

Régie de l'énergie

Decision D-2011-182/File R-3752-2011

English Version

« Section 4.3 – Rate of return »

Note : This document provides a translation of pages 46 to 75 of Decision D-2011-182 rendered on November 25, 2011. It in no way replaces the Decision. Only the full French text of the Decision has legal force.

4.3 RATE OF RETURN

4.3.1 LEGAL FRAMEWORK

[175] Pursuant to section 31 of the Act, the Régie regulates natural gas distribution activities in Québec, including those to which Gaz Métro holds exclusive rights.

[176] The process by which the Régie establishes a rate of return on equity (ROE) is governed by various provisions of the Act. When the Régie fixes natural gas rates, those rates must be fair and reasonable [subsection 49(7)]. The rates it fixes must allow the Distributor a reasonable return on the rate base [subsection 49(3)]. Furthermore, in setting rates, the Régie must ensure that financial ratios are maintained [subsection 49(5)]. However, the tariffs must not impose higher rates or more onerous conditions than are necessary to cover capital and operating costs, to maintain the Distributor's stability and the normal development of its distribution system, and to provide a reasonable return on the rate base (section 51).

[177] The reasonable return standard and the three criteria on which it is based were not at issue in this case. In Decision D-2009-156,⁷⁰ the Régie described its role and powers with respect to setting a distributor's rate of return. After reviewing the case law established over the years by higher courts in Canada and the US, the Régie referred to the three criteria that regulators have historically applied to determine the reasonable return standard, namely the comparable investment, financial integrity and capital attraction requirements.

[178] Based on these three criteria, a reasonable return on equity (ROE) should:

- be comparable to the return available from the application of the invested capital to other enterprises of like risk (comparable investment requirement);
- permit incremental capital to be attracted to the enterprise on reasonable terms and conditions (capital attraction requirement);
- enable the financial integrity of the regulated enterprise to be maintained (financial integrity requirement).

⁷⁰ File R-3690-2009.

[179] In Decision D-2009-156, the Régie found that these criteria enjoy consensus support and may be used to guide the exercise of its authority to determine a reasonable rate of return.

[180] In the same Decision, the Régie noted that its duty in this respect is to determine a reasonable rate of return and that the method it uses is a matter of discretion. The Régie mentioned that the courts have allowed regulatory agencies wide latitude and discretion in choosing the best method for setting a reasonable ROE.

4.3.2 RATE OF RETURN

4.3.2.1 Cost of equity models

[181] The experts who testified used different approaches and models to calculate Gaz Métro's ROE.

[182] The expert retained by Gaz Métro, Dr. Morin, used the Capital Asset Pricing Model (CAPM), the Empirical Capital Asset Pricing Model (ECAPM), the Discounted Cash Flows model (DCF), the historical risk premium of regulated companies based on realized returns on US indices and the historical risk premium of regulated companies, based on authorized ROEs in the US. The IGUA expert, Dr. Booth, used the CAPM and checked the results using the DCF model,⁷¹ applied to the Canadian market as a whole rather than a specific security.

[183] The CAPM is expressed by the following equation:

$$K = R_f + \beta*(R_m - R_f)$$

[184] This equation represents the rate of return (K) that an investor expects to receive on an investment in a security with a specified level of risk. The expected return on this security (K) equals the return on a risk-free investment (R_f) plus a risk premium. The risk premium is specific to the security under consideration and is proportionate to the market

⁷¹ Exhibit C-ACIG-0015, page 66.

risk ($R_m - R_f$), which is estimated on the basis of the difference between the rates of return generated by a diversified portfolio (R_m) and by a risk-free investment (R_f). The relationship between market risk and the risk associated with the security under consideration is expressed by the beta factor (β).

[185] Dr. Booth's calculations using the CAPM produced a ROE in the 6.75%-7.80% range, before flotation costs, the adjustment for Gaz Métro's risk and the credit spreads between the yields on long-term bonds issued by Canadian regulated companies and on government bonds. After taking these factors into account, Dr. Booth recommended an authorized ROE of 8.1% for Gaz Métro, the mid-point of his 7.5%-8.7% range.

[186] Dr. Morin's calculations using the CAPM produced a ROE of 9.09%, before flotation costs and the adjustment for Gaz Métro's risk.

[187] The ECAPM is expressed by the following equation:

$$K = \alpha + R_f + \beta*(R_m - R_f - \alpha)$$

[188] The ECAPM aims to correct the downward bias produced by the CAPM for companies with a beta less than 1. In the literature, this bias has been reported by studies of the risk-free rate calculated on the basis of the 30-day return on 90-day T-Bills. The correction produced by the introduction of an alpha factor (α) in the case of the ECAPM results in an increase in the ordinate at the origin and a reduction of the slope of the linear relationship.

[189] According to the IGUA expert, there is no longer any reason to correct for this bias when government long bond yields are used to calculate the risk-free rate. He described Dr. Morin's ECAPM as a double-beta adjustment model⁷² when the ECAPM is used with adjusted betas. He argued that empirical data does not warrant the use of adjusted betas in the ECAPM.

[190] The Gaz Métro expert disagreed with this position and argued that using long-term bond yields only partially corrects the bias.⁷³

⁷² Exhibit C-ACIG-0015, page 46.

⁷³ Exhibit B-0058, page 42.

[191] Dr. Morin used the DCF model to calculate Gaz Métro's ROE. Dr. Booth used the DCF model only to check the results produced by the CAPM for the Canadian market as a whole. Under the DCF model, the price (P) of a share equals the present value of its future dividends, which are discounted at rate k and grow at rate g indefinitely.

[192] The DCF model is therefore expressed by the equation:

$$P = D_1 / (k - g)$$

or, written another way

$$k = D_1 / P + g$$

where

k = rate of return on equity

D₁ = dividend paid in year 1

P = market price of share

g = dividend growth rate

[193] Dr. Morin applied the DCF model using financial analysts' forecasts, for different US indices. According to Dr. Morin, applying the DCF model to Canadian regulated companies would probably be unreliable as there are few regulated Canadian companies, there have been many changes in ownership and corporate restructurings, their securities are not heavily traded, there are few comparables with a history of homogeneous financial data, and finally it is difficult to obtain a reliable estimator of the dividend growth rate as financial analysts do not produce growth forecasts for Canadian regulated companies.⁷⁴

[194] Dr. Morin submitted financial analysts' constant growth rate forecasts with infinite periods for different US indices:

- DCF model - Natural Gas Utilities Value Line Growth – 4.6%;
- DCF model - Natural Gas Utilities Zacks Growth – 4.7%;

⁷⁴ Exhibit B-0058, page 52.

