time. (See Figures 2 and 3.) As a result, he does not believe that any studies he has used should be rejected from his sample.

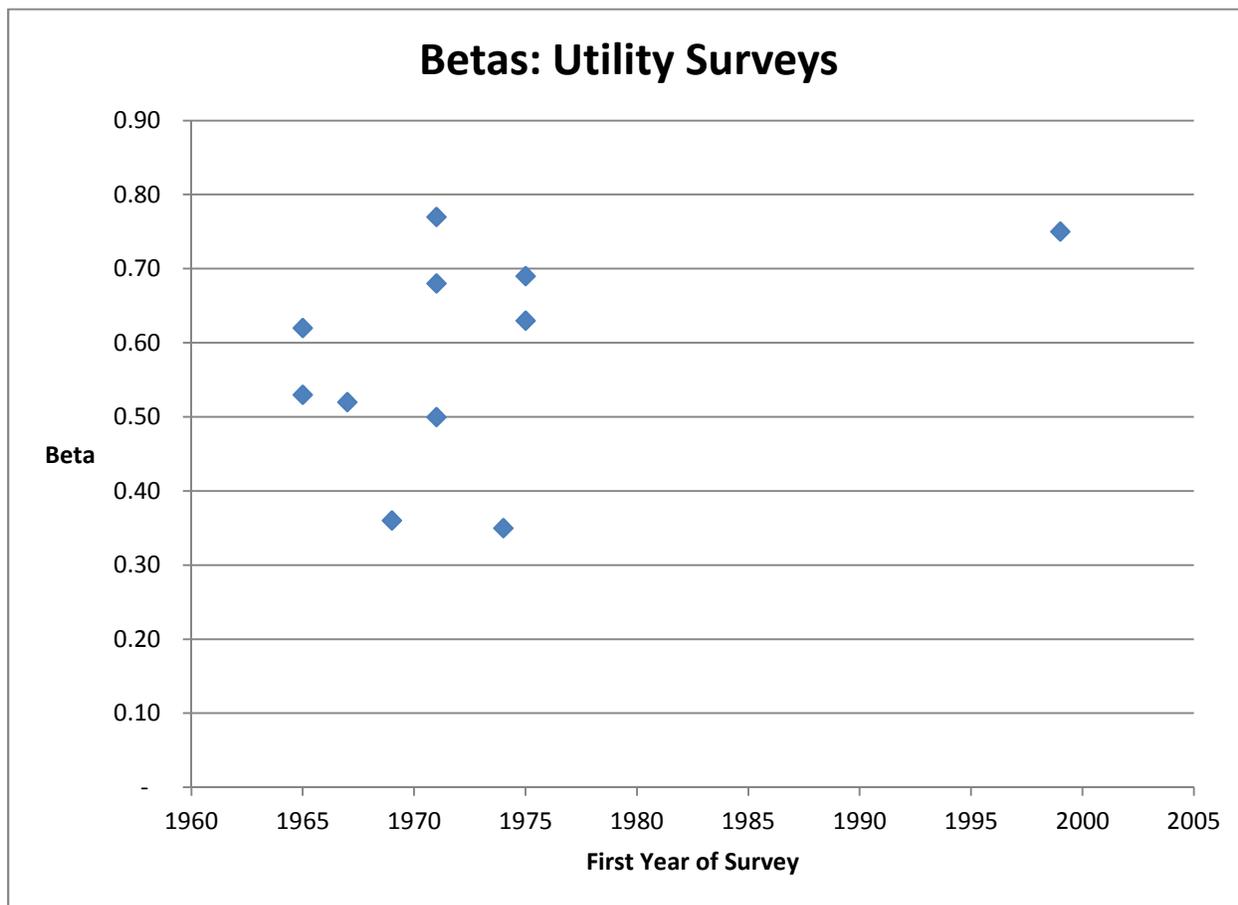


Figure 2

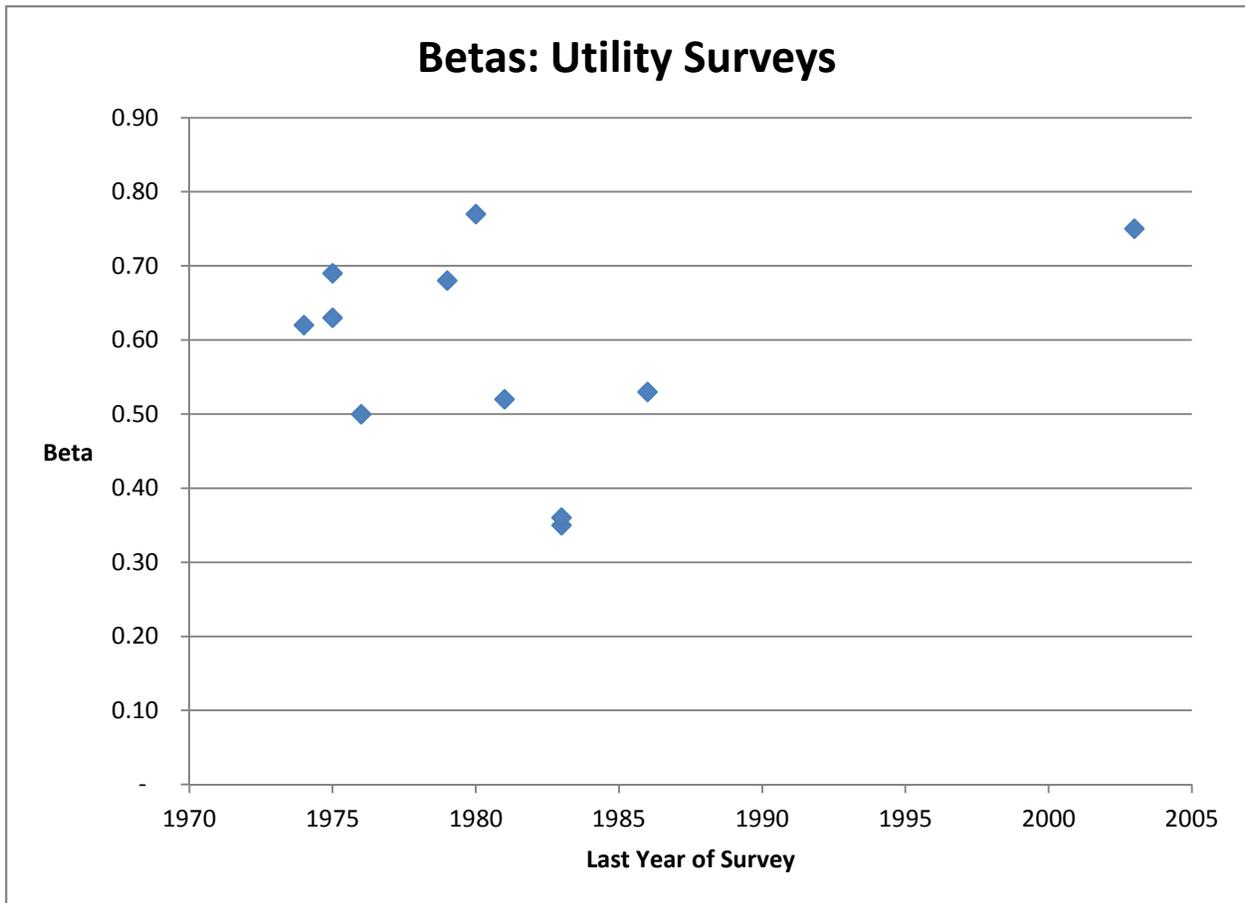


Figure 3

**7.0 Reference: Capital Asset Pricing Model  
Exhibit B4-9, Evidence of Dr. Andrew Safir, pp. 14-15; Exhibit A2-27,  
Cost of Capital by Sector  
Beta Estimates**

On pages 14 and 15, Dr. Safir estimates the “raw” beta of 0.25 from a sample of five Canadian utilities, used the North American industry data average value of 0.58 and made the assumption that the “raw” betas adjust toward industry norms over time. Dr. Safir adopted the adjusted beta of 0.36.

According to the database compiled by Aswath Damodaran based on the Value Line database (Exhibit A2-27), the betas for the electric utility range from 0.70 to 0.75, whereas the industry beta for natural gas utility is 0.66.

7.1 Is the industry average in the Schaeffler & Weber survey based on natural gas utilities only? If not, please describe what utilities are included.

**Response:**

The Schaeffler and Weber survey is not based just on natural gas utilities. Electric utilities are also included. [ See also Table 1 in IR response #6.1] However, Dr. Safir does not have the underlying data used in the individual studies cited in this survey article. As a result, he does not know which specific utilities were included in each study undertaken. It should also be noted that the betas reported by Value Line are generally adjusted data. As a result, it would not be surprising that the betas reported by Aswath Damodaran would be larger than the industry averages calculated from the Schaeffler & Weber survey.

**8.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 16; Exhibit A2-28  
Flotation Costs**

On page 16, Dr. Safir states that “A recent study by the California State Board of Equalization has surveyed flotation costs for “A” and “B” rated U.S. natural gas distribution companies and determined that these costs were approximately 4.5% of the recommended rate of return.”

In footnote 12, Dr. Safir cites a 2012 Capitalization Rate Study by David Gau and John Thompson, and specifically the Flotation Cost Adjustment Table. (Exhibit A2-28)

8.1 Can Dr. Safir confirm that the flotation cost adjustment appears to be independent of the company rating? If so, can Dr. Safir say whether or not this result is consistent with financial theory?

**Response:**

Dr. Safir has not undertaken a study to determine if flotation costs vary with company ratings. However, financial theory would suggest that within a broad mid-range of ratings, it is unlikely that this is the case. Flotation costs are transaction expenses related to selling stock. Regardless of a stock’s rating, sales costs should be relatively constant, because the same due diligence, legal and printing fees will be incurred regardless of price. It is certainly true that there could be economies of scale in larger issues of stock verses smaller issues, such that larger transactions entail a lower percentage of flotation costs in relation to funds generated. However, Dr. Safir has not studied whether “A” rated companies typically issue larger stock offerings than “B” rated companies. It should also be noted that companies at the far ends of financial ratings may well have different transactional cost requirements. It may simply require more due diligence for example, to bring to market a stock in a company of questionable economic viability than one well known and already held in major portfolios.

