INFORMATION REQUESTS N^{O} 1
OF DR. BOOTH TO DR. VILLADSEN ON BEHALF OF THE INDUSTRIAL GAS USERS ASSOCIATION (« IGUA »), THE ASSOCIATION DES HÔTELIERS DU QUÉBEC ET ASSOCIATION RESTAURATION QUÉBEC (« AHQ-ARQ »), THE CANADIAN FEDERATION OF INDEPENDENT BUSINESS (« CFIB ») AND OPTION CONSOMMATEURS (« OC ») ON SETTING RATES OF RETURN AND CAPITAL STRUCTURES

THEORETICAL APPROACH

1. **References: (i) EGI-1, exhibit B-0015, p. 5.**
(ii) R-3690-2009, Written Evidence of Michael J. Vilbert.
(iii) R-3690-2009, Written Evidence of A. Lawrence Kolbe.

Preamble:

(i) Dr. Villadsen references her text "*Risk and Return for Regulated Industries*" Elsevier, May 2017, which according to her CV was co-authored with Michael Vilbert, Dan Harris, and A. Lawrence Kolbe.

Requests:

1.1 Please confirm that Michael Vilbert and Lawrence Kolbe are the same individuals who filed testimony before the Régie on behalf of Gaz Metro Limited Partnership on May 4, 2009.

Réponse:

Les Demanderesses considèrent que la question dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses. Par ailleurs, l'information demandée est accessible publiquement et peut être obtenue directement par l'intervenant.

1.2 Please confirm that the substance of Dr. Villadsen's current evidence is very similar to that filed by Dr. Kolbe and Vilbert in two separate pieces of evidence in 2009. More specifically whereas Dr. Vilbert provided the risk positioning and cost of equity estimates and Dr. Kolbe the financial leverage and weighted average cost of capital evidence in 2009, Dr. Villadsen has combined them into one piece of evidence in this hearing. By substantially is meant the theoretical approach of using adjusted betas, an empirical capital asset model (ECAPM) and leverage adjustments based on a constant weighted average cost of capital or what Dr. Kolbe called an ATWACC.

Réponse:

Les Demanderesses considèrent que la question dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

1.3 If Dr. Villadsen disagrees that the theoretical approach is not substantially the same, please provide an explicit discussion of where the approach (not the actual estimates or companies used) differs from that presented by the Brattle group witnesses in 2009.

Réponse:

Les Demanderesses considèrent que la question dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

RATES OF RETURN IN THE CAPITAL MARKET

2. **Reference: (i) EGI-1, exhibit B-0015, p. 10.**

Preamble:

(i) Dr. Villadsen refers to the cost of capital as the rate of return investors require "*based on the risk-return alternatives available in competitive capital markets.*"

Requests:

2.1 Is it Dr. Villadsen's judgment that the massive bond buying in Canada where the Bank of Canada has essentially bought all the debt issued by the Government of Canada over the last two years represents a return based on a competitive capital market?

Réponse:

No. As discussed in Q/A 30 of Dr. Villadsen's Direct Evidence (Exhibit EGI-1, B-0015), the Bank of Canada's monetary policy measures are downwardly biasing current government bond yields. In her analysis, Dr. Villadsen uses government bond yields that are expected to prevail during the rate period in recognition that current government bond yields are downwardly biased due to monetary policy and the Bank of Canada is expected to scale back accommodative monetary policies going forward.

2.2 Further where a significant proportion of the global bond market trades on negative yields would she confirm that she judges this to be the result of a competitive capital market?

Réponse:

No. Dr. Villadsen did not review or use data from bond markets outside of the U.S. or Canada for purposes of this proceeding.

2.3 If Dr. Villadsen agrees that the intervention by central banks has had no impact on rates of return in the capital market, can she provide any support for such a proposition? That is, does she believe that central bank intervention has no impact on prices and rates of return in the capital market?

Réponse:

See the response to 2.1.

CREDIT RATING

3. **References: (i) EGI-1, exhibit B-0015, pp. 13-18.**
(ii) R-3690-2009, D-2009-156, par. 173.
(iii) R-3690-2009, D-2009-156, par. 184.

Preamble:

(ii) Dr. Villadsen references the Régie's D-2009-156 (paragraph 173) legal requirement of a fair rate of return and states at p. 18:

> "*Specifically, the Régie aims to set the capital structure and allowed ROE such that utilities can maintain their financial integrity, which in my view is a credit rating in the A-range.*"

(iii) "*The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.*"

(Footnote omitted)
(Our emphasis)

Requests:

3.1 With respect to reference (iii), can Dr. Villadsen confirm that the Régie's statement in the above decision further amplifies this by referring to the U.S. Bluefield decision with the words "*support its credit*" which means access to borrowing as the Régie goes on to say, "*enable it to raise the money*"?

Réponse:

Confirmed. Dr. Villadsen confirms that the Régie is quoting the U.S. Supreme Court decision *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia* (262 US 679, 1923). Dr. Villadsen clarifies that the Régie is quoting *Bluefield* when it uses the phrase "enable it to raise the money.".

3.2 Please indicate any statements that Dr. Villadsen is aware of from previous Régie decisions that the Régie targets a particular bond rating.

Réponse:

Dr. Villadsen is not aware of any previous Régie decisions that target a specific credit rating. However, Dr. Villadsen is aware that in D-2009-156, paragraph 173, the Régie

stated that the return must enable the regulated company to preserve its financial integrity. It is Dr. Villadsen's view that this means an A range rating for a Canadian regulated utility. An A range target is ideal because it gives the regulated entity some headroom to maintain investment-grade metrics if cash flows or debt levels deviate in the near-term. Setting a target lower than the A range for a Quebec utility (for example, BBB range) risks the company's ability to maintain its financial integrity. Simply put, a lower range gives the Canadian utility less headroom and risks the company falling into sub-investment grade territory if cash flows or debt levels deviate from expectations.

3.3 Please provide the S&P bond ratings of all the U.S. public utilities she considered before restricting her samples to the current ones used in this evidence.

Réponse:

Below are the all the gas distribution (GASDITR) and water utilities (WATER) covered by Value Line and their S&P credit rating as of June 30, 2021:

S&P Credit Rating Natural Gas and Water Utilities as of 06/30/2021
All Natural Gas and Water Utilities Identified by Value Line

Company Name	Ticker Symbol	Industry	S&P Bond Rating
Adams Resources & Energy	AE	GASDISTR	NA
Atlas Energy Group LLC	ATLS	GASDISTR	NA
Atmos Energy	ATO	GASDISTR	A-
Chesapeake Utilities	CPK	GASDISTR	A-
China Natural Gas	CHNGQ	GASDISTR	NA
Corning Natural Gas Holding	CNIG	GASDISTR	NA
New Jersey Resources	NJR	GASDISTR	NA
NiSource Inc.	NI	GASDISTR	BBB+
Northwest Natural	NWN	GASDISTR	NA
ONE Gas Inc.	OGS	GASDISTR	BBB+
RGC Resources Inc	RGCO	GASDISTR	NA
South Jersey Inds.	SJI	GASDISTR	BBB
Southwest Gas	SWX	GASDISTR	BBB+
Spire Inc.	SR	GASDISTR	A-
Star Group L.P.	SGU	GASDISTR	NR
UGI Corp.	UGI	GASDISTR	NA
Amer. States Water	AWR	WATER	A+
Amer. Water Works	AWK	WATER	A
Artesian Res Corp	ARTNA	WATER	A
California Water	CWT	WATER	A+
Consolidated Water	CWCO	WATER	NA
Essential Utilities	WTRG	WATER	A
Global Water Resources Inc	GWRS	WATER	A
Middlesex Water	MSEX	WATER	A
SJW Group	SJW	WATER	A-
Two Rivers Water & Framing Co	TURV	WATER	NA
York Water Co. (The)	YORW	WATER	A-

3.4 What does Dr. Villadsen judge to be the modal or most common bond rating for a U.S. Public utility?

Réponse:

Dr. Villadsen observes that the average credit rating is BBB+ for her U.S. natural gas utility sample (see Figure 20 in her Direct Testimony, Exhibit EGI-1, B-0015). She also observes that the average credit rating is A for her Water Utility Sample (see Figure 21 in her Direct Testimony).

3.5 Is it Dr. Villadsen's judgment that a utility should be allowed a rate of return on equity (ROE) above a fair return to allow it to get an A-bond rating? If so, please provide any statements in any Canadian board decisions that support such a view.

Réponse:

Dr. Villadsen agrees with the standards set by the Supreme Court of Canada and the U.S. Supreme Court. The utility should be allowed the opportunity to earn a rate of return that is commensurate with returns on investments in other enterprises having corresponding risks; is reasonably sufficient to assure confidence in the financial soundness of the utility; and should be adequate, under efficient and economical management for the utility to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.

The key credit metrics established by the credit rating agencies are cash flow metrics and are not tied to just the allowed ROE. Instead, it is the combination of the utility's capital structure and allowed return (assuming no asymmetric risk) that will determine if a company has sufficient cash flows to meet the metrics required for an A range rating. If a utility was awarded a capital structure with less equity, a higher allowed ROE would be necessary to generate the same level of cash flows to support an A range rating, all else equal. However, this would not be "above a fair return" because a higher amount of debt in the capital structure increases financial risk, which increases the return required by equity investors.

3.6 Can Dr. Villadsen provide details on when Gazifère and Énergir last had their common equity ratios changed by the Régie and the reference to the Régie's decision allowing for this change.

Réponse:

Énergir's deemed capital structure was last changed 30 years ago in D-90-75. Gazifère's deemed capital structure was last changed at least 20 years ago in D-99-09.

3.7 Please confirm that all three Quebec gas utilities are requesting such a change in their common equity ratios in this hearing?

