Régie de l'énergie

Decision D-2010-147/File R-3724-2010

English Version

'Section 2 Rate of return (Phase 2)'

Note: This document provides a translation of pages 11 to 56 and of the Appendix 1 of Decision D-2010-147 rendered on November 26, 2010. It in no way replaces the Decision. Only the full French text of the Decision has legal force.

TABLE OF CONTENT

2. RATE OF RETURN (PHASE 2)

2.1 LEGAL FRAMEWORK

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

[23] When the Régie fixes natural gas rates, those rates must be fair and reasonable (subsection 49.7). The rate 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).

[24] In Decision D-2009-156,[1] 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 U.S., the Régie recalled the three criteria that regulators have historically applied to determine a standard reasonable return, namely the comparable investment, financial integrity and capital attraction requirements. The reasonable return standard and the three criteria on which it is based were not at issue in this case.

[25] Based on the 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);
- enable the enterprise to attract incremental capital on reasonable terms and conditions (capital attraction requirement);
- enable the regulated enterprise to maintain its financial integrity (financial integrity requirement).

[1] File R-3690-2009.

[26] 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.

[27] 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 recalled that the courts have allowed regulatory agencies wide latitude and discretion in choosing the best method in determining a reasonable ROE.

2.2 COST OF EQUITY MODELS

[28] The experts who testified at the hearing used different approaches and models to recommend a reasonable rate of return for Gazifère.

[29] Gazifère's expert, Kathleen McShane, used a number of risk premium-based models to calculate the cost of equity, including the Capital Asset Pricing Model (CAPM), the single and two variable Discounted Cash Flows (DCF) models, and a model based on historical risk premiums for a benchmark utility. She concluded her presentation by calculating the required return by means of the direct DCF model, with a number of variants.

[30] IGUA's expert, Dr. Laurence Booth, used the CAPM and a two-factor model based on the market risk premium and the risk premium on Canada long-term bonds.

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

$$K = Rf + \beta*(Rm - Rf)$$

[32] This equation represents the rate of return (K) that an investor expects to realize on an investment in a security with a specified level of risk. The expected return (K) on this security equals the return on a risk-free investment (Rf) plus a risk premium. The risk premium is specific to the security under consideration and is proportionate to the market risk (Rm - Rf), which is estimated on the basis of

the difference between the rates of return generated by a diversified portfolio (Rm) and by a risk-free investment (Rf). The proportional relationship between market risk and the risk associated with the security under consideration is expressed by the beta factor (β).

[33] Dr. Booth's calculations, using his models, yielded a ROE of 7.75%, before issuance costs and the risk adjustment for Gazifère. Dr. Booth recommended an allowed ROE of 8.5% for Gazifère.

[34] Ms. McShane's calculations using the CAPM yielded a ROE of 9.25% as of the filing of her evidence and 8.71% when they were updated at the hearing, before issuance costs and the risk adjustment for Gazifère.

[35] The risk premium model based on the one- and two-variable DCF models (indirect method) calculates a risk premium for regulated companies from a sample of U.S. companies. The monthly cost of equity is the sum of two factors: the consensus forecast by financial analysts for long-term standardized earnings growth and the expected dividend return. The risk premium is equal to the difference between the average monthly cost of equity for the sample and the month-end return on 30-year U.S. Treasury bonds.[2]

[36] In applying the DCF model, Ms. McShane performed two linear regressions to adjust the risk premium produced by her calculation. First, she used the 30-year U.S. Treasury bond yield as an explanatory variable. Secondly, she added a second explanatory variable consisting of the yield spread between A-rated long-term bonds issued by regulated U.S. companies and 30-year U.S. Treasury bonds.

[37] Ms. McShane's calculations using this model produced a ROE of 9.40% at the filing of the evidence and 9.10% when they were updated at the hearing, taking into account issuance costs and the adjustment for Gazifère's risk.