**9.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 18**

## Canadian CAPM Equity Return Estimate

Dr. Safir provides its U.S. CAPM equity return estimate in Table 2 on page 18 of his prepared evidence. Dr. Safir states, in footnote 14 of page 18, that he “included eighteen companies, the twelve utilities Ms. McShane used, plus six additional utilities.”

- 9.1 Please list the names of the six utilities that were added to the twelve utilities Ms. McShane used.

### **Response:**

The six additional utilities are: The Laclede Group Inc, New Jersey Resources Corp, NiSource Inc, South Jersey Industries Inc, Southwest Gas Corp. and Spectra Energy Corp.

- 9.2 On what basis has Dr. Safir chosen to add these six utilities? Please explain.

### **Response:**

Dr. Safir believes that these utilities are also characteristic of the other U.S. utilities in Ms. McShane’s sample and thus would have the potential to provide additional economic information.

- 9.3 Please explain the impact of adding these six utilities on the U.S. CAPM equity return estimate.

### **Response:**

The addition of these six utilities had virtually no effect on Dr. Safir’s estimation of the U.S. CAPM ROE. When all 18 utilities were used, Dr. Safir’s average beta was 0.432. Upon removal of the six additional utilities, the average beta becomes 0.429.

## **10.0 Reference: Capital Asset Pricing Model Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 18-19 Relative Business Risk**

On pages 18 and 19, Dr. Safir states that “As might be expected, however, given that the business risk faced by U.S. utilities is somewhat greater than that faced in Canada, the overall CAPM estimate is a bit higher, at about 8.1%.”

- 10.1 On what does Dr. Safir base his opinion that the business risk faced by U.S.

utilities is greater than that faced in Canada? Are there specific factors that increase the business risk of U.S. utilities or, conversely, decrease the relative business risk of Canadian utilities?

**Response:**

There are a number of factors that suggest the business risk faced by U.S. utilities is higher than that faced by Canadian utilities. In the first instance, while the regulatory structure between the countries is somewhat similar, U.S. utilities are much more exposed to actual competitive forces than are Canadian utilities. There are few if any balancing accounts in the United States at the federal level. While these exist at the state level to various degrees, regulators have often disallowed some of the costs they contain. Despite regulatory oversight in the United States, utilities have been allowed to go bankrupt from time to time. This is not a feature of the Canadian utility experience. Moreover, as Dr. Safir has indicated in testimony before the AUC and NEB in past proceedings, the variance between the allowed and actual utility returns is substantially wider in the U.S. than in Canada, indicating a greater uncertainty for investors and hence a higher level of business risk.<sup>3</sup>

**11.0 Reference: Capital Asset Pricing Model  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 20  
Estimated Market Risk Premium**

Dr. Safir states that “[he has] estimated a market risk premium on average between my U.S. and Canadian data sets of about 6.2%.”