Réponse:

Confirmed. See B-0011 (Joint Request).

CURRENT ALLOWED FINANCIAL PARAMETERS

4. **References: (i) EGI-1, exhibit B-0015, pp. 19-21.**
(ii) Kolbe, Read and Hall, The Cost of Capital, MIT Press, pp. 25 - 32.

Preamble:

(i) Dr. Villadsen refers to current allowed financial parameters on pages 20-21.

"*Therefore, the cost of equity estimates based on the market-derived model inputs (i.e., stock prices, dividends betas) for the proxy companies reflect substantially lower financial risk than the Utilities.*"

Requests:

4.1 In Figure 5, can Dr. Villadsen please provide the risk-free rate, market risk premium and beta coefficient used by the Régie in the decisions that originally led to those financial parameters allowed the Quebec gas distributors

Réponse:

Please see the following screen captures of the relevant tables in Régie's decisions.

Énergir (D-2011-182)

TABLE 4
Authorized value for each factor

Factor	Bottom of range	Top of range
Risk-free rate	3.91%	4.50%
Market risk premium	5.50%	5.75%
Beta of benchmark utility	0.50	0.60
Adjustment for Gaz Métro's risk level	0.25%	0.35%
Flotation costs	0.30%	0.40%
Subtotal 1: Result produced by CAPM	**7.21%**	**8.70%**
Adjustment for results of other models	0.25%	0.50%
Subtotal 2: Return on equity before adjustment for credit spreads	**7.46%**	**9.20%**
Adjustment for credit spreads	0.25%	0.40%
Total: Return on equity after adjustment for credit spreads	**7.71%**	**9.60%**

Intragaz (D-2013-081)

TABLEAU 2
Fourchette d'un rendement raisonnable sur l'avoir de l'actionnaire pour Intragaz

Paramètres	Bas de la fourchette	Haut de la fourchette
Taux sans risque	3,80 %	3,80 %
Prime de risque de marché	5,50 %	5,75 %
Bêta d'un distributeur repère	0,50	0,60
Ajustement pour le risque d'Intragaz	0,00%	0,10%
Frais d'émissions	0,30 %	0,40 %
Sous total n° 1 : Résultat produit par le MÉAF	**6,85 %**	**7,75 %**
Ajustement pour tenir compte des résultats des autres modèles	0,25 %	0,50 %
Sous total n° 2 : Taux de rendement de l'avoir propre avant ajustement pour tenir compte des écarts de crédit	**7,10 %**	**8,25 %**
Ajustement pour tenir compte des écarts de crédit	0,40 %	0,40 %
Total : Taux de rendement de l'avoir de l'actionnaire après ajustement pour tenir compte des écarts de crédit	**7,50 %**	**8,65 %**

Gazifère (D-2010-147)

Tableau 1

Paramètres	**Bas de la fourchette**	**Haut de la fourchette**
Taux sans risque	4,15 %	4,50 %
Prime de risque du marché avant la prise en compte des effets de la crise financière	5,50 %	5,75 %
Bêta brut d'un distributeur repère	0,50	0,55
Ajustement pour le risque de Gazifère	0,25 %	0,50 %
Frais d'émissions	0,50 %	0,50 %
Sous-total n° 1 : Résultat produit par le MÉAF	**7,65 %**	**8,66 %**
Ajustement pour tenir compte des résultats des autres modèles	0,25 %	0,50 %
Sous-total n° 2 : Taux de rendement sur l'avoir de l'actionnaire avant ajustement pour tenir compte des effets de la crise financière	**7,90 %**	**9,16 %**
Ajustement pour tenir compte des effets de la crise financière	0,25 %	0,55 %
Total : Taux de rendement sur l'avoir de l'actionnaire après ajustement pour tenir compte des effets de la crise financière	**8,15 %**	**9,71 %**

4.2 In Figure 6, can Dr. Villadsen provide the underlying estimates for each company that led to those average allowed ROEs and common equity ratios for each year from 2016 to 2020.

Réponse:

Please see Dr. Villadsen's confidential work paper BV-13 (Exhibit EGI-1, B-0024) filed with her Direct Testimony.

4.2.1. Can Dr. Villadsen provide copies of the decisions that led to the determination of the allowed ROE and common equity ratios.

Réponse:

Dr. Villadsen provides citations to the decisions and supporting documents in BV-13 (Exhibit EGI-1, B-0024).

4.3 In particular, can Dr. Villadsen provide the current allowed ROE and common equity ratio for the following province-wide gas distribution utilities: ATCO Gas, Fortis BC Energy, Enbridge Gas Distribution Inc, Union Gas and Liberty Gas New Brunswick.

Réponse:

Please see response to Request 4.2.

4.4 In reference to Figure 7, isn't the most common explanation for higher equity capitalisations (weights) in the capital structure that shareholders are more than happy with the return they are earning and have bid up the share price accordingly? Therefore, isn't the correct implication to lower the allowed ROE not increase it: see Kolbe Read and Hall, the Cost of Capital, MIT Press pp. 25-32.

4.4.1. If Dr. Villadsen disagrees, please explain in detail the fault in their logic.

Réponse:

Disagree. Shareholders are concerned about the level of returns it receives from investing in a regulated utility as well as growth opportunities. As explained in the referenced book, the return is a combination of both the allowed ROE *and* the amount of equity in the allowed capital structure. There, as the question suggest, you cannot simply just lower the allowed ROE without also adjusting the equity capital structure to maintain a fair return. In the case of the Quebec utilities, they have both a lower allowed ROE than peer utilities (see Figure 6 of Dr. Villadsen's Direct Testimony, Exhibit EGI-1, B-0015) and a lower equity capital structure (see Figure 7).

4.5 In particular, why should the Régie deviate from its accepted regulatory practice to support unrealistic shareholder expectations as reflected in share prices above book value?

Réponse:

Dr. Villadsen disagrees with the premise of the question. The Régie should not support "unrealistic shareholder expectations," but share prices above book value are **not** indications of unrealistic expectations as the level of share prices is determined in the market and depends on market conditions as well as utility conditions and in part relative to share prices on the overall market. As discussed extensively in Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), the Régie should support a fair return as defined in the Supreme Court of Canada case *Northwestern Utilities Limited v. City of Edmonton* and the U.S. Supreme Court cases *Bluefield Water Works Co. v. Public Service Commission* and *Federal Power Com'n v. Hope Natural Gas Co*. That

is, the Régie should provide an allowed return on the capital invested in the utility that is commensurate with the returns that investors would receive if it were to invest in another company with the same attractiveness, stability, and certainty to that of the utility's enterprise.

4.6 With respect to reference (i), when the stock price exceeds book value, please explain in detail how the cost of equity estimates derived from these higher market values can "*reflect substantially lower financial risk*" when they are at greater risk of having their allowed ROE cut and their stock price dropping to book value? Doesn't the existence of high market to book ratios as reflected in higher equity market capitalization mean by definition a greater risk of capital loss?

Réponse:

In Figure 7 (Exhibit EGI-1, B-0015) and the paragraph that contains the quote in (i), Dr. Villadsen demonstrates that the proxy sample utilities' cost of equity is estimated using higher equity ratios than those of the Quebec gas distribution utilities. That is, the lower amount of debt creates lower financial risk for the sample companies relative to that of the Quebec utilities.

In addition, a market to book ratio greater than one does not mean that a utility company is at risk of having its allowed ROE cut or that its stock price drop to book value. The market value of the company will reflect the value of assets of the traded entity, including unregulated business activities and growth opportunities. A market to book value greater than one cannot be simply interpreted that the company is earning above the allowed return of its regulated subsidiaries.

4.7 Please provide the complete section as well as the pages from the Brealey et al. textbook referenced at footnote 28. Is 2011 the last edition of the textbook? If not, please explain why you have not used most recent versions. Please provide copies of the pages of the most recent version of this textbook on this topic (standard financial techniques to account for differences in financial leverage)

Réponse:

Dr. Villadsen used the 10th edition of Brealey, Myers, Allen's *Principles of Corporate Finance* as it was readily available to her at the time of drafting the Direct Testimony. The ATWACC and Hamada adjustment methodologies are standard financial techniques to adjust for financial leverage. As such, the presentation of these methodologies in Brealey, Myers, Allen has remained largely unchanged from one edition to the next.

Please see confidential attachment:

- EGI-20.4.1.

FINANCIAL LEVERAGE PRINCIPLES

5. **Reference: (i) EGI-1, exhibit B-0015, pp. 21-29.**

Preamble:

(i) Dr. Villadsen generates an example to illustrate financial leverage principles and the weighted after-tax cost of capital (ATWACC).

Requests:

5.1 Can Dr. Villadsen confirm that in the example she is referring to corporate leverage, that is, the use of debt by a corporation and not financial leverage as experienced by investors borrowing on margin to invest in shares? In her judgment, do these two different types of borrowing have the same effect?

Réponse:

Confirmed. Dr. Villadsen is using an illustrative example to show the differences in a utility's capital structure (*i.e.,* financial leverage) impact realized returns. The amount of leverage for an individual investor (borrowing on margin) does not impact the required rate of return for the utility. Simply put, finance theory states that it is the use of funds (*e.g.*, the utility) and not source of funds (e.g. the investor's borrowing).

5.2 Can Dr. Villadsen confirm that for shareholders using personal borrowing the rate charged is the margin rate on a demand loan, whereas corporations like Énergir borrow long term usually at a fixed rate to match the maturity of their assets? In her judgment, does this differential maturity effect change the financial leverage decision?

Réponse:

Not confirmed. An individual investor is likely to borrow at the margin rate offered to them by a financial institution. Whereas a corporation can borrow at a fixed or floating rate for different maturities. Typically, a corporation will match the maturity of the debt instrument to that of the asset being financed.