[38] The model based on the historical risk premium for regulated companies was calculated on the realized returns on regulated Canadian and U.S. companies. Ms. McShane used an average realized return of 11.5% for these regulated companies. She then subtracted from this figure the projected long-term yield on

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2 Exhibit B-1, GI-4, document 1, p. 51.

30-year Canada bonds, which is 5.25%. She therefore calculated a 6.25% risk premium for regulated companies. Finally, she added this risk premium to her projected yield on 30-year Canada bonds for the year 2011, which was 4.75%.

[39] Ms. McShane's calculations using this model produced a ROE of 11% at the filing of the evidence and 10.40% when they were updated at the hearing, taking into account issuance costs and the adjustment for Gazifère's risk.

[40] As an alternative to risk premium-based models, Ms. McShane calculated the expected return directly using the DCF model, where 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.

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
$D_1 =$ dividend paid in year 1
$P =$ market price of share
$g =$ dividend growth rate

[41] Ms. McShane's calculations using this model produced a ROE of 10% as of the filing of her evidence and remained the same when they were updated at the hearing, before factoring in issuance costs and the risk adjustment for Gazifère.

[42] Ms. McShane concluded that her calculations using the risk premium and DCF models produced a ROE of 10% at the filing of her evidence and 9.70%

when updated at the hearing, before factoring in issuance costs and the risk adjustment for Gazifère.

[43] Ms. McShane recommended an allowed ROE of 11.25% for Gazifère at the filing of her evidence and 10.95% when updated at the hearing.

[44] The Régie finds the result produced by the model based on the historical risk premium for a benchmark utility, as suggested by Ms. McShane, surprising. The Régie notes a significant difference between the 6.25% benchmark utility risk premium and the 4.56% figure produced by the CAPM calculation submitted by Ms. McShane, based on a 6.25% market risk premium and a beta of 0.68.

[45] However, at the hearing,[3] Ms. McShane suggested that the Régie should consider these tests individually and recognize that they provide a different perspective on what the return might be. Ms. McShane argued that if the CAPM worked perfectly, then the risk premium for regulated companies would be lower than the market risk premium. Nevertheless, the Régie considers the benchmark utility risk premium produced by the historical risk premium model to be high.

[46] Regarding the DFC 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 applications of this model, by both the direct and indirect methods, were based only on U.S. data. The Régie also notes that the application of the indirect DCF model was based on the realized returns of U.S. holding companies with both regulated and unregulated assets.

[47] **In view of the evidence, the Régie has decided to rely primarily on the Capital Asset Pricing Model in this decision.** This is the method the Régie has applied in previous decisions. This model is also recognized and used both in financial circles and by the majority of the experts appearing before regulatory bodies.

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

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3 Exhibit A-35-2, pp. 27-30.

[49] 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 Gazifère's rate of return on equity, the results yielded by Ms. McShane's risk premium and DCF models, and by the multifactorial model used by Dr. Booth. The Régie deals with this subject in greater detail in paragraph 2.2.6.

2.2.1 RISK-FREE RATE

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

[51] Ms. McShane revised her risk-free rate at the hearing to 4.15% for the purpose of the risk premium-based models.[4] This rate was based on the Consensus Forecasts for the month of August 2010.[5]

[52] Dr. Booth based his assessment on the assumption of normal economic growth and an inflation rate of 2%. He suggested a risk-free rate of 4.5%.

[53] Finally, applying the usual method of calculating the risk-free rate, based on the Consensus Forecast of October 2010 and the yield spread between Government of Canada 10-year and 30-year bonds for the previous month, as filed by Gazifère, the risk-free rate is 3.644%.[6]

[54] **Based on the evidence in the record, the Régie determines the risk-free rate to be in the range of 4.15% to 4.50%.**

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4 This rate was determined to be 4.7% at the time of the filing of her evidence.
5 Consensus Forecasts, August 9, 2010.
6 Exhibit B-45, GI-30, document 5, p. 1, was filed on October 18, 2010.