- DCF model - Combination Gas & Elec Utilities Value Line Growth – 6.9%;
- DCF model - Combination Gas & Elec Utilities Zacks Growth – 5.8%.

[195] Based on these growth estimates, he submitted regulated US companies' estimated returns for different US indices, before flotation costs and adjustment for a specific company's risk:

- DCF model - Natural Gas Utilities Value Line Growth – 8.6%;
- DCF model - Natural Gas Utilities Zacks Growth – 8.6%;
- DCF model - Combination Gas & Elec Utilities Value Line Growth – 10.8%;
- DCF model - Combination Gas & Elec Utilities Zacks Growth – 10.3%.

[196] Dr. Morin also used realized returns over the 1930-2010 period of the S&P Utility Index, which is made up of regulated US natural gas and electricity companies, to calculate an historical risk premium. From the Index's annual returns, he subtracted annual interest income on US government long bonds, excluding capital gains and losses, to calculate the risk premium for the period. He then added this risk premium to his projected yield on 30-year Canada bonds for the year 2012, which was 4.4%. He repeated the same calculation using the Moody's Natural Gas Distribution index for the 1955-2001 period.

[197] Dr. Morin's calculations produced a ROE of 9.9% with the S&P Utility Index and 10.1% with the Moody's Natural Gas Distribution index, before flotation costs and the adjustment for a specific company's risk.

[198] Finally, Dr. Morin calculated an implied risk premium for US regulated companies based on nearly 600 rate of return decisions by US regulatory agencies over the 1986-2010 period, by comparing the returns allowed by US regulatory agencies with US long bond yields, excluding capital gains and losses. He then added this risk premium to his projected yield on 30-year Canada bonds for the year 2012, which was 4.4%. Flotation costs are included in the premium as they are included in the ROE authorized by US regulatory agencies.

[199] In the latter case, Dr. Morin's calculations produced a ROE of 10.6%, including flotation costs but before factoring in the adjustment for a specific company's risk.

[200] The Régie has already ruled on the ECAPM.⁷⁵ In the Régie's view, there is no new information that would warrant a reconsideration of this model.

[201] Regarding the model based on the historical risk premium of regulated companies calculated on realized returns on US indices, the Régie notes that returns on the S&P Utility and Moody's Natural Gas Distribution indices are based on the realized returns of US holding companies, which may have both regulated and non-regulated assets.

[202] The Régie has misgivings about the results produced by this model. The Régie notes a significant difference between the 5.5%-5.7% risk premium calculated on the basis of these indices and the 4.7% figure produced by the CAPM calculation submitted by Dr. Morin, based on a 6.7% market risk premium and a beta of 0.70. Using this same beta and the 5.5%-5.7% risk premiums yielded by the S&P Utility and Moody's Natural Gas Distribution indices in the US, we obtain a market risk premium in the order of 7.8%-8.1%, which the Régie does not consider to be consistent with observed historical facts.

[203] Regarding the model that calculates the historical risk premium of regulated companies on the basis of authorized ROEs in the US, the Régie notes that the logic is circular. At the hearing, Dr. Morin stated the following with respect to circularity:⁷⁶

[translation]

A. Your question raises some very interesting points about regulation. It is the well-known circular argument problem. If you look at yourself in a mirror, nothing will ever change. The economy could collapse and if everyone has the same rate of return it is as if you are looking in a mirror.

So, what financial experts do to try to get around this circularity problem is to examine market data, betas, stock market prices, the CAPM method, the DCF method, which minimize the circularity factor. You have probably noticed that in my testimony I rarely if ever refer to what other regulators have done with respect to the rate of return because it becomes circular. So, we avoid this circularity by using market data.

⁷⁵ Decision D-2003-93, file R-3492-2002, page 71.

⁷⁶ Exhibit A-0051, pages 159-160.

[204] With respect to the DCF model, the Régie is of the view that it entails some practical difficulties, including calculation of the dividend growth rates for the selected securities. The Régie notes that the dividend growth rate calculation is a projection based on financial analysts' forecasts. The Régie also notes that application of this model is based solely on US data.

[205] **In light of the evidence, the Régie has decided to rely primarily on the CAPM in this decision.** This is the method the Régie has applied in previous decisions. The CAPM is recognized and used both in financial circles and by the majority of the experts appearing before regulatory bodies.

[206] However, the use of this model does entail difficulties which the Régie addresses in greater detail below.

[207] For reasons of caution, as no one model can perfectly reproduce investor expectations of return, the Régie will take into account, for the purpose of determining Gaz Métro's ROE, the results of the DCF model, despite the weaknesses noted above.

RISK-FREE RATE

[208] The CAPM model requires the establishment of a risk-free rate (R_f), to which the company's risk premium is then added. The usual practice is to use the 30-year Government of Canada bond yield.

[209] Dr. Morin suggested a risk-free rate of 4.40%⁷⁷ for calculating the CAPM while Dr. Booth suggested 4.50%.⁷⁸

[210] Finally, the risk-free rate based on the Consensus Forecasts of August 2011 and the yield spread between Government of Canada 10-year and 30-year bonds for the previous month, as filed by Gaz Métro, is 3.91%.⁷⁹

[211] **Based on the evidence in the record, the Régie determines the risk-free rate to be in the range of 3.91%-4.50%.**

⁷⁷ Exhibit B-0058, pages 22-25.

⁷⁸ Exhibit C-ACIG-0015, pages 31-33.

⁷⁹ Exhibit B-0304.

MARKET RISK PREMIUM

[212] The CAPM requires the establishment of a market risk premium ($R_m - R_f$), based on which a risk premium is determined for a benchmark utility.

[213] Dr. Morin submitted a market risk premium of 6.70% based on studies using historical data or forecasts.⁸⁰ The beginning and ending dates of the historical data series vary from one study to another.

