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VIA EMAIL

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November 16, 2012

**BRITISH COLUMBIA UTILITIES COMMISSION
GENERIC COST OF CAPITAL PROCEEDING EXHIBIT A-25**

Mr. Robert Hobbs
c/o Industrial Customer Group
301-2298 McBain Avenue
Vancouver, BC V6L 3B1

Dear Mr. Hobbs:

Re: British Columbia Utilities Commission
Project No. 3698660/G-20-12
Generic Cost of Capital Proceeding

Commission Information Request No. 1 on Intervener Evidence

Further to the November 5, 2012 filing of the Evidence from Dr. Andrew Safir on behalf of the Industrial Customers Group, enclosed please find Commission Information Request No. 1 on Intervener Evidence. In accordance with the Regulatory Timetable, please file your responses electronically with the Commission by Friday, November 30, 2012.

Yours truly,

Erica Hamilton

EC/dg

Attachment

cc: Registered Parties
(BCUC-GCOC)

to the Industrial Customers Group

Generic Cost of Capital Proceeding

**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. McShanes’s evidence? (Cross-reference Exhibit B1-9, Tab F, p. 7)

**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).

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?

2.3 To what extent does the long-run market tendency Beta of 0.58 reflective of Canadian data? In particular, how many Canadian utilities were included in each of the 11 “beta” studies undertaken with North American industry data?

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.

**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.

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.

“The assumption of flotation costs explicitly assumes that these costs are not part of the utility’s cost of service.” (Footnote 13 on p. 17)

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.

**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 [$B_t*(0.67) + B_r*(0.33)$]		0.36
Recon calculated “raw” beta (B_r)	0.25	
Long run market tendency beta (B_t)	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?

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.

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

**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?
- 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?

**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.
- 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?

**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.

**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?

**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.

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

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

**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?

**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.

**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.¹⁷"

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.

**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?

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?

**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.

- 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.

**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.

**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.

**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.

**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.

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

**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?

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

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.

**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.

**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.

**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.

**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.