2.2.2 MARKET RISK PREMIUM

[55] The CAPM requires the establishment of a market risk premium (Rm – Rf), based on which a risk premium will be determined for a typical regulated company, commonly referred to as the benchmark utility.

[56] According to Ms. McShane, the market risk premium is 6.75%. In her view, the risk premium will be higher than the historical average because future bond yields will be below historical rates while future stock market returns will be similar to historical levels. Finally, according to Ms. McShane, the effect of the financial crisis on capital markets has worn off.[7]

[57] Dr. Booth submitted market risk premium estimates based on data series covering the periods beginning in 1926 and 1957, and ending in 2009. He based his estimates 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.[8]

[58] Dr. Booth considers the economic recovery to be unsteady and the credit spreads wider than what they should be in a normal economic cycle. He recommended a 50-basis-point adjustment for the effects of the financial crisis.

[59] In Decision D-2009-156,[9] the Régie used, for the purpose of calculating the market risk premium, Canadian and U.S. data in equal proportions. In view of the evidence in the present case, the Régie will use the same approach.

[60] 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.

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7 Exhibit A-35-1, p. 32.
8 Exhibit C-2-13, Dr. Booth's evidence, pp. 40-42.
9 File R-3690-2009, p. 62.

[61] **Based on the evidence in the record, the Régie determines the market risk premium, prior to consideration of the effects of the financial crisis, to be in the range of 5.50% to 5.75%.**

[62] With respect to the effects of the financial crisis, the Régie accepts Dr. Booth's view that the economic recovery is skittish and the credit spreads are still wider than what they should be in a normal economic cycle.

[63] In view of the evidence in the record and the objective of maintaining access to the market 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 the financial crisis.

[64] **Therefore, in consideration of the effects of the financial crisis, the Régie is increasing the market risk premium by an amount ranging from 0.50% to 1.00%.**

2.2.3 BENCHMARK UTILITY RISK

[65] Dr. Booth and Ms. McShane submitted risk estimates for a benchmark utility, i.e. a utility with a low-risk profile. The benchmark utility's risk is measured by the beta factor (β), which represents the risk differential between the benchmark company and the broad market.

[66] There are significant difficulties in establishing the beta. The problems include establishing a reference sample that is representative of the risk associated with regulated companies and obtaining valid data series that can support a robust estimate.

[67] Ms. McShane presented an adjusted beta in the 0.65-0.70 range, calculated on the basis of various tests. She also presented a gross beta of 0.44 calculated by Bloomberg on the basis of a sample of Canadian companies.

[68] Dr. Booth submitted various estimates based on recent data but stated that judgement must be applied and therefore suggested that the beta value of the benchmark utility be established on the basis of the historical mean, which he estimated at between 0.45 and 0.55.

[69] Ms. McShane used adjusted betas to reflect empirical research showing the tendency of beta values to converge towards 1. Dr. Booth argued, on the contrary, that the beta values of regulated companies converge towards their own average and not towards 1.

[70] Upon review, the Régie maintains the position it adopted in its previous decisions[10] to the effect that the beta values of regulated companies converge towards their own mean and not the market mean, which by definition is 1.

[71] **Based on the evidence in the record, the Régie determines the benchmark utility beta to be in the 0.50-0.55 range.**

2.2.4 GAZIFÈRE'S RISK

[72] Gazifère's business risk, as compared with the benchmark utility's risk, was thoroughly analyzed in 1999. The Régie will review this risk again in the current rate case.

[73] Ms. Vandal-Parent, a Gazifère witness, stated at the hearing that the business relationships established with construction contractors could be eroded, as the latter could pull out of those relationships. According to her, Gazifère's sustained growth of recent years in the residential sector has been due, in part, to Gazifère's business relationships with those contractors. If they were to abandon those relationships, Gazifère's growth could be limited.[11]

[74] According to Ms. McShane, investors regard business risk as the uncertainty of realizing a return on their capital and recovering their capital.