[214] Dr. Booth submitted market risk premium estimates based on data series covering periods beginning in 1926 and 1957, and ending in 2010.⁸¹ His calculations were based on arithmetic and geometric means and the ordinary least squares method. He proposed a market risk premium of 5.5%. His recommendation is supported by a study by Professor Fernandez, the results of which were based on the opinions of a sample of finance professors, financial analysts and corporate executives.⁸²

[215] The Régie notes that it has ruled in the past on the use of arithmetic means of historical data series for the purpose of establishing the market risk premium, and on data sources for establishing that premium.⁸³ The Régie will base its assessment on historical data derived from both Canadian and US studies that provide access to reliable, regularly updated numbers.

[216] The Régie will continue calculating the market risk premium on the basis of the arithmetic mean return observed on the markets. However, the choice of reference period for establishing the risk premium raises certain issues: the mean may vary significantly depending on the beginning and ending dates of the selected data series. Therefore, the Régie has chosen to assign the greatest weighting to long-period means.

[217] The Régie also notes that in Decision D-2009-156,⁸⁴ it used Canadian and US data in equal proportions for the purpose of assessing the market risk premium. In view of the evidence in the present case, the Régie will use the same approach.

⁸⁰ Exhibit B-0273, page 17.

⁸¹ Exhibit C-ACIG-0017, pages 14, 15 and 26.

⁸² Exhibit C-ACIG-0015, page 52.

⁸³ Decision D-2003-93, file R-3492-2002, pages 73-74.

⁸⁴ Decision D-2009-156, file R-3690-2009, page 62.

[218] Based on the evidence in the record, the Régie determines the market risk premium to be in the range of 5.50%-5.75%.

RISK FOR A BENCHMARK UTILITY

[219] For the purposes of the standalone principle, the Régie defines the benchmark utility as a utility with 100% regulated operations and a low risk level. The risk level is measured by the beta factor (β), which represents the risk differential between the benchmark utility and the broad market.

[220] Establishing the beta is one of the major difficulties in applying the CAPM. The problems relate both to establishing a reference sample that is representative of the risk associated with regulated companies in order to define the benchmark utility, and to obtaining valid data series that can support a robust estimate.

[221] Dr. Morin submitted an adjusted beta of 0.70, based on different Canadian and US indices. He justified the use of the adjusted betas on the grounds that they are published and available to investors.

[222] Dr. Booth submitted various calculations based on recent data but stated that judgement must be applied and suggested that the beta value of the benchmark utility be established on the basis of the historic mean beta of regulated companies, which he estimated at between 0.45 and 0.55. Dr. Booth used raw betas for the calculations. He stated that raw betas are published by brokerage firms such as the Royal Bank's brokerage arm.⁸⁵

[223] Dr. Morin used adjusted betas to reflect empirical research showing the tendency of beta values to converge towards 1. Dr. Booth argued, on the contrary, that as regulated companies generally have lower risk, their beta values converge towards the average beta for their group and not towards 1, which is the average beta for all companies on the market.

⁸⁵ Exhibit C-ACIG-0075.

[224] With respect to the use of adjusted betas, the Régie maintains the position it has taken in previous decisions.⁸⁶ The explanation commonly used in financial research to support an adjustment to raw beta, namely the empirically observable 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. Given the existence of exclusive distribution rights, it is difficult to see how the risk associated with the operation could increase significantly and converge towards the market risk over the years.

[225] However, this does not necessarily entirely resolve the problem of the quality of raw betas and their ability to accurately predict realized returns when applying the CAPM. It is difficult to objectively deduce the beta value from observed market data for the companies in the samples. **Therefore, based on the evidence in the record, the Régie determines the benchmark utility beta to be in the 0.50 to 0.60 range.**

GAZ MÉTRO'S LEVEL OF RISK

[226] Gaz Métro's business risk was thoroughly analyzed in 2007 and 2009. The Régie has reviewed this risk in 2011, based on the evidence in the record.

[227] Dr. Morin argued that a 40 basis-point upward adjustment is warranted because of the adjusted beta differential, the equity requirement differential according to the S&P business risk score, and his informed expert judgement.⁸⁷ He ascribed the higher risk to the make-up of Gaz Métro's customer base and its competitive position in relation to other forms of energy.

[228] Dr. Morin also stated that there are two ways to adjust for Gaz Métro's higher risk, namely through a higher rate of return or through a higher capitalization ratio or lower financial leveraging. Dr. Morin indicated that the 40 basis points are equivalent to a 4% increase in equity according to theoretical and empirical studies.⁸⁸

⁸⁶ Decision D-2010-147, file R-3724-2010; Decision D-2009-156, file R-3690-2009; Decision D-2007-116, file R-3630-2007; Decision D-2003-93, file R-3492-2002.

⁸⁷ Exhibit B-0058, page 64.

⁸⁸ Exhibit B-0058, page 77.

[229] Gaz Métro is asking for a 4-percentage-point increase in common equity from 38.5% to 42.5% and a decrease in preferred shares from 7.5% to 3.5%. Dr. Morin made a different recommendation, which he explained as follows⁸⁹:

Q.80 WHAT BUSINESS RISK AND FINANCIAL RISK PROFILE HAS S&P CURRENTLY ASSIGNED TO GMLP?

A. S&P classifies GMLP as having “excellent” business risk and “significant” financial risk. This profile indicates an implied rating of A-, that is, low single A, based on the table above. Based on this profile, the debt ratio guideline is 45%-50%, that is, an equity ratio of 50%-55%. GMLP’s equity ratio of 46% (common 38.5% plus preferred 7.5%) places the company outside those guidelines. My recommended common equity ratio in the range of 40%-45%, or 47.5% - 52.5% inclusive of preferred equity, would place the Company close to the bottom end of the S&P debt targets. [emphasis added]

[230] According to Dr. Booth, Gaz Métro’s risk has decreased since the Régie’s last decision in 2009.⁹⁰ He argued that shale gas development is an important change which has had the effect of increasing supply, and further stated that lower natural gas prices have increased its competitiveness in relation to oil and electricity.

[231] Dr. Booth noted that Gaz Métro has a higher level of business risk than its counterparts due to the make-up of its customer base. He argued, however, that its higher capitalization ratio and greater risk coverage through a number of deferred charge accounts counterbalance the higher business risk.

[232] The Régie understands that investors regard risk as consisting in the uncertainty of realizing a return on their capital within a given horizon and of recovering their capital.