The difference in maturity between individual investors and corporations does not impact the financial leverage decision for a utility. It is the overall capital structure of the utility that impacts financial leverage. Utilities will issue debt and equity to approximate their target capital structure on average over time.

5.3 In the example, can Dr. Villadsen confirm that if there is no variation in the cash flows due to the use of deferral accounts by the regulated firm then there is no change in the return on equity?

Réponse:

Not confirmed. A deferral account would delay when the cash flows are received by investors, even if the overall dollar amount is the same. In periods prior to when the different cash flows are not paid out, the earned return on equity would be lower. When the deferred cash flow is paid out, the earned return on equity would be higher. In additional, the delayed cash flows would impact the return on equity due to the time value of money. For clarity, the response assumes that deferred cash for measurement purposes is recognized when received.

5.4 Can Dr. Villadsen confirm that she examined the actual ROE relative to the allowed ROE for each of the three utilities to assess the increased variability due to the use of financial leverage and further that the experience of the regulated companies is consistent with her example? If not, can she explain the relevance of her example if all three utilities consistently earn their allowed ROE?

Réponse:

Dr. Villadsen's example illustrates that the allowed ROE and deemed capital structure are linked. The amount of debt in the capital structure influenced the risk borne by equity investors. A higher degree of financial risk increase the expected variability of equity returns. Thus, an allowed ROE at a given capital structure will not be comparable on a risk-adjusted basis if applied to an otherwise identical firm with a more debt-laden capital structure. Adjusting the capital structure without consideration of the impact on the allowed ROE simply does not meet the fair return standard.

5.5 Can Dr. Villadsen confirm that the credit metrics are all based on book values? If not where does the market value of equity factors into the credit metrics or the variability of the ROE?

Réponse:

Confirmed. The credit metrics used in Dr. Villadsen's direct testimony are based on book value equity numbers. For clarity, credit ratings depend on other measures such as regulatory environment, country risk, etc.

5.6 With respect to Figure 10 on page 26, can Dr. Villadsen confirm that the Modigliani and Miller theorem that generates a constant weighted average cost of capital assumes risk-free debt? If not, please explain why not and reference any passages within the original M&M paper where the debt is risky and increases with the use of debt. Further, please produce extracts from the Brealey et al., "seminal" textbook (footnote 28) that explain why the debt cost increases when it is risk-free. For example, does M&M include the illiquidity of corporate debt that causes spreads over default free government debt?

Réponse:

Not confirmed. Modigliani and Miller theorem is based on the firm's cost of debt (and equity).

"*In existing capital markets, we find not one, but a whole family of interest rates varying with maturity, with the technical provisions of the loan and, what is most relevant for the present purposes, with the financial condition of the borrow. Economic theory and market experience both suggests that the yields demanded by lenders tends to increase with the debt-equity ratio of the borrowing firm (or individual). If so, and if we can assume as a first approximation that this yield curve r=r(D/S), whatever its precise form, is the same for all borrows, then we can readily extend our proposition to the case of a rising supply curve for borrowed funds*" – M&M p. 273.

"*while the average cost of borrowed funds will tend to increase as debt rises, the average cost of funds from all sources will still be independent of leverage (apart from the tax effect)*." – M&M p. 273

Please see confidential attachment:

- EGI-20.4.2.

5.7 Please provide the complete section of the textbook dealing with corporate leverage and any other graphs of the change in the weighted average cost of capital as the firm uses debt.

Réponse:

See the response to 4.7.

CAPITAL MARKET CONDITIONS AND INTEREST RATES

6. **References: (i) EGI-1, exhibit B-0015, pp. 29-42.**
(Q) **R-3752-2011, phase 2, D-2011-182, pp. 25, 26 and 30.**

Preamble:

(i) Dr. Villadsen discusses general capital market conditions and interest rates.

"***Q30. How do interest rates affect the cost of equity?***

A30. The current interest rate environment affect the cost of equity estimation in several ways. Most directly, the CAPM takes as one of its inputs a measure of the risk-free rate. The estimated cost of equity using the CAPM decreases (increases) by one percentage point when the risk free rate decreases (increases) by one percentage point. […]

Q.33 How does the current spread between utility and Canadian government bond yields compare to historical spreads?

A33. As interest rates have declined, the spread between A-rated utility bonds and government bond yields has increased in both Canada and the U.S. […]"

Requests:

6.1 Please provide a copy of the Bank of Canada's January 26, 2022, Monetary Policy Report.

Réponse:

L'information demandée est disponible publiquement et peut être obtenue directement par l'intervenant.

6.2 Please explain the statement on page 34 (Q30) that the CAPM equity cost decreases by 1.0% when the risk-free rate decreases by 1.0%. Is Dr. Villadsen assuming that both the market risk premium and the beta coefficient are unaffected by the level of interest rates?

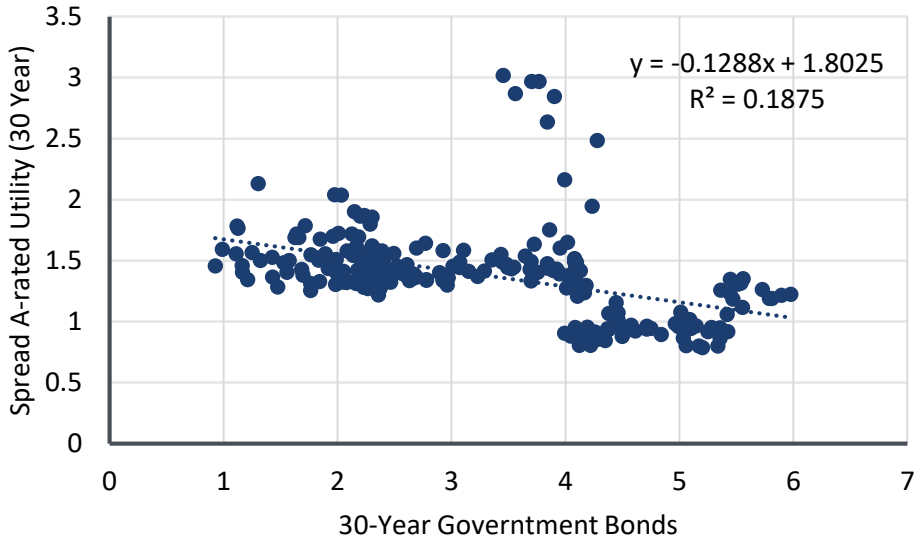
Réponse:

No. Dr. Villadsen is illustrating how interest rates *most directly* impact the CAPM through the risk-free rate. All else equal, a 1.0% increase in interest rates will result in a 1.0% increase in the cost of equity by increasing the risk-free rate.

6.3 On page 37 (Q33), Dr. Villadsen claims that spreads between corporate and government bonds may be affected by the level of interest rates. Can she please provide empirical support for this supposition for A rated utility debt in Canada?

Réponse:

Dr. Villadsen analyzed the relationship between 30-year A-rated Canadian utility bond spreads and 30-year Canadian government bond yields over the prior 20 years (since March 31, 2022). There is a negative relationship between government bond yield levels and utility bond yields. Thus, a lower government bond yield historically has led to a higher spread.



Source: Exhibit EGI-1, B-0019, BV-7, tab Spread Calculations

6.4 Is Dr. Villadsen aware that when the Régie last set Gaz Metro's (Énergir) fair ROE in D-2011-182 it used an ROE adjustment formula that included the traditional 75% adjustment to changes in the level of the long Canada bond and added a 50% adjustment to changes in the utility credit spread?

Réponse:

Dr. Villadsen finds this question to be misleading. In D-2011-182, the Régie authorized an ROE of 8.9% for Énergir in 2012 (see paragraphs 307 to 309 and Table 4). This 8.9% was determined using a full determination of ROE estimates—it was not determined using the automatic adjustment formula. In paragraph 310, the Régie adopted the automatic adjustment formula (AAF) starting in rate year 2013 and beyond (see paragraph 305). However, the automatic adjustment formula was later suspended and has not been used to determine the allowed ROE; Énergir's (Gaz Metro's) rate of return has remained at 8.9% since 2011 (see EGI-15).

6.5 With respect to reference (ii), is Dr. Villadsen aware that the adjustment to GMI's allowed ROE was based on a forecast long Canada bond yield of 4.0% and a credit spread of 1.50%. (paragraphs 295 & 296 of the decision)?

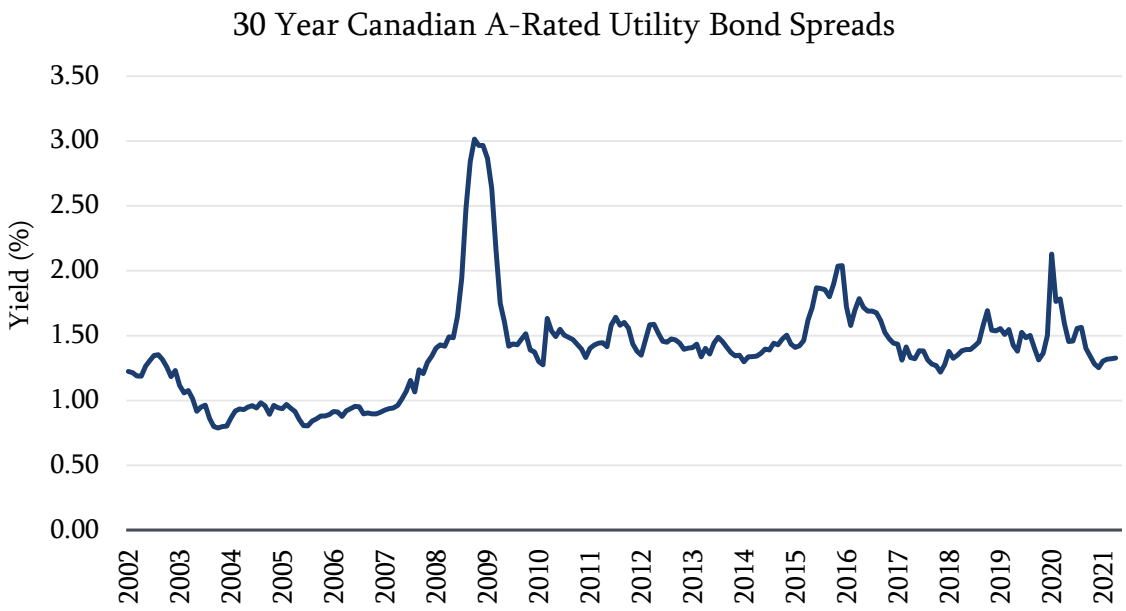
Réponse:

Disagree. Dr. Villadsen is aware that the Régie used a risk-free rate of 4.0% and a credit spread adjustment of 1.5% for the automatic adjustment formula (AAF). However, as discussed in response to Request 6.4, the AAF was not used to establish Gaz Metro's allowed ROE nor has the AAF been used since.