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[10] Decision D-2009-156, file R-3690-2009; Decision D-2007-116, file R-3630-2007; Decision D-2003-93, file R-3492-2002 Phase 1; and Decision D-2002-95, file R-3401-98.

[11] Exhibit A-35-1, p. 19.

[75] Ms. McShane indicated that Gazifère is a small regulated company for which there is no direct comparable. She used her judgment to quantify Gazifère's additional risk compared with that of the benchmark utility.

[76] She presented a table of Canadian regulatory decisions. She acknowledged the circularity of the comparison but argued that the information was useful for the purpose of her analysis.

[77] Ms. McShane then discussed the stand-alone principle, by which Gazifère's cost of capital is determined, on a theoretical basis, as if it were an entirely independent company. It operates according to the economic principle of opportunity costs, where the cost of each resource, including capital, is considered to be equivalent to the cost of the alternatives. Therefore, the cost of equity is equal to the opportunity cost to investors, adjusted on the basis of risk, regardless of the identity of the investors. The relevant factors that must be taken into account to establish Gazifère's cost of capital are hence the alternatives available to investors and the risks and returns associated with those alternatives. Because of its small size, Gazifère cannot obtain a credit rating higher than BBB.

[78] Starting from this stand-alone principle, Ms. McShane used the CAPM and DCF models to establish an additional risk premium in the 50-80 basis point range for a regulated company with a BBB rating, compared with an A-rated benchmark utility.

[79] Ms. McShane also cited a study by Ibbotson Associates to estimate a small company's additional risk. That study shows that small companies have higher betas than large companies and concludes that the difference between the betas of small and medium-sized companies should be 0.32. In all, the additional risk associated with a small company is approximately 200 basis points. It should be noted, however, that this study covers all companies, not just regulated companies.

[80] Ms. McShane concluded by recommending a risk premium of an additional 50 basis points compared with the benchmark utility.

[81] IGUA argued that the evidence does not show a particularly high increased risk for Gazifère, especially compared with what it was in 1999. The evidence submitted by IGUA's expert and analyst tend to show that the risk is quite limited.

[82] According to IGUA's analysis, a number of factors demonstrate that Gazifère's business risk is lower than it was in 1999. IGUA noted the changed composition of the customer base and the growth of the service economy in Canada's National Capital Region, in connection with Gazifère's reduced dependence on the industrial sector.

[83] According to IGUA, Gazifère is operating its distribution business in a favourable, above-average economic environment. Furthermore, Gazifère has demonstrated a strong capacity to over-earn its allowed ROE, even during the recent financial crisis.

[84] IGUA also noted that 93% of Gazifère's customer base is made up of customers who use natural gas for space and water heating, and cannot readily switch to another energy source. These are captive customers and more difficult to lose than interruptible industrial customers, which have the ability to use other energy sources. Furthermore, in view of the current composition of its customer base, Gazifère is less dependent on industrial customers, who now account for only 6% of its revenues, including 4.5% from the pulp and paper industry.

[85] IGUA observed that Gazifère is in an advantageous competitive position against heating oil, due to the current price of natural gas. Gazifère's competitive position against electric power has also improved since 1999. A rate freeze on electricity was in effect in 1999 and continued until 2004, since which time there have been regular increases in electricity rates. Given the need for capital investment in the power transmission and distribution systems, and higher supply costs, electricity rates can be expected to continue rising. IGUA further noted that Hydro-Québec's business strategy in the construction market is less aggressive than it was.

[86] Also, IGUA argued that lower per-customer volumes, due to, among other things, energy efficiency measures, are in no way disadvantageous to Gazifère, since they have the effect of reducing each customer's bill. As to total bill is

lower, customers are more inclined to stick with natural gas than to switch to other energy sources.