[233] The Régie observes that the history of realized returns shows that Gaz Métro has been consistent in realizing its authorized ROE.⁹¹ The Régie also observes that the competitiveness of natural gas in relation to other energy sources has improved since 2009.⁹²

⁸⁹ Exhibit B-0058, pages 75-76.

⁹⁰ Exhibit C-ACIG-0015, page 2.

⁹¹ Exhibit B-0178, Gaz Métro-7, Document 12.5, page 3.

⁹² Exhibit B-0178, Gaz Métro-7, document 12.2.

[234] In the Régie's view, Gaz Métro bondholders and unitholders' perceptions of long-term risk are very similar today to what they were in 2009. The credit-rating agencies do not report any materialization of capital recovery risk in the case of regulated businesses in Québec.⁹³

[235] The Régie considers the company's overall risk to be higher than that of the benchmark utility, due to, among other things, the composition of its customer base and competition from electric power in Québec. However, its assessment also takes into account Gaz Métro's deemed capital structure, i.e. 38.5% common equity and 7.5% preferred shares, which is higher than that of the benchmark utility, and the increased risk coverage provided by deferred charge accounts.

[236] The Régie finds the company's risk has not changed materially since Decision D-2009-156, although it is still higher than that of the benchmark utility. **Based on the evidence in the record, the Régie determines that the higher risk warrants maintaining an upward adjustment, in comparison with the risk premium of the benchmark utility, in the amount of 25 to 35 basis points.**

[237] **The Régie also considers Gaz Métro's higher risk, compared with a benchmark utility, to be offset by its deemed capital structure. The Régie maintains the deemed capital structure of 38.5% common equity, 7.5% preferred shares and 54% debt.**

FLOTATION COSTS AND OTHER CAPITAL MARKET ACCESS COSTS

[238] In 2009, a detailed examination of flotation costs was conducted, based on a calculation of actual flotation expenses since 1993, as provided by Gaz Métro.

[239] Dr. Morin recommended 30 basis points in consideration of these costs.

[240] Dr. Booth recommended 50 basis points in consideration of these costs, which he stated was compatible with the practices of many other regulatory agencies.

⁹³ Exhibit B-0308, pages 7-8.

[241] Based on the evidence in the record, the Régie determines a provision for flotation costs and other costs of accessing capital markets ranging from 30 to 40 basis points, with a greater weighting at the lower end of the range.

RESULTS OF OTHER MODELS

[242] In the Régie's view, the CAPM remains the most appropriate base model to guide the determination of a reasonable rate of return on equity.

[243] However, all the experts also acknowledged that no one model can correctly represent investor expectations under all circumstances and in all phases of the economic and financial cycles. Therefore, the Régie believes that the results produced by the DCF model must be taken into account, despite the weaknesses noted above.

[244] The Régie also mentions that in its Decision D-2007-116,⁹⁴ it noted that application of the CAPM raises an additional difficulty when ROE determination occurs at a time when government bond rates diverge significantly from average rates over long periods. Since the risk premium is calculated over a long period and represents the difference between the arithmetic mean market return and the arithmetic mean government bond yield, it basically reflects prevailing conditions over that same period. The Régie concluded that an adjustment was necessary when bond market conditions varied from this mean.

[245] In view of the evidence in the present case and the comments made in its Decision D-2007-116, the Régie considers that an adjustment in the order of 25 to 50 basis points to the results produced by the CAPM is warranted under the circumstances.

COMPARISON WITH CANADIAN DISTRIBUTORS

[246] In the case at hand, Gaz Métro has produced comparative evidence on the authorized ROEs and deemed capital structures of Canadian utilities.⁹⁵

⁹⁴ File R-3630-2007.

⁹⁵ Exhibit B-0057.

[247] In response to an information request, Gaz Métro described the significant factors that have changed since Decision D-2009-156 and that have a material impact on setting the rate of return.

[translation]

Since Decision D-2009-156, the other Canadian distributors have seen much more significant changes and upward adjustments to their rates of return and capital structures than has Gaz Métro.

Furthermore, in file EB-2009-0084, the Ontario Energy Board upgraded the ROE and introduced a new automatic adjustment formula which calls for a 9.66% rate in 2011. Gaz Métro therefore expects an increase in the benchmark utilities' returns in view of the rates that Enbridge Gas Distribution and Union Gas will be allowed as of 2012.⁹⁶

[248] Below, the Régie reviews the evidence submitted by Gaz Métro. It points out, however, the risk of circularity that this exercise entails, as described by Dr. Morin.⁹⁷

Capital structure

[249] The Régie notes that the comparison of capital structures submitted by Gaz Métro does not include preferred shares.⁹⁸ In response to an information request, Gaz Métro produced a table⁹⁹ showing the proportion of preferred shares in the capital structures of the comparable utilities it identified. The Régie observes that when both common shares and preferred shares are considered, Gaz Métro is the distributor with the smallest proportion of debt in its deemed capital structure, apart from Pacific Northern Gas Ltd.'s Western Division.

[250] Gaz Métro stated that if the proportion of debt were increased from 54% to 57.5%, the financial risk would be expected to rise.¹⁰⁰

⁹⁶ Exhibit B-0178, Gaz Métro-7, Document 12.2, page 1.

⁹⁷ Exhibit A-0051, pages 159-160.

⁹⁸ Exhibit B-0057, page 7.

⁹⁹ Exhibit B-0181, page 22.

¹⁰⁰ Exhibit A-0051, page 18.

[251] In response to an information request,¹⁰¹ Dr. Morin described the effects of a high debt ratio in a capital structure:

All else remaining constant...the results of empirical studies and theoretical studies indicate that equity costs increase from 7.6 to 13.8 basis points per one percentage point increase in the debt ratio. The more recent studies indicate that the upper end of that range is more indicative of the effect on equity costs.