11.1 Please confirm that the 6.2% is the result of the weighted average between the U.S. and Canadian data sets, giving one-third of the weight to U.S. data and two-thirds to Canadian data.

**Response:**

Confirmed.

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<sup>3</sup> See, for example, Written Evidence of Dr. Andrew Safir on behalf of the Canadian Association of Petroleum Producers regarding business risks faced by Alberta utilities in the Generic Cost of Capital hearing before the Alberta Utilities Commission, Application No. 1578571, Proceeding ID. 85, March, 2009; Written Evidence of Dr. Andrew Safir on behalf of the Canadian Association of Petroleum Producers regarding business risks faced by Trans-Québec Maritimes Pipeline before the National Energy Board of Canada, June, 2008 (RH-1-2008); Written Evidence of Dr. Andrew Safir on Behalf of the Canadian Association of Petroleum Producers before the National Energy Board regarding TransCanada PipeLines Limited Mainline 2004 Tolls Application (Phase 2, Cost of Capital), October 2004, (RH-2-2004).

**12.0 Reference: Discounted Cash Flow Estimates  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 24-25  
Short-Term Growth Factor**

On pages 24 and 25 Dr. Safir states: “I based my estimates of short-term growth on analysts’ projections of the future growth in the company.<sup>17</sup>”

In footnote 17 on page 25, he states that his source for his data was Yahoo Finance and indicates that Thomson Reuters, which provides the projections to Yahoo Finance, collects its data in a manner similar to how Value Line and other business information companies gather projections for future growth.

12.1 Does Dr. Safir know whether or not the growth projections he obtained from Yahoo Finance are similar or not to those that would have been obtained from Value Line or other sources? If so, please describe the difference between the growth projection he used and those others he is aware of.

**Response:**

Dr. Safir did not have the growth projections from Value Line over the same time period for which he obtained Yahoo Finance projections. As a result, he is unable to make a comparison.

**13.0 Reference: Discounted Cash Flow Estimates  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 25  
DCF Model**

On page 25, Dr. Safir states that once he obtained the two separate estimates for short-term growth based on analysts’ estimates and long-term growth based on expectations of growth for the overall economy, in particular, GDP growth “...I calculated a weighted average of the two to establish a weighted average growth rate. I weighted analysts’ estimates of company growth by 33%, and estimates of GDP growth by 67%.”

13.1 Since the discounting process tends to weight near term values more heavily than long term values, why did Dr. Safir chose to first calculate a weighted average and then use the weighted average in the DCF formula, rather than using a two period model that uses the short-term growth in the first period and the long-term growth in the second period?

**Response:**

Although there are several other ways to estimate the DCF ROE, Dr. Safir believes that his method of using a weighted average, rather than a two period model, still provides an economically reasonable estimate.

- 13.2 Would the Dr. Safir's method tend to under-weight the near-term growth and over-weight the long-term growth rate, relative to a two period model? Why or why not?

**Response:**

No. Dr. Safir does not believe this statement to be accurate. In instances where near-term growth is greater than long-term growth, under-weighting the near-term growth implies that the ROE is lower than it would otherwise be (without the under-weighting). This is because the estimated ROE is directly related to changes in the overall weighted average growth rate. However, the empirical outcome of Dr. Safir's DCF methodology, compared to the results of the two period model, depends on the magnitude of short-term growth estimates relative to long-term growth estimates, the level of the dividend, and the number of assumed years for short-term growth in the two period model. As a result, there is no direct tendency of Dr. Safir's methodology to under-weigh near term growth, relative to the alternative two period model.

**14.0 Reference: Discounted Cash Flow Estimates  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 25-28  
DCF Cost of Equity for Sample of U.S. Utilities**

On page 25, Dr. Safir states that "I weighted analysts' estimates of company growth by 33%, and estimates of GDP growth by 67%." On pages 27-28, he states: "By relying exclusively on company growth larger than the economy, the implications is that company size would one day exceed the level of the entire economy, of which it is only a part. Of course, this could not occur. As a result, I combine analysts' company specific predictions, weighing them at 33%, with longer term estimates of overall (GDP) growth. I believe this is a more economically reasonable estimate of the growth rate that would be applicable to the appreciation of the dividend payments."

- 14.1 Is the choice of 33% as the weight to apply to the analysts' estimates and 66% as the weight for GDP growth estimates based on reasons that lead to those specific weights, or are those weights simply ballparks reflecting Dr. Safir's judgment that GDP growth is relatively more important than the analysts' estimates? Please explain.

**Response:**

Dr. Safir's choice of weights is intended to reflect Dr. Safir's judgment that GDP growth projections are more likely to reflect long-term growth realities than are analysts' estimates.

- 14.2 With respect to Table 3 on page 26 where the DCF results are shown, Dr. Safir says that "...I believe an economically appropriate manner in which to account for the U.S. results is to include it in an overall average but weighted at 33%.

Please explain the rationale for the weighting of the Canadian sample of 67 percent and the US sample by 33 percent.

**Response:**

As in 14.1, the choice of weights reflects Dr. Safir's judgment.

**15.0 Reference: Discounted Cash Flow Estimates  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 22 - 28  
DCF Cost of Equity for Sample of U.S. Utilities**

"The analysts' forecasts that I and Ms. McShane use are company specific and tend to be biased towards expectations of growth over the more immediate future. In addition, analysts' forecasts tend to be relatively higher, higher even than expectations for future growth for the entire economy." (p. 27)

- 15.1 Please discuss why analysts' forecasts tend to be relatively higher in general. Please provide the evidence or studies, if any, that support the statement.

**Response:**

The tendency for an upward bias in analysts' reviews has been discussed in business literature for some time. For example, it is understood that analysts having relationships with underwriters representing specific stocks tend to issue relatively optimistic reports on these issues, simply because they have an economic incentive to do so. However, reporting bias has also been attributed to the incentive to cultivate management relations and continue to obtain better analyst access. Optimistic analysts' evaluations can also be generated by selection bias, as many analysts choose to report forecasts and recommendations more often when they have a favorable view of a stock than when they have a negative one. As a result, poorly performing stocks often receive less coverage. At least one academic survey suggests that reporting is also slower when negative assessments are involved. For example, McNichols and O'Brien have found that the median number of days between upgrade ratings of a stock was 98. In contrast,

the number of days between downgrades was 127.<sup>4</sup> (See Response to BCUC IR 15.1)

It should be noted that regardless of whether there is an upward bias in analysts' forecasts, company growth specific growth projections that exceed the expected long-term growth rate of the economy as a whole pose an economic conundrum in estimating the DCF model. In particular, the simplified DCF model incorporates a growth rate that essentially continues in perpetuity. If the company specific growth rates exceed the projections for the overall economy, this implies that the company would eventually account for all economic activity.