[87] IGUA added that Gazifère's incentive mechanism creates no additional short-term risk in view of, among other things, Gazifère's ability to over-earn its allowed ROE during the recent financial crisis.

[88] Finally, Dr. Booth concurred with IGUA that Gazifère's business risk has decreased slightly since 1999. Dr. Booth recommended a risk premium of an additional 25 basis points, compared with the benchmark utility.

[89] The Régie considers Gazifère's overall risk to be higher than average, due to, among other things, its size and competition from electric power in Québec. However, the Régie also takes into account the increased risk coverage provided by deferred charge accounts.

[90] The Régie finds that Gazifère's risk has not changed materially since Decision D-99-09,[12] although it remains higher than that of the benchmark utility. **Based on the evidence in the record, the Régie determines that the higher risk warrants an upward adjustment in the amount of 25-50 basis points in comparison with the benchmark utility risk premium.**

2.2.5 ISSUANCE COSTS AND OTHER CAPITAL MARKET ACCESS COSTS

[91] According to Ms. McShane, this category includes three components: issuance costs, a cushion for unexpected market conditions and the need to keep the market value of the assets above book value. She recommended 75 basis points in consideration of these costs.

[92] Dr. Booth recommended adding 50 basis points to his estimate of the required return for shareholders in order to reflect issuance costs and dilution effects. An adjustment of this type would be compatible with the practices of many other regulatory agencies.

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[12] File R-3406-98.

[93] IGUA argued that Ms. McShane's conception of these costs was broader than the traditional definition. IGUA further contended that this broader conception included relatively abstract factors that are judgement calls, such as the cushion for unexpected market conditions.

[94] The Régie considers the components used in the past to determine issuance costs and other capital market access costs to be sufficient. It does not accept Ms. McShane's proposal, which rests on a broader conception than that adopted by the Régie in its past decisions on this matter.

[95] Issuance costs were analyzed in detail in the Gaz Métro case last year. In Decision D-2009-156, the Régie determined that a provision for issuance costs and other capital market access costs in the 30-40 basis point range provided sufficient compensation. This compensation was established after reviewing Gaz Métro's actual issuance costs since 1993.

[96] Unlike the case of Gaz Métro, which issues securities on the markets in order to raise equity, in the case at hand the Régie must establish an estimator of capital market access costs for Gazifère. It will therefore proceed on a theoretical basis, using the evidence in the file, rather than on the basis of actual costs.

[97] **Therefore, the Régie determines a provision for issuance costs and other costs of accessing capital markets in the amount of 50 basis points for Gazifère.**

2.2.6 RESULTS OF OTHER MODELS

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

[99] 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 other models submitted by the experts must be taken into account.

[100] The Régie also recalls that in its Decision D-2007-116,[13] it noted that application of the CAPM raises an additional difficulty when ROE determination occurs at a time when government bond rates differ significantly from average long rates. 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 departed from this mean.

[101] **In view of the evidence in the present case, the Régie considers that an adjustment in the order of 25-50 basis points to the results produced by the Capital Asset Pricing Model is warranted under the circumstances.**

2.2.7 COMPARISON WITH U.S. UTILITIES

[102] In order to validate the tests she uses, Ms. McShane applies them to a sample of utilities. To be included in the sample, a company must issue market-traded securities. It must also have a risk profile similar to the benchmark utility. According to Ms. McShane, it is not possible to use a sample of regulated Canadian companies for the purpose of estimating the cost of capital.[14] She argued that regulated Canadian companies are very different from each other and therefore cannot be used for comparative purposes for a particular regulated company or the industry as a whole.

[103] Ms. McShane therefore uses a sample of U.S. companies to validate her test results. She argued that no adjustment is necessary since the Canadian regulatory, legal, fiscal and accounting environment is similar to that of the U.S. However, she acknowledged that regulatory enforcement is not identical.[15]

[104] To perform the various cost of capital estimation tests, Ms. McShane uses data provided by Standard and Poor's. At the hearing, she indicated that this data is based on a sample of U.S. companies with regulated and unregulated operations.