6.6 Based on adjustments since 2011, would Dr. Villadsen accept that her estimate of current utility spreads of 1.33% indicates that the "premium required to hold risky assets: has decreased" from the 2011 ROE decision and not increased as she claims. If not please explain why not.

Réponse:

Dr. Villadsen confirms that the utility spread as of June 30, 2021 (1.33%) is lower than the 1.5% utility spread used by the Régie in D-2011-182. However, does not agree with the statement " and not increased as she claims." As discussed Dr. Villadsen's Direct Testimony (Q/A 33, Exhibit EGI-1, B-0015), the utility spread of 1.33% is above the long-term historic average spread in Canada prior to the financial crisis (0.99%). Following the financial crisis, the Bank of Canada enacted accommodative monetary policies which caused yields on Bank of Canada bonds to fall to near-historic low. Accommodative monetary policies were also enacted in response to the COVID-19 pandemic in early 2020. As shown in the figure below, utility yields have remained elevated relative prior to pre-pandemic levels. Most recently, utility spreads increased dramatically at the on-set of the pandemic, but has since returned to post-financial crisis levels.



Source: BV-7, tab Spread Calculations, column BF, March 31, 2002 to June 30, 2021

MARKET RISK PREMIUM

7. **Reference: (i) EGI-1, exhibit B-0015, pp. 42-53.**

Preamble:

(i) Dr. Villadsen discusses the market risk premium.

"***Q38. Please explain the current evidence related to the Market Risk Premium.***

A38. […] Since the beginning of the pandemic, Bloomberg's forward looking estimate of the MRP reached 10.10% in Canada and 9.05% in the U.S. (see Figure 15 below). Currently, the forecasted MRP is 8.45% in Canada and 8.68% in the U.S. […]"

(Footnote omitted)

Requests:

7.1 On page 43, Dr. Villadsen discusses "Bloomberg's" forward-looking estimate of the market risk premium. Please provide a detailed explanation of how this is calculated, what "buttons" or options are available that led to this particular estimate and the time

horizon of the estimate, that is, is it based on long-run returns or analyst earnings estimates over a 1 or 3-year horizon?

Réponse:

Please see confidential attachment:

- EGI-20.4.3.

The forward-looking estimate of the market risk premium can be obtained from the Bloomberg terminal using the <CRP> function. From there, the U.S. or Canadian estimate can be selected.

7.2 Can Dr. Villadsen confirm that the Dr. Morin referred to in footnote 89 appeared as a witness on behalf of Gaz Metro in 2011.

Réponse:

Confirmed

7.3 On page 45, Dr. Villadsen references the Duff and Phelps market risk premium estimate (footnote 91), please provide a screen shot of the estimate and explain how they estimated it. Did Duff and Phelps use the interest component of the bond return and ignore capital gains and losses as an "income return"? If so, can she calculate the income return on equity (dividends) minus the income (interest) return on bonds over the same period thereby using equivalent series or alternatively use total returns?

Réponse:

Please see Dr. Villadsen's response filed under Exhibit EGI-5 (B-0040), which provides the requested information from Duff & Phelps as a confidential attachment.

Duff & Phelps' methodology includes dividends in its return calculations. Page 3 of "Basic Building Blocks of the Cost of Equity Capital – Risk-free Rate and Equtiy Risk Premium (Abridge)" in its 2021 U.S. Cost of Capital Navigator states, "That is, the dollars invested (including reinvested dividends) are reallocated to available investments annually, and the return is calculated for each year."

Dr. Villadsen has not performed the requested calculation as her evidence relies on the methodology and market equity risk premium estimate reported by Duff & Phelps and Bloomberg.

7.4 Can Dr. Villadsen confirm that the Duarte and Rosa study referenced on pages 46-47

(Figure 16) estimates a one-year ahead market risk premium which is why it is so volatile? Please explain what weight the Régie should place on a one-year ahead market risk premium estimate from seven years ago?

Réponse:

Dr. Villadsen confirms that Duarte and Rosa estimate a one-year ahead market risk premium as is stated in the title to Figure 16 (Exhibit EGI-1, B-0015). However, it is not clear to Dr. Villadsen what Dr. Booth means by his assertion, "which is why it is so volatile." As discussed in Q/A 40 of Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), Duarte and Rosa found that the one-year ahead market risk premium remained elevated following the financial crisis due to the low interest rate environment. Dr. Villadsen draws a parallel to currently observed trends of the forward looking market equity risk premium published by Bloomberg:

"These directional trends identified by Duarte and Rosa are reasonably consistent with those observed from Bloomberg and they further support the proposition that the elevation of the MRP over its historical pre-crisis levels was a persistent feature of capital markets in the time following the financial crisis" – Villadsen Direct Testimony Q/A 40

Dr. Villadsen is not asking the Régie to place weight on the market risk premium estimates published by Duarte and Rosa.

7.5 Please confirm that Dr. Villadsen when referring to the "integrated" market between the U.S. and Canada is assuming that the markets are *perfectly* integrated and that the law of one price applies, such that securities are priced identically in both markets. If she is not so assuming what weight should U.S. evidence from a segmented market play?

Réponse:

Not confirmed. In Dr. Villadsen's Direct Testimony (Q/A 42, Exhibit EGI-1, B-0015), she states that "there is a strong link between financial markets in Canada and in the U.S." Dr. Villadsen is not saying that the U.S. and Canadian markets are "perfectly integrated." Dr. Villadsen finds the evidence from U.S. utilities to be highly relevant and should be given significant weight by the Régie. Dr. Villadsen provides extensive evidence in Section V.D. of her Direct Testimony to support that Canadian investors consider not only Quebec or Canadian utilities but also comparable U.S. investments. For example, Dr. Villadsen found:

- a high degree of correlation between the S&P 500 and the S&P/TSX (correlation coefficient of 0.85 since 2000);
- the Bank of Canada gives nearly 50% weight in calculating its effective exchange rate;

- the majority of Canadian's direct investment abroad are into North America (primarily the U.S.) and investments into Canada from North America are approximately 50% of the total; and

- Significant investments by Canadian pension funds and utilities into U.S. utility companies.

7.6 If Dr. Villadsen confirms that she judges the U.S. and Canadian markets to be perfectly integrated does she ignore the impact of the dividend tax credit that provides a tax benefit for Canadians to own higher paying Canadian shares like utilities? Is Dr. Villadsen saying that a Canadian investor is indifferent between a U.S. and a Canadian utility even if the risk is identical given the Canadian Income Tax Act?

Réponse:

N/A. See response to Request 7.5

7.7 Would Dr. Villadsen agree that if the U.S. and Canadian stock markets are perfectly integrated as she assumes that Canadians would own a balanced portfolio and put 90% of their investments into U.S. stock and only 10% into Canadian stocks given the relative size of the two economies? If so, please provide any data that she is aware of that this is a reality.

Réponse:

Dr. Villadsen disagree and finds that this question mischaracterizes her evidence. As discussed in response to Request 7.5 above, she states in her Direct Evidence that "there is a strong link between financial markets in the U.S. and Canada." Dr. Villadsen does not assume that the markets are "perfectly integrated."

EQUITY COST

8. **References: (i) EGI-1, exhibit B-0015, pp. 53-66.**
(ii) R-3690-2009, exhibit B-28, p. 327.

Preamble:

(i) Dr. Villadsen estimates the equity cost from three samples.

Requests:

8.1 In her Canadian sample, Dr. Villadsen includes AltaGas, please indicate what Canadian assets AltaGas now owns and whether any of them are regulated distribution assets. If she determines that AltaGas still owns distribution assets, what percentage of the company's total assets do they represent?

Réponse:

AltaGas owns rate regulated utilities in Alaska, Michigan, Maryland, DC, and Virginia, which is the reason for its inclusion. Altagas owns integrated midstream business in Canada and parts of northeastern U.S. Capabilities include natural gas gathering and processing, NGL extraction and fractionation, storage, marketing & transport, and propane export to global markets. This midstream segment includes an interest in a regulated pipeline in United States in the Marcellus/Utica gas formation.[1] The regulated utility revenue reached over 65% of the company's total revenues in 2020.[2]

8.2 Please confirm that a Canadian buying U.S. asset through a Utility holding company like Fortis gets the benefit of the dividend tax credit whereas in a direct investment in a U.S. utility it does not.

Réponse:

Confirmed.

8.3 Please provide the DBRS bond rating for each of the Canadian companies in Figure 18 on page 56.

[1] AltaGas 2020 Annual report, PDF pg. 83, Q4 2020 MD&A and FS (altagas.ca).