**16.0 Reference: Discounted Cash Flow Estimates  
Exhibit C4-9, Evidence of Dr. Andrew Safir, pp. 22 - 28; Exhibit B1-20,  
BCUC IR 1.73.5; Exhibit B1-24, BCUC IR 2.176.7  
DCF Cost of Equity for Sample of U.S. Utilities**

The FBCU's response to BCUC IR No. 1, on page 162 provides a response from Ms. McShane stating "As regards the Canadian utilities, the difference in the cost of long-term debt between the holding companies and the operating subsidiaries has been approximately 35 basis points on average since the beginning of 2010. The only test performed by Ms. McShane that explicitly relies on the cost of equity for the Canadian utility holding companies is the DCF test; the weight given to the DCF test applied to Canadian utilities is relatively small. If the holding companies' higher credit risk were to be considered a proxy for potentially higher overall equity risk, Ms. McShane's overall results would change by less than 10 basis points, too small a difference to change the recommendation."

The FBCU were also asked about the difference between holding companies and their associated operating companies in the U.S. in BCUC IR No. 2 pages 57 and 58. Ms. McShane responded that "to the extent that the operating companies have higher ratings than the holding companies, it would be reasonable to conclude that there are higher spreads associated with lower credit ratings."

16.1 Please discuss the differences in risk and cost of equity between the publicly traded holding companies used in the DCF cost of equity estimate and their associated non-publicly traded operating companies.

**Response:**

Dr. Safir has not conducted a systematic study of the differences in risk and cost of equity between the publicly traded holding companies used in the DCF cost of equity estimates and

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<sup>4</sup> McNichols & O'Brien, "Self Selection and Analyst Coverage," *Journal of Accounting Research*, 1997, p. 184.

their associated non-publicly traded subsidiaries. However, he notes that, *a priori*, there could be factors that cause a holding company to face either less or more risk than its subsidiaries. For example, a holding company may own a portfolio of utilities and thus reap a benefit from diversification. Alternatively, a holding company, in addition to owning utilities, may also possess non-utility investments which are significantly risky such that the holding company faces more risk than its utility subsidiaries.

**17.0 Reference: Discounted Cash Flow Estimates  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 27  
DCF Calculations**

On page 27, Dr. Safir discusses the differences between his use of the DCF model and that of Ms. McShane, and in particular their use of short term growth estimates.

17.1 If Dr. Safir had used a two period DCF model that uses the short-term growth in the first period and the long-term growth in the second period, would that have approximated the method used by Ms. McShane when she combined analysts' projections and long-term GDP growth estimates? Please explain.

**Response:**

In compiling her DCF model with respect to Canadian utilities, Ms. McShane presented two variants. The first version (McShane Schedule 22) simply added the expected dividend yield to analysts' growth forecasts. The second version (McShane Schedule 23) was a three stage model. In that version, analysts' projections were applied to the current dividend for an initial 5 year period, followed by another 5 year period where the same analyst's projections were averaged with long-term GDP growth estimates and applied to the dividend. From the 11<sup>th</sup> year on, dividends were expected to grow at the projected GDP growth rate. This approach is similar to the method used by Dr. Safir. However, in lieu of a two stage model, which would involve 5 years of growth at a short term rate, based on analysts' expectations, followed by the remaining years with growth at the anticipated long term rate, proxied by GDP growth, Dr. Safir simply took a weighted average of these short-term and long-term growth rates. Table 2 compares Ms. McShane's three stage model results to Dr. Safir's weighted average results, as presented in his evidence. In addition, the final column indicates what Dr. Safir's results would have been if a two stage model had been used.

Table 2			
	Ms. McShane	Dr. Safir	
	3 Stage Model	Evidence Model	2 Stage Model
Canadian Utilities Limited	7.18%	8.32%	7.82%
Emera Inc.	9.00%	9.02%	8.97%
Enbridge Inc.	8.58%	10.04%	8.88%
Fortis Inc.	8.67%	8.06%	8.28%
TransCanada Corp.	9.54%	9.53%	9.33%
Average	8.59%	8.99%	8.65%
Median	8.67%	9.02%	8.88%

**18.0 Reference: Comparable Earnings  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 28  
Canadian Comparables**

In Footnote 19 on page 28, Dr. Safir explains that he started with the same sample of companies that Ms. McShane used in her cost of capital evidence but that he excluded five companies that reported negative income, in addition to excluding three other companies for which he was unable to find the relevant data.

18.1 Please explain why Dr. Safir excluded the five companies that reported negative income which Ms. McShane included.

**Response:**

The sample of comparable companies is constructed to be of similar business risk to Canadian utilities. Among Canadian utilities, occasions of negative earnings are relatively rare. Also, negative reported incomes could be a sign of higher risk or of some unusual occurrence that would not be relevant to a typical Canadian utility. Thus, companies reporting negative incomes were excluded from the sample of comparable companies in order to make the sample more comparable in terms of business risk to Canadian utilities.

18.2 What is the impact of excluding those five companies on the Canadian Comparable Earnings equity return estimate?

**Response:**

Dr. Safir did not collect all the data for companies with negative reported income. Thus, he did not perform comparable earnings analysis with those five companies included and, as a result,

has not analyzed the impact of excluding those companies.

**19.0 Reference: Comparable Earnings  
Exhibit B4-9, Evidence of Dr. Andrew Safir, pp. 30-31  
Market-based Value versus Book Value**

On page 30, Dr. Safir describes his calculation of comparable earnings based on net income or net earnings, average number of shares and the closing price per share for each year.

19.1 Does Dr. Safir agree that one of the steps in the generally accepted approach in the Comparable Earnings test is the calculation of the average accounting return on book equity over an appropriate time period? If not, why not?

**Response:**

Dr. Safir agrees that where the comparable earnings test is applied, comparable earnings are most often calculated as the average accounting return on book equity. However, while this calculation is presented most often, Dr. Safir does not believe that it is necessarily generally accepted. Because such a calculation most often tends to overstate competitive returns on equity faced by investors, most regulators give little or no weight to the comparable earnings test when evaluating the appropriate equity return to regulated entities.

19.2 Does Dr. Safir consider his approach a fourth approach distinct from the traditional approach of comparable earnings?