[252] According to Dr. Morin, an A credit rating minimizes financing costs.¹⁰² The Régie notes that Gaz Métro has a stable A credit rating, according to the S&P rating agency, with a ratio of approximately 70% debt in its actual capital structure. The Régie considers the credit rating and the information in the S&P Utility report, particularly with respect to regulated natural gas distribution activities in Québec, to be relevant information that the market uses in assessing Gaz Métro's risk, as Dr. Morin described.¹⁰³

[253] In his evidence, Dr. Morin testified that to obtain an A credit rating under S&P's guidelines, the debt ratio must be between 45% and 50%. He also testified that Gaz Métro's equity ratio should be between 40% and 45%, and between 47.5% and 52.5% counting preferred shares.¹⁰⁴

[254] The Régie is of the view that none of the Canadian comparables cited by Gaz Métro are within the S&P Utility guidelines.

[255] In its arguments, IGUA stated the following with respect to the debt ratios of the comparables:

[translation]

Mr. Cabana also failed to take into account, in his analysis, the high proportion of preferred shares in Gaz Métro's deemed capital structure. The evidence shows that Atco Gas, Terasen Gas, Enbridge Gas and Union Gas, unlike Gaz Métro, have no preferred shares in their deemed capital structure for regulatory purposes, which clearly has the effect of considerably increasing their proportion of debt when compared to Gaz Métro. [...] We see that for the years

¹⁰¹ Exhibit B-0178, Gaz Métro-7, document 12.1, page 7.

¹⁰² Exhibit B-0058, page 71.

¹⁰³ Exhibit A-0051, pages 159-160.

¹⁰⁴ Exhibit B-0058, pages 75-76.

2010 and 2011, the debt component in those companies' deemed capital structures was:

- *ATCO Gas 61.0%*
- *Terasen Gas 60.0%*
- *Enbridge Gas 64.00%*
- *Union Gas 64.00%*

*We should not underestimate the importance that the investing community attaches to these higher debt levels in assessing these companies' financial risk.*¹⁰⁵

[256] With respect to preferred shares, Dr. Booth's view is as follows:

*In the case of Gaz Metro, the 7.5% preferred share component is deemed and does not represent an increase in financial risk to the common shareholder. That is, there are no preferred share dividends that have to be paid prior to a dividend to the common shareholder. To all intents and purposes, Gaz Metro has a 46% common equity component at a cost equal to a weighted average of its allowed ROE and preferred share cost. In Dr. Booth's judgment, the additional 10% common equity component over Union and EGDI offsets Gaz Metro's higher business risk so that also allowing a higher ROE amounts to double counting. Consequently Dr. Booth does not recommend a premium to his estimate of a fair ROE for a benchmark utility.*¹⁰⁶ [emphasis added]

[257] The Régie finds that with a 54% deemed debt component, Gaz Métro has significantly less debt in its deemed capital structure than do its comparables, which reflects the fact that its risk is higher than that of a benchmark utility.

Rate of return

[258] To calculate the authorized ROE for Enbridge Gas Distribution Inc. (Enbridge) and Union Gas for 2010 and 2011, Gaz Métro used the formula that the Ontario Energy Board (OEB) has been applying since 2010 to electric power distributors. However, it is not certain that this formula will be applied to Enbridge and Union Gas. The Régie also notes that Enbridge's incentive mechanism has a five-year term, 2008-2012, with a

¹⁰⁵ Exhibit C-ACIG-0084, page 15.

¹⁰⁶ Exhibit C-ACIG-0022, pages 5 and 6.

possible extension to 2014.¹⁰⁷ As confirmed at the hearing, the authorized ROEs for Enbridge and Union Gas for 2010 and 2011 are in fact 8.39% and 8.54% respectively.¹⁰⁸ Therefore, it is the Régie's view that Gaz Métro's comparison anticipates the OEB's decisions on the allowed rate of return for Enbridge and Union Gas.

[259] Gaz Métro updated its comparison¹⁰⁹ using the authorized ROEs for Enbridge and Union Gas. It also removed Fortis BC from its sample, as it is an electric power distributor. Finally, it defended the size of its sample of Canadian companies on the grounds that, from a statistical point of view, a regulatory agency cannot establish a rate of return using a sample of just a few companies.¹¹⁰

[260] At the hearing, Gaz Métro argued that an authorized rate of return that has not been updated in five years should not be used for comparative purposes.

[261] The Régie notes that in file R-3690-2009, Gaz Métro's expert, Dr. Carpenter, used ROEs authorized by US regulatory agencies in decisions dating back as far as 1999 for purposes of comparison.¹¹¹ In the Régie's view, the ROE authorized in the last available decision should be the one used for comparison.

[262] Gaz Métro added that the realized returns of Enbridge and Union Gas were significantly higher than their authorized returns.¹¹²

[263] Dr. Morin said that the subject of realized returns was outside the scope of his testimony.¹¹³

[264] For his part, Dr. Booth made several comments on the sample of comparables submitted by Gaz Métro. He did not understand why one electric power distributor, Fortis BC, was included but not the others. He argued that P&G, Alta Gas, Gazifère, P&G Western, P&G Fort St. John and P&G Tumbler Ridge were not good comparables

¹⁰⁷ C-FCEI-0034, page 25.

¹⁰⁸ Exhibit A-0057, pages 188-189.

¹⁰⁹ Exhibit B-0306.

¹¹⁰ Exhibit B-0309, page 57.

¹¹¹ File R-3690-2009, exhibit B-28.

¹¹² Exhibit A-0057, pages 175-176.

¹¹³ Exhibit B-0178, Gaz Métro-7, Document 12.5, page 3.

because they are small companies. He further argued that the appropriate comparables for Gaz Métro are rather ATCO Gas, Terasen Gas, Union Gas and Enbridge.¹¹⁴

[265] Based on the comparable utilities identified by Dr. Booth, the Canadian Federation of Independent Business (CFIB) produced a comparison of their authorized ROEs over the 2004-2011 period. The table shows that Gaz Métro has a higher ROE than the mean for those companies.¹¹⁵

[266] The Régie deems it preferable to have a sample of a number of comparable companies. However, it believes that the decision to include or not include a company in a sample for comparative purposes must take into account factors such as market size, risk level, regulatory framework and so forth.

[267] In conclusion, the Régie finds, on the basis of this comparison with Canadian distributors, that Gaz Métro is favourably positioned in view of its deemed capital structure and authorized ROE.

COMPARISON WITH US DISTRIBUTORS

[268] The authorized ROEs of regulated Canadian companies and their US counterparts were compared at the hearing. Both Gaz Métro and IGUA officials and experts testified on the related issues.