[2] S&P Capital IQ. Data accessed March 2022.

Réponse:

Dr. Villadsen relies on S&P credit ratings for her proxy companies, which are supplied in her Direct Testimony and supporting work papers (Exhibit EGI-1, B-0015, B-0016, and B-0017). She also provided additional credit rating reports as part of the Régie's request in D-2022-006 (see Exhibits EGI-7.1 to 7.22). To the extent that Dr. Booth wants credit rating data that goes beyond what was relied upon for Dr. Villadsen's analyses or requested by the Régie, he is welcome to download the additional data.

8.4 Please confirm that as a general rule S&P will not rate its operating subsidiaries higher than the holding company unless the utility is "ring-fenced."

Réponse:

Disagree. According to S&P's 2016 methodology, S&P does not evaluate a subsidiary unless it has the following characteristics:

- It has independent directors (or an equivalent anti-bankruptcy filing mechanism) at the operating company.
- It has no cross-default provisions to entities outside of the financing group.
- It cannot merge or reorganize.
- There are limitations on amendments to organizational documents.
- It meets the conditions for separateness from its parent(s) defined in paragraphs 40-45 of the "Project Finance Transaction Structure Methodology."
- Creditors have a security interest over those of the financing group's assets that can be pledged as security.
- It has no parent dependencies (such as certain contracts with parents and affiliates, taxes, or insurance contracts). [3]

If the company does not satisfy these conditions, S&P will not provide a debt rating that is separate from its parent company.

[3] S&P Global Ratings, "Rating Structurally Enhanced Debt Issued By Regulated Utilities and Transportation Infrastructure Businesses", February 24, 2016, S&P Global Ratings > Criteria (capitaliq.com).

8.5 Please confirm that all the U.S. gas companies are relatively small compared to the Canadian ones and that none are in the S&P500 index.

Réponse:

Dr. Villadsen finds this question to be ambiguous – it is not clear by what metric Dr. Booth is referring to when he means "small." However, to be responsive, Figures 18, and 20 in Dr. Villadsen's Direct Testimony shows that the natural gas utilities are smaller than companies in the Canadian sample with respect to annual revenue and market capitalization (Exhibit EGI-1, B-0015). However, Dr. Villadsen notes that the annual revenues of the Quebec gas distributions are closer to that of the gas utility sample than that of the Canadian sample.

The inclusion of the companies in the S&P 500 index is irrelevant for cost of capital estimation. However, to be responsive, Dr. Villadsen confirms that none of the U.S. gas companies are listed in the S&P 500 index.

8.6 Please indicate for how long each water company in Figure 21 has had a stock exchange listing and whether any of them meet the requirements to be included in the S&P500 index.

Réponse:

Dr. Villadsen objects to this question as it is not relevant to her Direct Evidence or the analysis contained therein. Each of the water utility proxy companies were listed on a stock exchange during the three year analysis period that Dr. Villadsen relied upon for her analysis. How long the water utilities were listed on exchanges prior to Dr. Villadsen analysis period is not relevant to her analysis. In addition, as stated in response to request 8.5, the inclusion of companies in the S&P 500 index is irrelevant cost of capital estimation.

8.7 With reference to footnote 132, Dr. Villadsen refers to "*elevated*" spreads. Is she referring to spreads compared to pre-financial crisis spreads, if so please indicate the average annual spread since 2009 and the period of the pre-financial crisis average spread she has estimated.

Réponse:

As stated in Footnote 132, please see Exhibit BV-7 (Exhibit EGI-1, B-0019). In the tab "Yield Spread Table" the calculated 34 basis point difference is shown. The periods being compared are the 15-day average ending June 30, 2021 and the pre-financial crisis period of March 2002-2007. The spread from January 2009 through June 2021 is 1.53%.

8.8 With reference to the Duff and Phelps market risk premium estimated as an average equity return minus the average expected yield or income return, please indicate when Duff and Phelps changed their methodology to calculate the market risk premium in this way rather than in a consistent manner as the difference between two rates of return.

Réponse:

Duff & Phelps has used the same methodology since at least 2014.[4]

Chapter 3 of D&P 2014 Guide to Cost of Capital says on p. 15:

"We measure the realized risk premium by comparing the stock market returns during the period to the income return on long-term U.S. government bonds (or total returns for the years before 1926)."

Similarly, page 2 of Duff & Phelps "Basic Building Blocks of the Cost of Equity Capital – Risk-free Rate and Equity Risk Premium (Abridged)" from the 2021 Cost of Capital Navigator states:

"We measure the realized risk premium by comparing the stock market returns during the specified period to the income return on long-term U.S. government bonds (or total returns for the years prior to 1926)."

The same methodology is used for Duff & Phelps International Cost of Capital module

8.9 Please confirm that in previous testimony and in answer to Dr. Booth's information request 5.1 (reference (ii)), Dr. Vilbert of Brattle and Dr. Villadsen's co-author had used the market risk premium estimates derived from the annual return on equities minus the annual return on government bonds from the Canadian Institute of Actuaries publication "Report on Canadian Economic Statistics".

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

[4] 2014 is the earliest methodology available on Duff & Phelps' web portal.

ADJUSTED BETAS

9. **References: (i) EGI-1, exhibit B-0015, pp. 66-69.**
(ii) R-3752-2011, phase 2, D-2011-182, p. 11, par. 224.
(iii) R-3690-2009, Written Evidence of Michael J. Vilbert, pp. 56 and 160.

Preamble:

(i) Dr. Villadsen uses adjusted betas in her CAPM estimates.

(ii) "*With respect to the use of adjusted betas. the Regie maintains the position it has taken in previous decisions. The explanation commonly used in financial research to support an adjustment to raw beta, namely the empirically observed tendency of betas in general to converge in the long term towards the market mean of 1, does not apply in the case of regulated companies.*"

(Footnote omitted)

(iii) *"**Q86. How is beta obtained**?*

A86. There are many ways to estimate betas. However, standard approaches calculate beta by statistical regression of the excess (positive or negative) of the return on the stock over the risk-free rate against the excess return over the risk-free rate on the relevant index (e.g., the S&P/TSX index for the Canadian companies or the NYSE index for the U.S. 3 companies). It is common to use monthly return data for the most recent 60-month period for which data exist or weekly data for the most recent 260 weeks."

Requests:

9.1 With reference to what Dr. Villadsen refers to as "Bloomberg betas". Please confirm that Bloomberg is a data provider and as such provides a range of options in estimating betas. Please indicate why she chose to use "Blume Adjusted" betas and over what period and frequency did she chose to estimate them? Please also indicate whether they are estimated from price series or from actual rates of return including dividends?

Réponse:

Confirmed that Bloomberg is the data provider and Bloomberg has adjusted the betas using the Blume methodology. The betas are measured over a three-year period using price returns. Bloomberg calculates betas based on price series. For explanation of Bloomberg's methodology please see confidential attachment EGI-20.4.4.

With regards to the use of Blume adjusted betas, Dr. Villadsen starts by noting that

raw betas measured using historical returns do not represent "actual" or "true" measures of the systematic risk of the underlying securities. Rather, they are statistical estimates based on a particular sample of data (i.e., returns over a particular period of time), and as such, they are subject to estimation error.

In his seminal 1971 paper "On the Assessment of Risk," Professor Blume constructed portfolios from the returns of all common stocks traded on the New York Stock Exchange in each of six historical periods between 1926 and 1968, each of period being 5 years long. Blume's portfolios were constructed based on rankings of beta estimates measured over a given historical period, so as to create a wide distribution of measured beta estimates—some with low systematic risk (as measured by beta), some with high risk, some with average risk (as measured by a beta approximately equal to the market-wide average of 1) and others spread out along the spectrum. Blume then tested the ability of each portfolios beta measured in one period to predict its beta when re-measured in a subsequent period. He found that "the estimated values of the risk coefficients in one period are biased assessments of the future values, and furthermore the values of the risk coefficients as measured by the estimates of β_1 tend to regress towards the means with this tendency stronger for the lower risk portfolios than the higher risk portfolios."

In Appendix B to her written evidence, Dr. Villadsen discussed a statistical explanation for Blume's observations, namely that since betas for individual stocks are clustered between 0.5 and 1.5 with a market-wide average of 1, sampling error is asymmetrical for high or low-risk assets. Random measurement error is thus more likely to result in a downwardly-biased estimate of a security's true systematic risk when the observed estimate is in the low end of the distribution of betas (and vice versa when the observed estimate is at the high end of the distribution).

In sum, the reason the Blume adjustment is appropriate is that the raw beta estimates derived from historical returns are more likely to by systematically biased toward the extreme, such that adjusting them toward the market-wide average of one was demonstrated by Blume to provide a more accurate assessment of the true future systematic risk of the securities.

9.2 With respect to reference (iii) of Dr. Vilbert's (from Brattle) response to his own question in his previous evidence, can Dr. Villadsen explain why she does not follow standard procedures in estimating betas as laid out by her colleague?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

9.3 If Dr. Villadsen judges it is best to use a variety of estimation methods for the equity cost, why has she only relied on her own beta values estimated in a un-common way (according to her colleague)?

Réponse:

Dr. Villadsen disagrees characterization that her beta estimation methodology is "un-common." Adjusted betas provide a more accurate assessment of the true future systematic risk of the securities, as discussed in response to Request 9.1. In addition, betas can be measured at various frequencies over different estimation period. Based on Dr. Villadsen's experience, three year weekly betas are used to estimate the cost of capital for many regulated entities. Three year weekly betas provide sufficient observations and a short enough horizon to provide a meaningful estimate of a company's systematic risk.

9.4 With respect to reference (ii), is Dr. Villadsen aware of any new research that would justify the use of adjusted betas? If so adjustment toward what value?