**Response:**

No. Dr. Safir considers it the economically preferable way of using comparable firm earnings to establish a regulated return on equity. From an economic standpoint, any comparable earnings analysis is undertaken to measure what a regulated company would earn if it invested in comparable companies in a competitive equity market. As such, it is essentially the opportunity cost of investing in the utility. The comparable earnings approach, as calculated by Dr. Safir, measures this same opportunity cost in a way that more accurately reflects the current equity market conditions that the utility would actually face when acquiring equity in today's market. Thus, it is not a distinctly different or new approach toward the estimation of comparable earnings, but only a variant of the "traditional" one, albeit a variant that better utilizes current market information.

The only difference in the calculation of a comparable earnings estimate between the "traditional" method and the approach used by Dr. Safir is the substitution of market equity for

book equity in the denominator of the return on equity calculation. Dr. Safir's method and the "traditional" methodology for a comparable earnings calculation both employ a mechanism for choosing a reasonable sample of comparable non-regulated companies (delineated by some assessment of size, location, business risk, etc.), and both approaches use some measure of net income from company specific financial data. Consequently Dr. Safir's approach is simply a variant of the comparable earnings approach.

On page 32, Dr. Safir states that "Others agree with the view that using book-value- or accounting-based measures to calculate the cost of capital is not ideal. A Brattle Group presentation given in July of this year points out one of the weaknesses of the Comparable Earnings model is that it is "not market-based, and subject to a number of problems due to its reliance on accounting measures of return." Others have criticized CE because "The cost of equity is set in the stock market, but the comparable earnings method does not look to market data." Thus, using market value of stocks rather than book value should address this criticism."

19.3 If analysts agree that using book value is not ideal to calculate the cost of capital, please explain why the method proposed by Dr. Safir of using the market value of stocks is not more widely used and adopted.

**Response:**

From an economic standpoint, Dr. Safir's approach toward the calculation of comparable earnings is clearly a more efficient method than the traditional approach for arriving at the true opportunity cost of investing utility assets. As a result, Dr. Safir is not sure why it has not had greater acceptance as a measure of the appropriate return on regulated equity. It could be that the traditional method has historical precedent. It has been accepted to some degree by the BCUC and other regulatory boards, and analysts may be loath to investigate better alternatives.

There are also those who feel, as does Ms. McShane, that a historical value is more appropriate because "utility costs are measured in vintage dollars and rates are based on accounting costs."<sup>5</sup> Dr. Safir and others do not agree. A proper rate of return should be based on the rate at which the utility can acquire capital in the *current* market, not in the market that existed when the various costs were first put on the books. Rates should reflect current market conditions, not conditions that existed when a utility first made its investments. When the utility makes investments, it takes a risk that market conditions may change such that a loss may occur. The utility should have been provided a rate of return at the time that took into account such risk as existed at the time. Similarly, any new capital acquired currently should

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<sup>5</sup> Evidence of Ms. Kathleen McShane (114:2881-2883)

take into account the risks in the market currently.

**20.0 Reference: Comparable Earnings  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p.31**

Dr. Safir describes the information and method used to calculate Comparable Earnings.

20.1 Please describe the effects, if any, of investor expectations of market value changes in the Comparable Earnings method described by Dr. Safir.

**Response:**

The market closing prices for comparable companies should, at least in theory, reflect investor expectations of what the values of the companies will be in the future. If, for some reason, investor expectations should change with regard to one particular comparable, then the results of the Comparable Earnings method should not be affected much, with the effect being smaller the larger the sample of comparables. If investor expectations change with regard to the entire market, or at least the sectors of the market from which comparables are chosen, then comparable earnings may be affected. However, this change would reflect conditions in which the utility would be acquiring equity, so would still be a more accurate reflection of the return on equity the utility could expect than any purely historical accounting value.

**21.0 Reference: Comparable Earnings  
Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 32  
Book-value versus market value comparisons**

On page 32, Dr. Safir identifies in footnotes 21 through 23, three references related to the CE test.

21.1 Please provide copies of the relevant sections of each of the references.

**Response:**

See the following: Attachment to BCUC IR 21.1 (fn21).pdf, Attachment to BCUC IR 21.1 (fn22).pdf, and Attachment to BCUC IR 21.1 (fn23).pdf.

**22.0 Reference: Recommended ROE**  
**Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 35**  
**Weights Assigned to each Estimation Method**

Dr. Safir states: “I believe that all three of the approaches that I have discussed represent economically sound methods to develop a fair return for a utility. However, as can be seen by the summary Table 5, there are differences in the final estimates. Yet, because that [sic] are all economically valid approaches, I believe it would be appropriate to take a simple average of all three. As a result, my recommendation for a benchmark utility ROE would be 7.6%.” (Emphasis added)

22.1 Given that Dr. Safir has been asked by the ICG group to recommend a fair and reasonable ROE for 2013 (page 4), can Dr. Safir confirm that the 7.6% is likely for 2013 only? If so, does Dr. Safir believe that his recommended ROE could remain fair and reasonable for a two year period 2013-2014? If not, please explain why not, and if he is able, please provide his recommendation for 2013-2014.

**Response:**

Dr. Safir confirms that this is the recommendation for 2013. However, it may not necessarily remain fair and reasonable over a two year period. Hence, Dr. Safir recommends the adoption of an AAM.

**23.0 Reference: Automatic Adjustment Mechanism**  
**Exhibit C4-9, Evidence of Dr. Andrew Safir, p. 37**  
**Book-value versus market value comparisons**

On page 37, Dr. Safir states that the chief disadvantage of an AAM is that “...there is a risk that the ROE may deviate beyond the normal band of uncertainty. (It should always be recognized that, although it relies on empirical information, the determination of a fair ROE is not absolute science, but remains something of an art.)”

Dr. Safir goes on to relate this comment to “atypical economic times.”

23.1 To what extent is it also a concern that “...the determination of a fair ROE is not absolute science, but remains something of an art.” In other words, given the issues and uncertainties in setting an initial ROE at the beginning of a period, how confident is Dr. Safir that a formula can capture the complexities of adjusting the formula over a period of time – even one as short as 3 years? Please explain your answer.

**Response:**

There is no absolute guarantee. However, as indicated by Dr. Safir's evidence, in relatively normal times, the magnitude of changes in the fair ROE are unlikely to be large, and are generally associated with changes in inflation or inflationary expectations. Moreover, the Commission always has the ability to abandon an AAM if it feels that the formula results are too far off from the fair ROE.



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**1.0 Reference: Safir Evidence, Attachment A: Representative Energy Evidence of Dr. Andrew Safir**

- 1.1 How many of Dr. Safir's retainers since 2000 that are listed in Attachment A have involved Dr. Safir providing an opinion **quantifying the cost of capital, i.e. recommending a specific ROE and/or capital structure**, for a utility in Canada or the U.S.?