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13 File R-3630-2007, p. 28.
14 Exhibit A-35-1, pp. 35-36.
15 Exhibit B-1, GI-30, document 1, pp. 10-14.

She also indicated that she did not know the exact relationship between realized returns from just the regulated operations of the U.S. companies in her sample and allowed ROEs.[16]

[105] IGUA submitted that, in Decision D-2009-156 the Régie stated serious reservations about using a sample of U.S. utilities or of returns granted to U.S. utilities as comparables for the purpose of determining the benchmark utility ROE.

[106] IGUA repeated that, in the current case, it was not always possible to determine the realized returns generated by just the regulated operations of the U.S. companies, as opposed to the returns of the holding companies to which they belong, or to compare actual and allowed rates of return.

[107] IGUA noted that Ms. McShane had acknowledged that there is considerable volatility in actual returns when compared with allowed ROEs, which is significant for short-term risk. According to IGUA, she also acknowledged that deferred charge accounts are much more widely used in Canada, making the realized returns of Canadian utilities more stable.

[108] Finally, Dr. Booth observed in his presentation at the hearing, entitled *US Data,* that Moody's considers regulatory risk to be higher for regulated U.S. companies than for regulated Canadian companies in most cases.[17]

[109] According to Dr. Booth, the equity percentage in the capital structure of regulated U.S. companies is higher than in the case of regulated Canadian companies. Ordinarily, the higher capitalization should protect them against increased risk. Dr. Booth showed in his presentation[18] at the hearing that regulated U.S. companies have BBB credit ratings.

[110] IGUA concluded that the evidence in this case does not provide a sufficiently new perspective to support a different determination by the Régie than the one it reached in Decision D-2009-156.

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16 Exhibit A-35-1, pp. 179-180.
17 Exhibit C-2-26.
18 Exhibit C-2-26.

[111] The Régie finds the evidence in support of the proposition that the rates authorized in the U.S. should be used as the yardstick for setting a reasonable rate of return in Québec to be inconclusive. There is insufficient evidence in terms of recent data on U.S. decisions and analysis of U.S. regulatory and institutional systems. Among other things, the Distributor has not demonstrated that the opportunities available on the U.S. market are comparable in terms of risk.

[112] Further, the Régie does not believe there is sufficient evidence to demonstrate that the two countries' regulatory, institutional, economic and financial environments, and their impact on the resulting investment opportunities, are comparable.

2.2.8 RESULTS OF ANALYSIS

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

Table 1

Factor	Bottom of range	Top of range
Risk-free rate	4.15%	4.50%
Market risk premium, before adjustment for effect of financial crisis	5.50%	5.75%
Benchmark utility gross beta	0.50	0.55
Adjustment for Gazifère's risk	0.25%	0.50%
Issuance costs	0.50%	0.50%
Subtotal 1: Result produced by CAPM	**7.65%**	**8.66%**
Adjustment for results of other models	0.25%	0.50%
Subtotal 2: Return on equity before adjustment for effect of financial crisis	**7.90%**	**9.16%**
Adjustment for effect of financial crisis	0.25%	0.55%
Total: Return on equity after adjustment for effect of financial crisis	**8.15%**	**9.71%**

[114] In view of all the above conclusions, the ROE for Gazifère shareholders falls into the 7.90%-9.16% range before the adjustment for the effect of the financial crisis, and between 8.15% and 9.71% after the adjustment for the effect of the financial crisis.

[115] **Given the evidence in the record and all the reasons set out above, the Régie sets Gazifère's return on equity at 9.10% for the 2011 rate year. This rate includes a 30-basis-point adjustment in consideration of the effect of the financial crisis.**

2.3 AUTOMATIC ADJUSTMENT FORMULA

[116] At the Régie's request, Gazifère filed its ROE calculation for 2011, based on the current adjustment formula. It establishes the rate of return at 8.46%.[19]

[117] Ms. McShane 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.