Réponse:

Dr. Villadsen notes that newer research such as the 2004 Fama & French paper, "The Capital Asset Pricing Model: Theory and Evidence," Journal of Economic Perspectives, vol. 18, similarly finds that the security market line empirically is flatter than the theoretical model prescribes. Please also see response to Request 9.1.

9.5 With respect to reference (iii), Dr. Vilbert provided both adjusted and unadjusted betas for his samples in his 2009 evidence. Given the judgment of Dr. Vilbert and the decision of the Régie, can Dr. Villadsen please provide revised estimate for the betas for the firms in her three samples using what her colleague Dr. Vilbert described as commonly estimated betas, that is estimated using monthly returns of the stock against the market index over a five-year period. Alternatively, can Dr. Vilbert unadjust her betas reversing the Blume methodology

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

9.6 Has Dr. Villadsen considered using other ways of adjusting betas such as the model developed by Beaver, Kettler and Scholes, "The Association between Market Determined and Accounting Determined Risk Measures", Accounting Review 1970, or Rosenberg and McKibben, "The Prediction of Systematic and Specific Risk in Common Stocks", JFQA, March 1973 rather than relying on Blume adjusted betas that

have been rejected by the Régie? If not, why not?

Réponse:

Dr. Villadsen is familiar with the Beaver, Kettler and Scholes articles, but did not implement the methodology. Dr. Villadsen notes that the methodology relies on accounting data, which are available with a much lower frequency than are market prices.

Dr. Villadsen is not familiar with the Rosenberg and McKibben paper, but understands that this too relies on accounting data.

EMPIRICAL CAPITAL ASSET PRICING MODEL (ECAPM)

10. **References: (i) EGI-1, exhibit B-0015, pp. 70-73.**
(ii) R-3752-2011, phase 2, D-2011-182, p. 7, par. 200.
(iii) R-3690-2009, exhibit B-28, p. 332.
(iv) R-3690-2009, exhibit B-28, p. 333.

Preamble:

(i) Dr. Villadsen refers to the Empirical Capital Asset Pricing model (ECAPM).

(ii) "*The Regie has already ruled on the ECAPM. In the Regie's view, there is no new information that would warrant a reconsideration of this model.*"

(iii) *"6.1 Please confirm that the empirical tests on which the ECAPM is based used the short term treasury bill yield as the risk free rate and actual beta estimates unadjusted either mechanically or by the use of judgment. If not why not.*

***Réponse** : Confirmed. All of the academic articles listed in Appendix C to Dr. Vilbert's written evidence are based upon use of 30-day Treasury bills except Pettergill, Sundaram and Mathur 1995 which used 90-day Treasury bills. Confirmed. Beta estimates were not adjusted."*

(iv) *"6.3 Please re-estimate Dr. Vilbert's ECAPM estimates using the current Treasury Bill yield consistent with the empirical tests on which it is based.*

***Réponse** : The results of the requested estimates would all be economic nonsense because the estimated cost of equity would be less than the 6.61 percent yield on A-rated utility debt prevailing at the time of the preparation of Dr. Vilbert's written evidence. […]"*

(Footnote omitted)

Requests:

10.1 With respect to reference (iii), can Dr. Villadsen confirm the same is true of her own referenced tests of the CAPM, since the cited references appear to be identical or explain where there are differences?

Réponse:

Confirmed that the academic papers listed in Dr. Villadsen's technical appendix related to the ECAPM used short-term Treasury bill yields and betas were unadjusted.

10.2 With respect to reference (iv), can Dr. Villadsen similarly re-estimate her CAPM estimates in a manner consistent with the empirical evidence that she uses to justify the ECAPM? In other words, use the 30-day Treasury bill yield, her market risk

premium estimates and unadjusted betas or would she similarly agree that the results are nonsense?

Réponse:

Dr. Villadsen has provided her work papers and necessary data for Dr. Booth to perform the requested calculations. Dr. Villadsen's evidence does not rely on 30-day treasury bills in her calculation because the cost of capital set forth in this proceeding should reflect the life of the assets that are being financed by the utilities. Utilities are constructing gas distribution systems and storage facilities, which are expected to have a useful life over multiple decades. Simply put, a 30-day treasury bill does not reflect the risks associated with long-lived assets. Dr. Villadsen has also previously discussed her strong disagreement with using unadjusted betas in response to Request 9.1.

10.3 With respect to reference (ii), does Dr. Villadsen's use of the ECAPM provide any new information as to its usefulness given the above comments of Dr. Vilbert in 2009 that as applied consistently with the empirical evidence the results are nonsense? If so, please justify why the Régie should reconsider its 2011 dismissal of ECAPM evidence.

Réponse:

Les Demanderesses considèrent qu'il y a absence de question sur le premier point et qu'il s'agit en fait d'une opinion.

With respect to the 2011 Régie decision, in Dr. Villadsen's opinion, the Regie should consider all information in front of it including the application of the ECAPM in the light of, for example, recent work on the Fama-French model.

DISCOUNTED CASH FLOW (DCF) EQUITY COST MODEL

11. **Reference: (i) EGI-1, exhibit B-0015, pp. 73-76, 110, 139-202.**

Preamble:

(i) Dr. Villadsen estimates a discounted cash flow (DCF) equity cost.

Requests:

11.1 Dr. Villadsen uses a constant growth and two stage DCF models. For the latter, she assumes that utility dividends will grow at the long-run rate of GDP. Please provide all evidence that she is aware of that long-run utility and in particular gas company dividends can be expected to grow at the long-run GDP growth rate.

Réponse:

The discounted cash flow (DCF) model is a perpetual model. That is, it is premised on the fact that investors will receive cash flows (*e.g.*, dividends) from a company an infinite number of periods into the future. The multi-stage DCF model is a variation of the single-stage DCF in that it allows an analyst to vary a company's growth rate over time. Equity analysts frequently provide near-growth rate forecasts, but analysts performing a DCF calculation need to make an assumption about a company's growth rate in perpetuity or to alternatively provide an estimate of a terminal stock price and the date of such a terminal value. Frequently, financial practitioners and regulators will use the long-term GDP growth estimate to grow dividends into perpetuity. The rationale is that observable near-term business risk will drive the short term growth rate; over the long-term (for example, 50 to 100 years from now) it is macro-economic factors that will predominately drive a company's growth. This approach is commonly taught in standard MBA textbooks such as Brealey, Myers, Allen's *Principles of Corporate Finance*. In addition, regulators such as the Federal Energy Regulatory Commission, the New York State Public Service Commission, the New York Public Service Commission staff, Illinois Commerce Commission, the Oregon Public Service Commission, and the Surface Transportation Board use long-term GDP growth rates in their DCF methodologies.

11.2 Would Dr. Villadsen agree that utility dividend yields are generally higher than that for the S&P500 index, if not please provide quantitative evidence to the contrary.

Réponse:

Dr. Villadsen finds this questions to be misleading. Dr. Villadsen agrees that utility dividends are generally higher than that of the S&P 500 index. However, the S&P 500 is a broad market index that includes companies that pay dividends (*e.g.*, utilities) and other large companies that do not pay regular dividends and instead provides returns to investor through other mechanisms (*e.g.,* stock appreciation, share buybacks). Since utilities pay regular dividends, their dividend yields will generally be higher than that of the S&P 500 index.

11.3 Given her answer to 11.2 above if the utility dividend yield is higher than that for the market as a whole and she expects their dividends to grow at the same rate as GDP, doesn't that imply that the DCF equity cost for utilities is higher than that for the overall market and that utilities as a result are riskier than the overall stock market? If not please explain why not.

Réponse:

Dr. Villadsen does not agree. Please see response to Request 11.2. Companies can provide returns to investors through various means (*e.g.*, dividends, share buybacks, stock appreciation). The DCF is a discounted cash flow model and should account for

all cash flows received by investors in a company. Simply comparing just dividends to the broader market is misleading.

11.4 In the DCF estimates, can Dr. Villadsen confirm that the growth estimates are based on analyst forecasts and in that exhibit BV-1 (exhibit B-0015, p. 110) she references one paper by Hovakimina and Saenyasiri (2010) immediately after the financial crisis that claim that the analyst optimism bias has disappeared. Given that a quick Google search on analyst forecast optimism on February 8, 2020, came up with 2,010,000 results, how can Dr. Villadsen assure the Régie that the one-12-year-old paper she cites reflects current analyst forecast accuracy?

Réponse:

Dr. Villadsen finds this question to be misleading. A simple Google search for "analyst forecast optimism" will generate results on anything related to those keywords – including papers such as Hovakimina and Saenyasiri that found that analyst optimism has "essentially disappeared." Hovakimina and Saenyarsiri's research is based on the effects of regulatory reforms that were enacted to address analyst optimism bias. Regulatory reforms implement are not one-time events but instead designed to provide lasting change to an industry, even if the reform was enacted 12-year ago. Additionally, Dr. Villadsen refers to the studies cited in footnote 27 of her Technical Appendix (Exhibit EGI-1, B-0015).

11.5 In exhibit BV-3 (exhibit B-0015, pp. 139-202), Dr. Villadsen reports just 2-4 security analyst growth forecasts for her Canadian sample. Has Dr. Villadsen checked on whom these analysts are and whether the same two or three analysts are providing forecasts for all these Canadian firms?

Réponse:

Please see response to Request 4 series in EGI-18.3.

11.6 What other basic checks has Dr. Villadsen performed to ensure that the analyst forecasts are accurate, that is, consistent with their ability to retain and earn a reasonable return on their investments given that they come from an extremely limited number of analysts?