[269] In the Régie's view, the evidence on this point filed in this case is not materially different from the evidence submitted to the Régie in 2009. The Régie does not believe that the evidence supports a different determination than the one it reached in 2009.

[270] The Régie believes that while it is clear that the ROEs authorized in the US are higher, on average, than those granted in Canada, the evidence in support of the proposition that the rates authorized in the US should be used as the yardstick for rate-setting in Québec is unconvincing. The evidence with respect to recent data on US decisions and with respect to analysis of US regulatory and institutional systems is indeed very weak. Among other things, the distributor has not demonstrated that the opportunities available on the US market are comparable in terms of risk.

¹¹⁴ Exhibit A-0051, pages 265-271.

¹¹⁵ Exhibit C-FCEI-0038, page 7.

[271] The Régie observes that Dr. Morin's evidence included realized returns calculated on the basis of consolidated data. Dr. Morin did not calculate realized returns limited to regulated operations of the companies in his sample, since he did not have that information.¹¹⁶ The Régie deems that information to be relevant. It also considers a comparison between the authorized and realized returns of the natural gas distribution operations of regulated US companies with comparable risk, over a long period, to be relevant for the purposes of this assessment.

[272] Therefore, the Régie has not seen sufficient evidence to support a finding that the two countries' regulatory, institutional, economic and financial environments, and their impact on the resulting opportunities for investors and for the regulated-rate companies, are comparable.

4.3.3 AUTOMATIC ADJUSTMENT FORMULA (AAF)

4.3.3.1 Expert McShane's evidence in file R-3724-2010

[273] In his argument on the rate of return, counsel for Gaz Métro submitted that it was inadmissible and contrary to due process for Dr. Booth to enter into evidence Ms. McShane's expert testimony in file R-3724-2010, the subject of which was Gazifère.

[translation]

And regarding paragraph 267, I say this. Witness Booth's desire to argue against the "94 McShane" model, as he referred to it in his report, on both sides of the Ottawa River is a futile exercise because the evidence in the Gazifère file is not being submitted to the Régie, and secondly it is, unfortunately, an exercise that is inadmissible in law because Ms. McShane is not here to defend her formula.

Dr. Booth neglected to respond to Dr. Morin. He has unfortunately applied himself to arguing that Ms. McShane's evidence is inadmissible. But he has the wrong case because Ms. McShane's evidence is not before you. So all his testimony is inadmissible because, unfortunately, you do not have the other side of the coin.

¹¹⁶ Exhibit B-0178, Gaz Métro-7, document 12.5, page 3.

If you want to hear Mr. Booth's testimony, in which he tries to literally crucify Ms. McShane, then you would need to have Ms. McShane's evidence, and unless I am mistaken – M^e Sarault might be able to confirm this – Ms. McShane is not a witness in this file. And Ms. McShane is not before you to respond. Because Gaz Métro did not hire her because – well, I don't know why, but Gaz Métro didn't hire her. I'm just saying. I have no idea. But it didn't hire her. On the other hand, Ms. McShane has been very successful in Ontario. I shouldn't have said that. I feel I don't know the whole story. But all I want to say, Mr. Chairman, is that it has to be one or the other: either we adjourn and bring Ms. McShane here and give us the opportunity to respond to Mr. Booth's arguments or, unfortunately for him, Mr. Booth's evidence is inadmissible. Why? Because he is responding to evidence that is not in the record and we do not have the opportunity to respond, given that Ms. McShane is not present.

It's a bit legalistic, but this is the kind of thing that ends up causing problems. So, unfortunately for Dr. Booth, I submit that the Régie cannot accept this evidence as admissible in the absence of Ms. McShane's evidence, because unfortunately you have only one side of the coin.¹¹⁷

[274] The Régie does not accept this argument. First, the Régie considers the comments by counsel for Gaz Métro to be a belated objection to the evidence. Gaz Métro failed to object to this evidence at the hearing. Only in its oral argument, after the submission of evidence by both sides was closed, did it raise the issue of due process. An objection of this type, made not at the appropriate time but in oral argument, cannot be accepted.

[275] In referring to Ms. McShane's testimony, the IGUA expert was only reporting the broad lines of a scientific debate that has been underway among Canadian regulators for several years concerning the best method for fixing a reasonable rate of return; in other words, he was giving hearsay testimony. It has long been recognized that an expert testifying before a tribunal may give hearsay evidence, which is what the IGUA expert did in reporting Ms. McShane's position. The Court of Appeal has ruled on this issue:

Now, expert witnesses, in giving opinions within their fields of expertise, are entitled to base these opinions on second-hand evidence and this will not affect the admissibility of their opinions although it may affect their weight or probative value.¹¹⁸

¹¹⁷ Exhibit A-0061 pages 250-252.

¹¹⁸ *Paillé v. Lorcon Inc.*, [1985] C.A. 528.

[276] The Régie finds that by accepting, in the alternative, that the formula used by the Régie in Decision D-2010-147, the “Gazifère formula,” be applied to it for the 2012 test year, Gaz Métro opened up for the IGUA expert discussion of the evidence that led to the adoption of that formula, particularly since no objection was raised.

[277] Finally, counsel for Gaz Métro argued that Dr. Booth did not respond to the right expert by replying to Ms. McShane, when he should have replied to Dr. Morin. Is this true? Must an expert necessarily respond to another in a rate case? The Régie does not believe so.

[278] When it fixes rates, the Régie carries out a broad consultation with all stakeholders, including the distributor. This is not a dispute giving rise to an adversarial debate but rather an inquiry through which the Régie seeks to obtain all the information needed to establish a reasonable ROE. In this context, it is desirable for experts to express their opinions, independently of all the other experts in the case, without having to respond to them specifically.

4.3.3.2 Selected adjustment formula

[279] At the Régie’s request, Gaz Métro filed its ROE calculation for 2012, based on the current adjustment formula and the 25-55 basis point adjustment for the effects of the financial crisis that was applied in the 2010 and 2011 rate years. After subtracting the 55 or 25 point adjustment for the years 2010 and 2011, the resulting rate of return is in the 8.36%-8.66% range.¹¹⁹

[280] Dr. Morin recommended a new ROE adjustment formula to take into account corporate credit spreads and the decreased sensitivity of the cost of equity to changes in government bond yields. Dr. Morin also recommended that this formula be reviewed every three years.