[118] Ms. McShane presented two analyses in support of her 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. These analyses were based solely on U.S. data.

[119] Ms. McShane argued that while the two analyses yielded different estimators for the sensitivity factor, it remains that there is a positive correlation between the cost of equity and observed variations between corporate and government bond yields.

[120] In the first analysis, Ms. McShane performed a regression analysis between quarterly rates of return from 1995 to 2009, U.S. Treasury long-term bond yields, and the yield spread between bonds issued by A-rated U.S. holding companies with some regulated assets and U.S. Treasury long-term bonds.

[121] The conclusion was that for a 100-basis-point increase (decrease) in U.S. Treasury long-term bond yields, the cost of equity increases (decreases) by 47 basis points. For every 100-basis-point increase (decrease) in the yield spread between A-rated bonds issued by U.S. holding companies and U.S. Treasury long-term bonds, the cost of equity increases (decreases) by 27 basis points.

[122] Ms. McShane's second analysis used the DCF model to test the sensitivity of cost of equity during the 1995-2009 period to changes in U.S. Treasury long-term bond yields and to changes in the yield spread between bonds issued by A-rated U.S. holding companies and U.S. Treasury long-term bonds.

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[19] Exhibit B-45, GI-30, document 5.

[123] The conclusion was that for a 100-basis-point increase (decrease) in U.S. Treasury long-term bond yields, the cost of equity increases (decreases) by 65 basis points. For every 100-basis-point increase (decrease) in the yield spread between A-rated bonds issued by U.S. holding companies and U.S. Treasury long-term bonds, the cost of equity increases (decreases) by 90 basis points.

[124] On the basis of these results, Ms. McShane recommended the following adjustment formula:

The new ROE would equal:

- 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 Canadian long-term A-rated corporate bonds compared with the initial yield, based on the *DEX Long Term Index Corporate A*.

[125] Ms. McShane produced a table showing what the ROE would have been using this formula, compared with the rates of return allowed by the National Energy Board (NEB) over the 1995-2011 period.[20]

[126] Ms. McShane specified that this formula produced an average ROE of 10.6%, which is comparable to the 10.9% average rate authorized in the U.S. She therefore concluded that this formula is superior to the one the Régie uses at present because it produces results comparable to those observed in the U.S.

[127] Finally, Ms. McShane suggested that the rate of return and the formula be reviewed every five years, unless the allowed ROE produced by applying the new formula is 200 basis points higher or lower than the initially allowed rate.

[128] Dr. Booth was of the view that it is not necessary to change the current adjustment formula. In the alternative, if the Régie does decide to change the formula, he proposed another formula that takes into account variations in yields on A-rated long-term bonds issued by regulated companies.

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20 Exhibit B-1, GI-4, document 1.2, schedule 28.

[129] In the alternative, Dr. Booth proposed the following adjustment formula: The new ROE would equal:

- the initial ROE;
- plus 75% 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 30-year A-rated bonds issued by regulated Canadian companies, compared with the initial yield, based on the Bloomberg C29530Y corporate bond index (hereafter the "credit spread").

[130] Dr. Booth 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%.[21]

[131] Using this formula, Dr. Booth repeated the same exercise as Ms. McShane and calculated what ROE would have been under his formula, compared with the ROE allowed by the NEB over the 1995-2011 period.

[132] According to Dr. Booth, the rates of return produced by Ms. McShane's formula are higher than the rates allowed by the NEB between 1995 and 2011. He concluded that this implies that no Canadian regulatory agency allowed a reasonable ROE during this period. He also added that, during the same period, Canadian regulatory agencies performed the exercise more than once, on the basis of expert evidence.

[133] According to Dr. Booth, the difference between the rates of return produced by his formula and those allowed by the NEB is minimal over the entire 1995-2011 period. However, there are significant differences in some years, such as 2009.