Réponse:

Dr. Villadsen relies on analyst's forecasts as provided by Value Line and IBES, both of which are widely relied upon by financial practitioners and regulatory jurisdictions. For example, the Federal Energy Regulatory Commission, New York State Public Service Commission, the Michigan Public Service Commission, the Oregon Public Utilities

Commission, rely on analysts forecasts from Value Line and/or IBES in their cost of capital methodologies. Dr. Villadsen also reviews the analysts' growth rates used in her cost of equity analyses and will exclude any anomalous growth rates. For clarity, Dr. Villadsen has not excluded any growth rates in her cost of equity analysis for this proceeding.

11.7 Does Dr. Villadsen think it reasonable that the Régie accept forecasts from in some cases just two sell-side analysts?

Réponse:

Yes. The Régie should consider the available analyst growth rate forecasts published by financial institutions. Dr. Villadsen used all available analysts' forecasts from IBES and Value Line that were current as of the time of her analysis.

11.8 Is it Dr. Villadsen's judgment that dividends on utility shares increase on a quarterly basis so that her DCF estimates are based on quarterly compounding? If so, please provide the dividend history of each utility in her three samples since 2010 to justify the assumption that dividends are increased on a quarterly basis.

Réponse:

Dr. Villadsen observes that the utilities in her proxy samples generally increase dividends on an annual basis, although some utilities will increase dividends more frequently.

Dr. Villadsen has provided historical financial data on the proxy sample companies to support her analysis as part of her Direct Testimony. This includes historic dividend data in BV-5 and BV-6 (Exhibit EGI-1, B-0017 and B-0018; see tabs Raw[proxy company name]). She also provided additional evidence as part of the Régie's request in D-2022-006. To the extent that Dr. Booth wants additional historic data that goes beyond what was relied upon for Dr. Villadsen's analyses or was requested by the Régie, he is welcome to download the additional data.

EQUITY COSTS ESTIMATES

12. **Reference: (i) EGI-1, exhibit B-0015, pp. 71, 72 and 77-79.**

Preamble:

(i) Dr. Villadsen's final estimates of the equity costs.

Requests:

12.1 On pages 71-72 and page 77, Dr. Villadsen presents her sample equity cost at different equity percentages and different market risk premium estimates for her CAPM and DCF based models. Is it correct to subtract the scenario 3 (4) results from that of scenario 1 (2) to obtain what she judges to be a *leverage* adjustment due to the fact that book capital structure entails more debt than the market valued capital structure she estimates in the appendices? So, for example, in the first set of CAPM estimates for her Canadian sample what she refers to as the "unlevered" method the leverage adjustment is 0.8% and 1.1% depending on the market risk premium and for the Hamada adjustments slightly less?

Réponse:

Please see response to Régie EGI-18.3, Request Series 6

No. Dr. Villadsen clarifies that the results in Figure 25 reflect leverage adjustments at 40% and 46% respectively (Exhibit EGI-1, B-0015). The "unlevered" row labels is a typo and should be labeled "Financial Risk Adjusted Method," "Hamada Adjustment Without Taxes" and "Hamada Adjust With Taxes", consistent with Figures 26 and 27. The results in Figure 25 were unlevered using either the Financial Risk Adjustment Method or the Hamada method and then re-levered to a 40% or 46% equity capital structure using the methodology indicated (financial risk, Hamada without Taxes, or Hamada with Taxes). The referenced figures represent the cost of capital estimates, including the effects of leverage, at two different capital structures.

12.2 Can Dr. Villadsen confirm that similar leverage adjustments increase her estimates for the U.S. gas sample and water sample by 1.1% and 1.4% and by 1.1% and 1.5% respectively?

Réponse:

Not confirmed. See response to Régie EGI-18.3, Request Series 6 and Booth Request 12.1

12.3 Can Dr. Villadsen confirm that for the Canadian sample at the historic market risk premium she uses of 5.68%, the range runs from 7.6% to 7.7% using Énergir's current 46% deemed equity ratio (38.5% common and 7.5% preferred) with her CAPM estimates and that these estimates include adjusted betas which the Régie has consistently rejected? If not, why not?

Réponse:

Not confirmed. See response to Régie EGI-18.3, Request Series 6 and Booth Request 12.1.

12.4 Can Dr. Villadsen confirm that her summary CAPM/ECAPM estimates on page 75 are consistently lower for the Canadian sample than for either the U.S. gas sample or water sample? If not, why not?

Réponse:

Not confirmed. See response to Régie EGI-18.3, Request Series 6 and Booth Request 12.1.

12.5 Dr. Villadsen's equity cost ranges in Figure 32 on page 78 do not seem to match the data in previous tables, for example the "low" CAPM estimate in Figure 25 on page 71 is 7.6% with the Hamada adjustment at Énergir's 46% equity ratio, whereas the low point in Figure 32 is 7.75%. Can Dr. Villadsen verify how the ranges in Figure 32 were calculated and present new tables if the differences are typos?

Réponse:

Figure 32 presents Dr. Villadsen's reasonable ranges based on the results presented in the CAPM/ECAPM and DCF summary tables (Exhibit EGI-1, B-0015). Her methodology to determine her reasonable range for the CAPM/ECAPM results are explained in Q/A 64 (Exhibit EGI-1, B-0015). Dr. Villadsen gives more weight to the estimates from the ECAPM model and more weight to the results that rely on the Hamada methodology. As explained in Footnote 5, the upper and lower bounds of the reasonable ranges are rounded to the nearest ¼ percentage point.

LEVERAGE ADJUSTMENT

13. **References: (i) EGI-1, exhibit B-0015, pp. 22-29, 78 and 139-202.**
(ii) R-3690-2009, D-2009-156, pp. 12-15 and 27. (*English version)*
(iii) R-3690-2009, D-2009-156, par. 228-229. (*English version)*
(iv) R-3690-2009, D-2009-156, pp. 54-58.
(v) R-3724-2010, D-2010-147, p. 94.
(vi) R-3690-2009, Written Evidence of Michael J. Vilbert, pp. 94 - 95.
(vii) R-3690-2009, Written Evidence of A. Lawrence Kolbe, pp. 57 – 58.
(viii) R-3690-2009, D-2009-156, par. 200. (*English version)*
(ix) R-3752-2011, phase 2, D-2011-182, p. 30.

Preamble:

(i) Dr. Villadsen's leverage adjustment discussion pages 22-29 and adjustments on page 78.

(ii) "*This hearing examined a new approach to establishing the return on the Distributor's rate base, namely the ATWACC based on market values. The Régie has decided not to adopt this approach.*"

(viii) "*IGUA recommended continued application of the AAF, which would produce an 8.64 % return on equity (ROE) for 2010. Dr Booth stated that the AAF yields results that he described as generous but reasonable, adding that 75% adjustment factor applied to interest rate variations has been remarkably precise in the past in following downward movements in the Government of Canada bond rate, while allowing an increase in the risk premium*."

(Footnote omitted)

Requests:

13.1 At exhibit BV-3 (exhibit B-0015, pp. 139-202), Dr. Villadsen estimates the CAPM cost of equity for her Canadian sample using adjusted betas, please confirm that the average estimate is 7.6% and would be lower if she had used unadjusted betas.

Réponse:

Dr. Villadsen confirms that the average of the unadjusted betas would be lower than 7.6%. However, Dr. Villadsen does not find it appropriate to use unadjusted betas in

the cost of equity estimation of a regulated utility for the reasons provided in the response to Request 9.1.

13.2 Can Dr. Villadsen confirm that in exhibit BV-3 Dr. Villadsen estimates the overall after-tax cost of capital or what Dr. Kolbe in 2009 called the ATWACC for her Canadian sample as 4.8%?

Réponse:

Dr. Villadsen confirms that the "Overall After-Tax Cost of Capital (CAPM)" for the Canadian sample is 4.8% on Schedule No. BV-11. Dr. Villadsen notes that this 4.8% is prior to adjusting for financial leverage and applying it to the utilities representative capital structure (see Schedule No. BV-12).

13.3 With respect to reference (vi), can Dr. Villadsen confirm that in the 2009 GMI hearing Dr. Vilbert estimated the Canadian sample's ATWACC at 7.1% using a multistage DCF equity cost estimate of 9.6% (MJV-7) and 8.0% using the simple DCF Model with an equity cost of 11.2% (MJV-7)?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

13.4 Can Dr. Villadsen confirm that both the ATWACC and the directly estimated equity cost have declined from Dr. Vilbert's evidence in 2009 to her current evidence by well over 2.0% in both the ATWACC and the equity cost? If not, please provide her own estimates of how much the ATWACC and equity cost have changed since the 2009 Brattle evidence.

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

13.5 With respect to reference (vii), can Dr. Villadsen confirm that Dr. Kolbe then used an average sample ATWACC of 7.25% that he adjusted upwards for issue costs and embedded debt costs to 7.75%?

Réponse:

Les Demanderesses considèrent que la question dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

13.6 With respect to reference (vii), can Dr. Villadsen confirm that the calculation made by Dr. Kolbe on page 58 is correct that given his 7.75% ATWACC he derived the "leverage adjusted" equity cost of 12.39% by inserting the book value capital structure deemed by the Régie for GMI (Énergir) of 38.5% common and 7.5% preferred shares at 5.22%?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

13.7 Can Dr. Villadsen please confirm that in her Figure 25 on page 71 the unlevered equity cost of 7.6% is her direct estimate from her sample of Canadian Utilities and explains why it differs across the three adjustment methods given it is at Énergir's existing equity ratio and not adjusted for a financial leverage difference?

Réponse:

Not confirmed. See response to Régie EGI-18.3, Request Series 6 and Booth Request 12.1. Figure 25 reflects leverage adjustments at 40.0% and 46% equity capital structure.