**Response:**

In docket numbers IS10-399-003 and IS11-146-000 (consolidated), on behalf of Imperial Oil and ExxonMobil Oil Corp., Dr. Safir recommended a specific capital structure and ROE for the Enbridge Southern Lights Pipeline. [See *Prepared Answering Testimony of Dr. Andrew Safir on Behalf of Indicated Shippers*, before the FERC regarding a rate proceeding for Enbridge Pipelines (Southern Lights) LLC, August 16, 2011, (IS10-399-000 and IS11-146-000).]

- 1.2 For each case identified in 1.1 above, please indicate the regulatory agency, the year, the utility to which his evidence on cost of capital related, and the organization on whose behalf he prepared the Evidence.

**Response:**

See Response 1.1

**2.0 Business Risk**

- 2.1 On a scale of one to 10, with one being irrelevant and 10 being essential, how important does Dr. Safir regard utility-specific business risks to be in determining a utility's cost of capital? Please explain the answer.

**Response:**

Dr. Safir believes that utility specific risks are part of what determines the fair ROE for a utility. In all of the methods that he used to determine the fair ROE, the effect of utility specific risk was taken into account. However, Dr. Safir has not made a subjective determination, on a scale of 1 to 10, of how important this risk is in his analysis.

- 2.2 Please identify everything that Dr. Safir reviewed, prior to finalizing his evidence, to familiarize himself with FEI's overall business operations and business risk.



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**Response:**

Dr. Safir reviewed annual reports issued by Fortis. He also reviewed analysts' reports included as evidence in this proceeding and prior Canadian regulatory proceedings.

- 2.3 How would Dr. Safir characterize his degree of familiarity with FEI's overall business operations and business risk **prior to reviewing** the information identified in the previous response?

**Response:**

Prior to this proceeding, Dr. Safir was somewhat familiar with the FortisBC utilities.

- 2.3.1 If Dr. Safir had been familiar with FEI's overall business operations and business risk **prior to reviewing** the information identified in the response to 2.2, then how did Dr. Safir acquire that familiarity?

**Response:**

Over the past decades, Dr. Safir has been involved in Canadian energy regulatory proceedings that required an assessment of the risks faced by various utilities. This involved developing a familiarity with various Canadian utilities, including the FortisBC utilities.

- 2.4 Is Dr. Safir's analysis and opinion in any way dependent on Dr. Booth's assessment of FEI's business risk? If so, how and to what extent? Please be specific.

**Response:**

No. Dr. Safir is not aware of any instances in which he and Dr. Booth discussed the specifics of FEI's business risk.

- 2.5 Did Dr. Safir review Dr. Booth's evidence in draft, or visa versa?

**Response:**

No. Dr. Safir did not see Dr. Booth's evidence prior to its filing date. Nor did he make available to Dr. Booth a draft of his evidence.



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### 3.0 Capital Structure

- 3.1 Please confirm that Dr. Safir's conclusions are based on FEI having an allowed capital structure of 40% equity and 60% debt, as is the case currently. If not, please explain.

**Response:**

Not specifically. See Response to FBUC 16.10

### 4.0 Reference: Safir Evidence, Page 12, Table 1

Dr. Safir uses a risk-free rate in his CAPM for Canadian utilities of 4.0%

- 4.1 Please explain in detail what the 4.0% risk-free rate is intended to represent, e.g., is it a forecast for 2013?

**Response:**

4.0% is Dr. Safir's forecasted risk free rate that he believes will be appropriate in establishing a fair ROE for 2013.

- 4.2 Please provide the documentation in support of the 4.0% risk-free rate used in the CAPM.

**Response:**

Please see the response to BCUC IR 4.1.

- 4.3 Please provide Dr. Safir's best estimate of the risk-free rate for 2014.

**Response:**

Dr. Safir has not made an estimate for 2014.

### 5.0 Reference: Safir Evidence, Page 12, Table 1 and Page 15, Lines 11 to 15

Dr. Safir adjusts a raw beta of 0.25 to a long-run market tendency beta of 0.58



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- 5.1 Please provide all empirical support for the 66% and 34% weightings of the raw and long-run market tendency betas.

**Response:**

Please see the response to BCUC IR 2.1.

- 5.2 Please identify the 11 studies in the referenced Schaeffler and Weber article used to calculate the long-run market tendency beta of 0.58.

**Response:**

Please see the response to BCUC IR 6.1.

- 5.3 Would Dr. Safir confirm that the lower end of the range of betas cited from the Schaeffler and Weber article (0.35) covered the period 1974 to 1983 and the upper end of the range (0.77) covered the period 1971 to 1980? If he cannot confirm, please explain why not.

**Response:**

Confirmed.

- 5.3.1 Further to question 5.3 above, could Dr. Safir please explain the wide variation in reported utility betas for two relatively similar periods of time?

**Response:**

Dr. Safir has not done a study to determine what explains the differences between the reported betas. One simple explanation is that there may be a difference in the subject companies that made up each individual survey. In addition, the surveys did not occur at the exact same times, and this could also lead to different values. Given these possibilities, Dr. Safir would not necessarily characterize the variations as being "wide." For example, in both of the "extremes," the betas are less than 1, indicating that, in both instances, the utility specific risk is less than that of the overall market.

- 5.4 Please explain why Dr. Safir calculated and used monthly price change intervals (rather than, for example, weekly or daily, price intervals to calculate his raw betas.



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**Response:**

Please see the response to BCUC IR 5.2.

**6.0 Reference: Safir Evidence, Page 16, Lines 4 to 7 and Footnote 12**

Dr. Safir states:

*"A recent study by the California State Board of Equalization has surveyed flotation costs for "A" and "B" rated U.S. natural gas distribution companies and determined that these costs were approximately 4.5% of the recommended rate of return."*

Footnote 12 refers to the Flotation Cost Adjustment Table for Natural Gas Distribution Utilities in the document.

6.1 Please identify the pages of the article which discuss the survey.

**Response:**

Please see p. iii, item V (BCUC Exhibit A2-28) which refers to data reviewed by the California State Board of Equalization in determining flotation costs and other parameters.

**7.0 Reference: Safir Evidence, Pages 15 to 16**

Dr. Safir discusses why he includes a flotation cost allowance in his CAPM calculation.

7.1 Please clarify whether the reference to 0.5% at line 16 on page 15 is intended to be 5.0%, consistent with the subsequent discussion.

**Response:**

Dr. Safir confirms that there is a typographical error in Q17. The flotation cost referred to should have been 5%.