[281] Dr. Morin presented two analyses in support of his conclusion that the cost of equity is less sensitive to variations in government long-term bond yields than the 0.75 factor in the current formula.

¹¹⁹ Exhibit B-0304.

[282] In the first analysis, Dr. Morin performed a regression between the implied risk premium of US regulated companies based on nearly 600 ROE decisions by US regulatory agencies and US long-term bond yields for the 1986-2010 period.

[283] In the second analysis, Dr. Morin performed a regression between the implied risk premium of Canadian regulated companies based on 31 ROE decisions by the National Energy Board (NEB) between 1980 and 1994, and the yield on Government of Canada long-term bonds.

[284] Based on these results, Dr. Morin recommended the following adjustment formula, under which, as of the second year, the ROE would be equal to:

- the initial ROE;
- plus 50% of the change in the Government of Canada 30-year bond yield compared with the initial rate;
- plus 50% of the change in the yield on all long-term A-rated bonds issued by regulated Canadian companies, compared with the initial yield.

[285] Dr. Booth recommended that the formula adopted by the Régie for Gazifère be applied.¹²⁰ He commented that a factor of 0.50 for credit spreads struck him as excessive. He accepted it, however, noting that over the length of a full economic cycle, the effect is neutral. According to a Bank of Canada report, the adjustment factor for changes in the yield spread on corporate bonds related to default risk, which may be associated with a change in the cost of equity, is in the order of 37%.¹²¹

[286] Using this formula, Dr. Booth compared the ROE produced by his formula with the ROE allowed by the NEB over the 1995-2011 period.

[287] According to Dr. Booth, with an adjustment factor equal to 50% of the change in the yield on Government of Canada 30-year bonds, as suggested by Dr. Morin, this formula produces ROEs that are higher than those authorized by the NEB between 1995 and 2011. Dr. Booth argued that this implies that no Canadian regulatory agency allowed a reasonable ROE during this period. He also noted that, during the same period, Canadian regulatory agencies repeated the exercise more than once, on the basis of expert evidence.

¹²⁰ Decision D-2010-147, file R-3724-2010, Appendix 1.

¹²¹ Exhibit C-ACIG-0015, page 77.

[288] Finally, Dr. Booth believes that the Canadian economy has recovered from the last recession but that problems related to sovereign debt are impacting the global economic environment. He considers the credit spreads to be wider than what they should be in a normal economic cycle. He recommended a 25-40 basis-point adjustment for the effects of the credit spreads.

[289] The Régie accepts Dr. Booth's view that the credit spreads are still wider than what they should be in a normal economic cycle. In view of the evidence in the record and the objective of maintaining market access on reasonable terms, the Régie considers it appropriate, under the circumstances of the present case, to authorize an adjustment in consideration of the effects of credit spreads.

[290] Therefore, the Régie is setting a range of 25 to 40 basis points for the credit spread adjustment.

[291] In the Régie's view, the formula it applied for Gazifère makes it possible to appropriately adjust the authorized ROE on the basis of changes in the yield on 30-year bonds issued by regulated Canadian companies, while factoring in the credit spread that applies to Gaz Métro.

[292] The Régie is of the view that the formula it applied for Gazifère would have produced more suitable allowed ROEs during the financial crisis, although the allowed ROE would also have been more volatile. **The Régie finds that, to calculate Gaz Métro's ROE as of the 2013 rate year, it would be appropriate to replace the current formula by the formula it applied for Gazifère.**

[293] The Régie considers that, for the 2013 rate year and subsequent years, the adjustment for credit spreads will be covered by the second term of the new AAF. Therefore, if credit spreads remain wide, the adjustment will be maintained. On the other hand, if credit spreads return to normal, the adjustment will decrease.

[294] In the Régie's opinion, the yield spreads for A-rated bonds issued by regulated companies do not react in the same way as the yield spreads for A-rated bonds issued by unregulated companies throughout the economic cycle, particularly during a financial crisis. **The Régie adopts the Bloomberg C29530Y index as an estimator of the credit spreads of regulated Canadian companies. For future rate cases, the Régie therefore**

requests that Gaz Métro provide the Bloomberg data for the month of July for the purpose of applying the new formula.

[295] At the hearing, Dr. Booth testified that the Bloomberg index stood at 1.44% and 1.51% for July and August respectively.¹²² **The Régie will use the 1.5% value from the Bloomberg index for the purpose of applying the new formula.**

[296] **For the purpose of applying the new formula, the Régie also sets the risk-free rate at 4.0%.**

[297] ROE for the 2013 rate year and subsequent years will therefore be calculated in accordance with the formula shown in Appendix 2.

[298] The Régie specifies that the ROE produced by this formula will be expressed as a percentage rounded off to two decimal points.

4.3.3.2 AAF application period

[299] In oral argument,¹²³ counsel for Option Consommateur (OC), citing Ontario Energy Board (OEB) decisions and Dr. Booth's expert testimony, submitted that Gaz Métro's repeated applications to amend the AAF – three times in the last five years – undermine the benefits, in terms of regulatory effectiveness and efficiency, of applying an AAF. The intervenor was also concerned about the costs of these applications. It argued that, as the costs are borne by customers, there is no incentive for Gaz Métro to limit the number of applications. The stakeholder described Gaz Métro's strategy as the "wearing-down approach to regulation." On this point, OC was supported by other intervenors, including IGUA and Union des Municipalités du Québec (UMQ).

[300] In his response,¹²⁴ counsel for Gaz Métro argued that the Régie has a duty to ensure that the rate of return is reasonable every year. Gaz Métro submitted that it appeared before the Régie on this issue this year because it had no choice. In view of the two-year limit on the adjustment for the effects of the economic crisis, there had been an invitation to come back to discuss the adjustment to the AAF. Gaz Métro added that the

¹²² Exhibit C-ACIG-0083.

¹²³ Exhibit A-0059 pages 112-118.

¹²⁴ Exhibit A-0063 pages 203-208.

current formula, which was the same as the one used for Gazifère prior to Decision D-2010-147,¹²⁵ is no longer applicable because the situation has changed since 2009 and markets are going through a highly volatile period.