13.8 Can Dr. Villadsen show how the 8.5% equity cost is calculated from the 4.8% ATWACC and provides the calculation equivalent to that of Dr. Kolbe in 2009 page 58?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. De plus, elles ne portent pas sur la preuve déposée par les Demanderesses.

13.9 In terms of the Hamada adjustments, can Dr. Villadsen confirm that they are derived from a model that assumes there is a tax advantage to issuing debt that flows to shareholders, but that for a regulated firm that advantage flows to ratepayers. If not, please explain why not and where Professor Gordon's critique of the M&M tax corrected empirical tests were incorrect.

Réponse:

Not confirmed. As discussed in the Technical Appendix to Dr. Villadsen's evidence (Exhibit EGI-1, B-0015), the beta adjustment methodology developed by Professor Robert S. Hamada accounts for the tax advantage of issuing debt in its derivation. Another beta adjustment methodology developed by Harris and Pringle does not include an adjustment for the corporate tax deduction. Dr. Villadsen also does not agree with the assertion that, for a regulated utility, this advantage would only flow to rate payers. Rate payers would certainly benefit through lower borrowing costs to finance the construction of utility assets. However, utility shareholders also benefit through lower taxable income which increase cash flow available for equity holders.

13.10 Can Dr. Villadsen confirm that regardless of the ATWACC versus adjusted beta estimates versus the ECAPM estimates her values are consistently much lower than those of Dr. Kolbe and Vilbert in 2009 when the Régie awarded GMI an allowed ROE of 9.20% and not the ATWACC generated estimate of 12.39%; a difference of 3.19%. If not, why not.

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier et constitue en fait une opinion.

13.11 With respect to reference (viii), can Dr. Villadsen confirm that in 2009 IGUA recommended that GMI be allowed the 8.64% ROE that resulted from the application of the ROE adjustment formula at the time which was below the Régie's allowed ROE partly due to a 0.25%-0.55% allowance the Régie made for the effects of the financial crisis?

Réponse:

Dr. Villadsen confirms that that in 2009 the IGUA recommended an allowed ROE of 8.64% for 2010 due to the continued application of the automatic adjustment formula (AAF). This recommendation is below the authorized ROE for Gaz Metro of 9.20%. In paragraph 211, the Régie stated that it would not rely on the ROE derived from the AAF due to unusual market conditions and instead undertook a full determination process to set the allowed ROE.

In the full determination process, the Régie found the resulting ROEs for Gaz Metro to range from 7.78% to 8.91% before adjustment for the effects of the financial crisis and 8.03% to 9.46 after adjustment. The 8.64% recommended by IGUA was below the "Top

of range" estimates established by the Régie, even before the financial crisis adjustment.

13.12 With respect to references (v) and (ix), can Dr. Villadsen confirm that the Régie then adjusted its automatic ROE formula to include a 0.50 adjustment to changes in utility borrowing spreads in the 2010 Gazifère decision that it was then adopted for GMI in 2011?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. Par ailleurs, les décisions de la Régie font preuve de leur contenu.

13.13 With respect to reference (ii), can Dr. Villadsen confirm that in its 2009 Decision D-2009-156 paragraph 299 the Régie rejected the ROE recommandation based on the ATWACC market value approach and had explained why the approach was not acceptable on pages 12-15 of its decision.

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier. Par ailleurs, les décisions de la Régie font preuve de leur contenu.

13.14 Can Dr. Villadsen explain why she is presenting results from a model that the Régie has specifically rejected after considerable hearing time was devoted to it when her current application looks almost identical to the evidence of Drs. Vilbert and Kolbe in that hearing?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier et constitue en fait une opinion.

RETURN ON EQUITY AND BOOK VALUE

14. **References: (i) EGI-1, exhibit B-0015, p. 8, fig. 1 and 2.**
(ii) Enbridge to sell stake in Noverco for $1.14 billion
(iii) R-3690-2009, Written Evidence of Michael J. Vilbert.
(iv) R-3690-2009, Written Evidence of A. Lawrence Kolbe, p. 57.
(v) Kolbe, Read and Hall, The Cost of Capital, MIT Press, pp. 25 - 32.
(vi) R-3690-2009, D-2009-156, par. 301.

Preamble:

(i) The model assumptions underlying Dr. Villadsen's estimates.

Requests:

14.1 Would Dr. Villadsen accept that her estimates like those of Dr. Vilbert and Kolbe in 2009 are based on methodologies that the Régie has specifically rejected, namely betas adjusted toward 1.0, the ECAPM and an ATWACC leverage adjustment? If not please explain where her evidence substantially deviates from theirs?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier et constitue en fait une opinion.

14.2 With respect to reference (iv) and (vi), given that Dr. Kolbe recommended an ROE of 12.39% in 2009 and the Régie awarded 9.20%, would Dr. Villadsen accept that in her judgment the Régie allowed an unfair and unreasonable ROE for GMI? If not please explain why not given the Brattle estimates at that time?

Réponse:

Les Demanderesses considèrent que la demande dépasse le cadre du présent dossier et constitue en fait une opinion.

14.3 Would Dr. Villadsen accept that allowing an unreasonably low allowed ROE by 3.19% (12.39% - 9.20%) should have caused GMI's utility assets to sell below book value as explained by Kolbe, Read and Hall in their 1986 monograph, The Cost of Capital, MIT Press, pages 25-32?

Réponse:

Dr. Villadsen has not reviewed and has no opinion of Dr. Kolbe's recommended ROE, the Régie's awarded ROE, and the impact on the financial performance of GMI's utility assets following the 2009 decision.

14.4 Did Dr. Villadsen check the trading values of the then GMI limited partnership units traded on the Toronto Stock Exchange to see whether they did indeed trade below book value after the Régie's decision?

Réponse:

Please see response to Request 14.3.

14.5 Is Dr. Villadsen aware that Enbridge Inc., sold a subsidiary's 38.9% interest in Noverco to Trencap limited partners for $1.14 billion in 2021 and that price valued Noverco at 29 times GAAP earnings? Can Dr. Villadsen please provide the 2021 year end PE ratio for each of the utilities in her samples and indicate whether the sale price was at a distressed price due to the unreasonable and unfair allowed ROE for Énergir based on these PE ratios.

Réponse:

Dr. Villadsen's Direct Testimony and supporting work papers rely on financial data as of June 30, 2021. If Dr. Booth wants financial data beyond what was provided in support of Dr. Villadsen's Direct Testimony or was requested by the Régie as part of D-2022-006, he is welcome to retrieve the data.

Dr. Villadsen has not reviewed information related to Enbridge's sale of its interest in Noverco as part of her Direct Testimony.

14.6 Can Dr. Villadsen please provide the book value of Énergir and indicate what the price to book ratio of Trencap's purchase for Enbridge's share of Noverco was in 2021.

Réponse:

Dr. Villadsen finds this question to be irrelevant to the current proceeding. The price-to-book ratio of the transaction would reflect the valuation of all assets held by Noverco, include utility subsidiaries outside of Quebec, such as Green Mountain in Vermont. It would also reflect any potential growth opportunities. It is not a relevant comparison for the cost of capital for Énergir s.e.c., Intragaz L.P, nor Gazifere Inc.

SAMPLES

15. **Reference: (i) EGI-1, exhibit B-0015, p. 78, fig. 31 and 32.**

Preamble:

(i) Dr. Villadsen's estimates relies on three samples of companies and in part on the dividend growth (DCF) model.

Requests:

15.1 Please provide the dividend per share, earnings per share, and book value per share for Énergir (GMI), Gazifère and Intragaz and all companies in Dr. Villadsen's three samples for each year since 2000.

Réponse:

Dr. Villadsen has provided historical financial data on the proxy sample companies to support her analysis as part of her Direct Testimony. She also provided additional evidence as part of the Régie's request in D-2022-006. To the extent that Dr. Booth wants additional historic data that goes beyond what was relied upon for Dr. Villadsen's analyses, he is welcome to download the additional data.

15.2 Please provide the average stock price for each company in her sample back to 2000 (and explain how it is calculated), the price to book ratio and the earned ROE.

Réponse:

Please see response to Request 15.1.

15.3 Where possible please provide the allowed ROE of each operating company in her three samples of utility holding companies going back to 2000.

Réponse:

Please see response to Request 15.1.

15.4 Can Dr. Villadsen please indicate when she or other Brattle witnesses started using each company in her existing sample to verify that data back to 2020 is available in prior Brattle testimony?

Réponse:

Dr. Villadsen assesses whether a company is suitable for inclusion in her sample at the time of estimation; see Q/A 47-53 for specifics as to how she selected her sample companies.

ATWACC APPLICATION

16. **References: (i) EGI-1, exhibit B-0015, pp. 154-155 and 160-161.**
(ii) Alberta EUB, Decision U-99099, p. 303.

Preamble:

(i) Dr. Villadsen's appendices, for example BV 4.7 and BV 4.11, calculate the ATWACC for the firms in her samples.

Requests:

16.1 Please calculate the ATWACC consistent with the decision of the Alberta EUB (Decision U-99099, page 303) that indicated that for regulatory purposes the ATWACC needs to be calculated with book value weights. For this purpose, please use the latest quarterly (interim) financial statements at the time that Dr. Villadsen prepared her appendices.

Réponse:

Dr. Villadsen has not performed this calculation because the Alberta EUB's decision is not relevant to the current proceeding. Dr. Booth can perform the requested calculation if desired.

16.2 Can Dr. Villadsen please estimate the fair ROE for each of the three samples of firms at the current regulated book weights and the ATWACC calculated in 16.1 above consistent with the Alberta EUB decision referenced above.

Réponse:

Dr. Villadsen has not performed this calculation because the Alberta EUB's decision is not relevant to the current proceeding. Dr. Booth can perform the requested calculation.