7.2 Please report the number of basis points that Dr. Safir's flotation cost formula produces at a "bare bones" CAPM cost of equity of 9.5%.

**Response:**

The number of basis points would be 50.

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**8.0 Reference: Safir Evidence, Page 21, Line 2**

Dr. Safir uses the term "*exogenous market risk premium*".

8.1 Please explain what the term "exogenous market risk premium" means.

**Response:**

By "exogenous market risk premium," Dr. Safir is referring to a market risk premium that was established outside the theoretical bounds of the formula for the market risk premium as developed in the CAPM model.

**9.0 Reference: Safir Evidence, Page 24, lines 2-4**

In his discussion of the DCF, Dr. Safir states: "*In particular, the simplification of the equation depends on the assumption of constant future growth.*"

9.1 Please explain why Dr. Safir regards that to be the case. Specifically, please explain why it is not possible to incorporate changes in the expected rate of growth into the DCF model.

**Response:**

Under the assumption of constant growth, the equation for the ROE reduces, mathematically to the simplified model, as given on p. 23 of Dr. Safir's evidence, following line 3. However, Dr. Safir has never stated that "it is not possible to incorporate changes in the expected rate of growth into the DCF model." In fact, a DCF model can incorporate changes in the expected rate of growth. But, with assumptions of more and more differential growth rates, the model becomes more and more complex, and solving for a discount rate involves a more difficult mathematical solution.

**10.0 Reference: Safir Evidence, Page 25, Lines 4-7**

Dr. Safir explains that in the DCF model he weighted analysts' forecasts by 33% and GDP growth rates by 67%.

10.1 Please explain in detail the choice of weights.

**Response:**

Please see the response to BCUC IR 14.1. It should be noted that there is no particular magic to the 67/33 split and other weightings could have been applied. However, in Dr. Safir's view a weighting of over 50% should be applied to the overall economic growth rate in all instances, and some lesser but still significant weight should be applied to analysts' growth estimates, as



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the overall economic growth rate is a value to which any company's growth should trend toward over time. Because the appropriate growth rate to use in the DCF calculation typically reflects both company specific and overall economic trends, some combination of both provides a weighted average which best fits what would be expected and faced by investors in a competitive setting.

10.2 Would Dr. Safir use the same weights if he were applying the DCF model to unregulated companies? Please explain why or why not.

**Response:**

Yes. The selection of weights was based on Dr. Safir's judgment of the economic reasonableness of analysts' specific growth forecasts, relative to the forecasts for the entire economy, not on whether the company is regulated or unregulated.

**11.0 Reference: Safir Evidence, Page 27, Lines 14-15**

Dr. Safir states that analysts' growth rates are company-specific.

11.1 Can Dr. Safir confirm that stock prices and dividend yields are also company-specific? If he cannot confirm, please explain why not.

**Response:**

Confirmed.

11.2 Can Dr. Safir confirm that differences in dividend yields among different utilities are, at least in part, due to differences in expected growth rates? If he cannot confirm, please explain why not.

**Response:**

Confirmed. Both dividends and stock prices are determined in part by market participants expectations of future company growth and profitability. As a result, dividend yields are similarly affected.

**12.0 Reference: Exhibit C4-9, Evidence of Andrew Safir, Page 30, Lines 8-13**

Dr. Safir states:

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*"The comparable earnings as I've calculated them, using net income and market value of equity, provide a picture of what the cost of capital is in the competitive market currently. Because these comparable earnings were calculated using market-based values instead of book value, they more accurately capture the conditions in the current capital markets in which the benchmark firm would be competing for capital."*

12.1 Would Dr. Safir please confirm that what he has calculated is effectively the same as an earnings/price ratio? If he cannot confirm, please explain why not.

**Response:**

Confirmed.

12.2 Can Dr. Safir confirm that a capital structure calculated using the market value of equity instead of book value of equity for his comparable companies more accurately captures the conditions in the current capital markets in which the benchmark firm competes for capital?

**Response:**

Confirmed.

**13.0 Reference: Safir Evidence, Page 36, Line 17**

Dr. Safir states:

*"Rather, an adjustment mechanism can and should be structured to capture changes in the **more variable factors** of the ROE..." [Emphasis added.]*

13.1 What are the "more variable factors" to which Dr. Safir is referring?

**Response:**

As indicated in Dr. Safir's evidence (Q&A 47), the most variable factor that could affect the ROE determination would be a change in the risk free rate. Beta and the market risk premium can also exhibit variations. However, it is Dr. Safir's opinion that the betas and the risk premium are relatively more stable than measures of the risk free rate.

13.2 Are there any factors that are variable under Dr. Safir's proposed mechanism other than the risk-free rate?



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**Response:**

Please see the response to FBCU IR 13.1.

**14.0 Reference: Safir Evidence, Pages 36-37**

Dr. Safir recommends using an AAM for the return on equity and generally discusses its structure.

- 14.1 Please provide Dr. Safir's specific recommendations for the AAM, including the starting ROE, the starting long-term bond yield and the formula for determining the ROE for 2014.

**Response:**

Dr. Safir's recommendation is that the BCUC implement a variant of the AAM that was in place up to 2009. That is, the AAM should be a mechanism which adjusts the adopted ROE for 2013 by the difference between a base risk free rate adopted by the Commission and a forecasted risk free rate applicable to the year for which the ROE is being determined.

As he did in deriving his estimated risk free rate for his CAPM model, Dr. Safir proposes starting with projected 10 year Government of Canada bond rates from a survey conducted by Canada's Department of Finance. The agency surveys private sector forecasters for their opinions on various economic indicators which are used in implementing the government's budget. The indicators include 10 year Government of Canada bond rates. These interest rate forecasts are for the current year and each of the next five years. As the starting point in his estimate of a forecasted risk free rate, Dr. Safir proposes using an average of the five future years as his forecasted 10 year rate. To finalize his forecast for the risk free rate, he proposes adding 60 basis points, which has been the historical difference between 10 year and 30 year rates since about 2009. To the extent that this forecasted 30 year rate exceeds the base risk free rate, the base ROE would be increased. To the extent that the forecasted 30 year rate falls short of the base risk free rate, the base ROE would decline.

While Dr. Safir recognizes that current bond yields are still being affected by U.S. Federal Reserve monetary policies, he believes that the use of a five year average of projected rates will provide a forecast that will be minimally affected by these policies. In essence, the five year average takes you beyond the "atypical" period, allowing the implementation of an AAM, even though the economy is currently in an atypical period. Moreover, because it is an average over five years, Dr. Safir does not believe a sliding scale adjustment or dampening mechanism would need to be implemented. It should also be recognized that Dr. Safir's recommended AAM is only for a three year period, after which he believes that the formula and its parameters should be re-evaluated.