[301] Gaz Métro described the request by OC and IGUA to limit its ability to apply for review of ROE adjustment methods at its discretion as a clearly illegal and indeed punitive demand that is contrary to the principles set forth in the Act.

[302] According to Gaz Métro, this approach to rate-setting is neither serious nor reasonable.

[303] First, the Régie notes that Gaz Métro has submitted evidence in support of various methods of establishing ROE in recent years. In file R-3630-2007, it suggested using the Fama-French method. In file R-3662-2008, it suggested that the Régie not apply the AAF and increase flotation costs. In file R-3690-2009, it suggested using the ATWACC,¹²⁶ arguing that the AAF was broken. Finally, in the current case, Gaz Métro is asking the Régie to adjust its ROE and its deemed capital structure, and to amend the AAF. Gaz Métro has come to the Régie four times in five years for a review of its ROE.

[304] Contrary to the comments by counsel for OC, the purpose of Gaz Métro's applications was not necessarily to amend the AAF but rather to find the appropriate method for establishing a reasonable rate of return. While recognizing that Gaz Métro is entitled to a reasonable rate of return, the Régie is concerned about its repeated applications and the related regulatory costs.

[305] Without wanting to prevent Gaz Métro from filing an application with respect to the rate of return if the situation so warrants, the Régie believes that the effectiveness, efficiency and stability of the regulatory process support application of the AAF for a reasonably lengthy period before the factors in the formula are reviewed or before the method by which the rate of return is established is reconsidered. **Therefore, the Régie approves application of the new AAF for a period of three years starting with the 2013 rate case.**

¹²⁵ File R-3724-2000 Phases 2 and 4.

¹²⁶ After tax weighted average cost of capital (ATWACC).

[306] After that period, Gaz Métro may, if it wishes, ask the Régie to review the AAF factors or to review its rate of return. The Régie considers this to be a reasonable period in view of the sophisticated nature of the formula it has adopted and the high regulatory costs borne by Gaz Métro's customers since 2007.

RESULTS OF ANALYSIS

[307] The table below shows the values the Régie has decided to authorize for each factor.

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%

[308] Therefore, in view of all the above conclusions, the reasonable rate of return to be authorized for the Distributor is in the range of 7.71%-9.60%.

1.1.1.1 Conclusion

[309] **Given the evidence in the record and all the reasons set out above, the Régie sets Gaz Métro's return on equity (ROE) for the 2012 rate year at 8.90%. The Régie**

maintains the deemed capital structure of 38.5% common equity, 7.5% preferred shares and 54% debt.

[310] Starting with the 2013 rate year and for subsequent years, the Régie adopts the AAF described in Appendix 2 to this Decision. The Régie sets the application period of the new formula at three years, starting with the 2013 rate year.

[311] Based on a risk-free rate of 4.0%, Gaz Métro's authorized ROE reflects an implied risk premium of 4.90%. Moreover, based on the determined capital structure, an 8.90% ROE, the rate of return on preferred shares and the cost of debt, according to the record,¹²⁷ the Régie calculates the average cost of capital on the rate base at 7.50% and the projected cost of capital at 6.37%.¹²⁸

¹²⁷ Exhibit-B-0048, page 1.

¹²⁸ Exhibit-B-0232.

APPENDIX 2

AUTOMATIC ROE ADJUSTMENT FORMULA FOR GAZ MÉTRO INC. FOR 2013 AND SUBSEQUENT YEARS

Appendix 2 (3 pages)

G. B. _____

M. T. _____

J.-F. V. _____

**AUTOMATIC ROE ADJUSTMENT FORMULA FOR GAZ MÉTRO INC.
FOR 2013 AND SUBSEQUENT YEARS**

$$\text{ROE for test year } t = 8.90\% + 0.75 * (\text{PYCL}_t - 4.0\%) + 0.5 * (\text{CSRC}_t - 1.5\%)$$

where

- PYCL_t = Projected yield on Canada long-term bonds for test year t.
 CSRC_t = Credit spread between A-rated long-term bonds issued by Canadian regulated corporations and Canada long-term bonds for test year t.

The PYCL_t factor is calculated as follows:

$$\text{PYCL}_t = \left[\frac{\text{PY}_{10}\text{C}_{\text{nov},t} + \text{PY}_{10}\text{C}_{\text{aug},t}}{2} \right] + \left[\frac{\sum_i (Y_{30}\text{C}_{i,t-1} - Y_{10}\text{C}_{i,t-1})}{I} \right]$$

where

- $\text{PY}_{10}\text{C}_{\text{nov},t}$ = Projected yield on Canada 10-year bonds at the end of November in test year t-1, according to Consensus Forecasts published in August of rate year t-1.
 $\text{PY}_{10}\text{C}_{\text{aug},t}$ = Projected yield on Canada 10-year bonds at the end of August in test year t, according to Consensus Forecasts published in August of rate year t-1.
 $Y_{30}\text{C}_{i,t-1}$ = Yield on Canada 30-year bonds at the close of business on each day i in July of rate year t-1, as published by the Bank of Canada (Cansim Series V39056).
 $Y_{10}\text{C}_{i,t-1}$ = Yield on Canada 10-year bonds at the close of business on each day i in July of rate year t-1, as published by the Bank of Canada (Cansim Series V39055).
I = Number of business days in July of rate year t-1 for which the yield on Canada bonds and the yield on A-rated 30-year bonds issued by Canadian regulated corporations are published.

The CSRC_t factor shows the daily average yield spread between A-rated 30-year bonds issued by Canadian regulated corporations and Canada 30-year bonds, observed each business day i in July of rate year t-1. The CSRC_t factor is calculated as follows:

$$CSRC_t = \frac{\sum_i (Y_{30RC_{i,t-1}} - Y_{30C_{i,t-1}})}{I}$$

where

- $Y_{30RC_{i,t-1}}$ = Daily average yield on A-rated 30-year bonds issued by Canadian regulated corporations at the close of business on each day i in July of rate year $t-1$, as shown on the Bloomberg C29530Y index.
- $Y_{30C_{i,t-1}}$ = Yield on Canada 30-year bonds at the close of business on each day i in July of rate year $t-1$, as published by the Bank of Canada (Cansim Series V39056).
- I = Number of business days in July of rate year $t-1$ for which the yield on Canada bonds and the yields on A-rated 30-year bonds issued by Canadian regulated corporations are published.