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14.2 Please provide all empirical support for the formula recommended.

**Response:**

Please see the response to FBCU IR 14.1.

**15.0 Reference: Safir Evidence, Page 37, Line 19**

Dr. Safir states that *"The chief disadvantage is that there is a risk that the ROE may deviate beyond the normal band of uncertainty."*

15.1 Please define, in basis points, the normal band of uncertainty.

**Response:**

There is no ironclad rule about what constitutes the normal band of uncertainty in basis points. The band of uncertainty referred to really relates to the degree of comfort experienced by utility commissioners regarding whether the ROE, as adjusted by a formula, continues to be fair and reasonable during the adjustment time period.

**16.0 Reference: Safir Evidence, Page 37, Lines 21-22 and Page 38, Line 1**

Dr. Safir states:

*"As was quite clear in recent years, the Western economies faced an enormous monetary crisis which resulted in atypical market prices, specifically yields on long term bonds."*

16.1 Please specify what period is included in "recent years".

**Response:**

"Recent years" refers to the time period beginning in the summer of 2007, and continuing to the present.

16.2 How does Dr. Safir determine if yields on long-term bonds are typical or atypical?

**Response:**

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Long-term bonds are "typical" when they reflect normal market conditions, without undue intervention by central bank monetary authorities. Alternatively, when central banks manipulate bond yields for public policy purposes, Dr. Safir would consider rates as being "atypical."

- 16.3 What was the yield on long-term Government of Canada bonds during the peak of the monetary crisis?

**Response:**

One proxy for the peak of the monetary crisis would be the performance of major stock indexes. In the U.S., the low point for stock prices was in March 2009, the same as it was in Canada. At this point in time, Canadian Government long-term bond yields were about 3.6%.

- 16.4 What is the current yield on long-term Government of Canada bonds?

**Response:**

The current yield is about 2.35%.

- 16.5 Are the current yields on long-term Government of Canada bonds typical or atypical? Please explain the response.

**Response:**

Dr. Safir believes that they are atypical, as they are unduly affected by U.S. Federal Reserve policy.

**3. Reference: Safir Evidence, Page 37, Lines 5-7**

Dr. Safir discusses long-term bond yields and states:

*"Probably the most significant factor is the rate of inflation, which will directly influence actual and expected long term bond interest rates."*

- 16.6 Please provide the forecast yield on long-term Government of Canada bonds for each year 1995 to 2009 used by the Commission to set the benchmark utility ROE and the forecasts for each year 2010 to 2012 using the same methodology that had been previously used by the Commission.

**Response:**

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Dr. Safir has not collected this information.

16.7 Please provide the CPI rates of inflation in Canada for each year 1995 to 2011.

**Response:**

There are a number of consumer related price indexes compiled by the Canadian government. Please see the website for Statistics Canada for further information.

**4. Reference: Safir Evidence, Page 39, Lines 15-17**

Dr. Safir says that he does not have a recommendation for setting the debt and equity percentages for the benchmark utility at this time.

16.8 Could Dr. Safir please confirm that the cost of equity is a function of both business and financial risk? If he cannot confirm, please explain why not.

**Response:**

Confirmed.

16.9 Please explain how it is possible to determine what a fair ROE for a benchmark utility is without knowledge of its financial risk, including capital structure.

**Response:**

Dr. Safir believes that it is not possible to determine the fair ROE for a benchmark utility without knowledge of its financial risk and some information on its capital structure. These are important elements in the assessment of an appropriate ROE.

16.10 Would Dr. Safir's recommended benchmark ROE be the same at equity ratios of 35%, 40% and 45%? Please explain why or why not. If not, please provide estimates of the benchmark ROE at each of 35%, 40% and 45% common equity ratios.

**Response:**

No, not necessarily. Equity thickness affects financial risks and affects betas. As a result, it is possible that different equity thicknesses could affect the estimated fair ROE. While it is true that the equity thickness can affect the fair ROE, it is also likely that the effect will tend to be

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relatively small for changes in the equity thickness that fall close to industry average for regulated utilities, like those of 35%, 40% and 45%. However, Dr. Safir has not done a leverage adjustment in his beta calculations to enable him to calculate betas and the associated ROEs at the equity thicknesses required.

**17.0 Reference: Safir Evidence, Page 39, Line 7**

In reference to the debt and equity percentages for the benchmark utility, Dr. Safir states: *"However, several factors bear on this issue."*

17.1 Dr. Safir mentions one factor. Please list the other factors which Dr. Safir considers bear on this issue.

**Response:**

Dr. Safir meant to indicate one factor.

**18.0 Reference: Safir Evidence, Page 40, Lines 1-3**

Dr. Safir states:

*"Consequently, under current circumstances, a benchmark utility will have an incentive to refinance its debt no matter what weighted cost of capital the BCUC allows."*

18.1 Please provide Dr. Safir's understanding of the terms and conditions under which FEI can refinance its outstanding long-term debt.

**Response:**

Dr. Safir has not familiarized himself with the specific terms and conditions under which FEI can refinance its outstanding long-term debt.

**19.0 Reference: Safir Evidence, Page 40, Lines 3-7**

Dr. Safir states:

*"If a multi-year adjustment mechanism is adopted which operates to change the WACC as outlined above, without requiring annual adjustments in the actual cost of debt annually, an equity debt ratio lower than the current 40% would be more appropriate for the benchmark utility."*

19.1 Please explain in more detail why annual adjustments in the actual cost of debt are required to warrant an equity ratio of 40% for the benchmark utility.



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**Response:**

Dr. Safir did not state that annual adjustments in the actual cost of debt "are required to warrant an equity ratio of 40% for the benchmark utility." Rather, Dr. Safir indicated that given current market conditions, with borrowing costs in the market below actual embedded debt costs, the utility is in a position to unfairly benefit, at the expense of ratepayers, from refinancing, and that this should be reflected in the mechanism through which overall rates are charged to customers. A reduction in the equity ratio could accomplish this objective.

- 19.2 In making the statement referenced above, is it Dr. Safir's position that if a utility is at risk for differences between the forecast and actual cost of debt, it faces lower risk than a utility whose allowed cost of debt is equal to the actual cost of debt each year? Please explain the response.

**Response:**

In general, no. But, as indicated in Dr. Safir's evidence, with current market debt costs below the embedded cost of debt, the risk faced by the utility of receiving less than its actual costs of debt are low.