[134] Dr. Booth calculated what Gazifère's ROE would have been if the formula he proposed had been used. He used Gazifère's allowed ROE in 1999, which was

[21] Exhibit C-2-13, Dr. Booth's evidence, p. 64.

10% with a risk-free rate of 5.7%. Based on the assumption that the risk-free rate is currently 4.5% and that the credit spread was 0.99% in 1999, Gazifère's ROE is 9.25% using his formula. Dr. Booth considers that a normal credit spread would be in the order of 94 basis points.[22]

[135] Dr. Booth considers, however, that regulators do not need a formula that captures the impact of the worst financial crisis since 1937, as the proposed formula would generate increased volatility in annual allowed returns, with little benefit. It should also be noted that IGUA is not particularly supportive of the second adjustment to the proposed formula.

[136] Finally, Dr. Booth submitted that if this formula is adopted, the Régie should not grant an additional adjustment for the effects of the financial crisis.

[137] The Régie observes that the formula proposed by Ms. McShane produces rates of return higher than those allowed in the past. Dr. Booth's formula produces returns that are similar to those allowed in the past over an economic cycle but they diverge from the allowed returns on an annual basis.

[138] In the Régie's view, Dr. Booth's formula makes it possible to adjust ROE on the basis of changes in the yield on 30-year bonds issued by regulated Canadian companies, while keeping the rate close to the allowed rates over an economic cycle. The Régie notes that, according to the Bank of Canada study, the adjustment factor for credit spreads is in the order of 0.37.

[139] The Régie is of the view that while Dr. Booth's alternative formula would lead to increased volatility in allowed rates of return, it would have produced more suitable allowed rates during the financial crisis. **The Régie finds that it would be appropriate to replace the current formula by Dr. Booth's formula for the purpose of establishing ROE as of 2012.**

[140] 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,

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[22] Exhibit C-2-13, Dr. Booth's evidence, p. 64.

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 Gazifère provide the Bloomberg data for the month of September for the purpose of applying the new formula.**

[141] At the hearing, Dr. Booth indicated that the Bloomberg index stood at 1.3% at the time his evidence was filed, and at approximately 1.5% at the time of the hearing.[23] **The Régie will use the 1.5% value from the Bloomberg index for the purpose of applying the new formula.** Based on a standard credit spread estimated at approximately 90 basis points, the adjustment for credit spreads will add 30 basis points to the ROE with the new formula.

[142] For the 2011 rate year, the Régie will apply a 30-basis-point adjustment in consideration of the effect of the financial crisis. **The Régie considers that, in 2012 and subsequent years, this adjustment will be covered by the second term of the new automatic adjustment formula.** Therefore, if credit spreads remain wide, the adjustment will be maintained. On the other hand, if credit spreads return to normal, the adjustment will be eliminated.

[143] **For the purpose of applying the new formula, the Régie also sets the risk-free rate at 4.25%.**

[144] ROE for the year 2012 and subsequent years will therefore be calculated in accordance with the formula shown in Appendix 1.

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

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[23] Exhibit A-35-2, pp. 141-142.

2.4 COST OF DEBT

[146] Gazifère explained at the hearing that it is financed entirely by Enbridge Inc. (Enbridge), its parent company. Gazifère's short-term debt is a proportion of Enbridge's consolidated line of credit.

[147] The short-term debt rate used by Gazifère is the discount rate established by Enbridge Gas Distribution Inc.'s *Economic & Market Analysis.*

[148] Gazifère filed the methodology and data used to establish this discount rate.[24] Under this method, the prime rate forecasts of six financial institutions are averaged and adjusted to produce a reasonable rate. A 2% premium is added to this forecast to account for the difference between the prime rate and the Bank of Canada rate.

[149] This method produces an increase in the rate from 2.21% in 2010 to 3.90% in 2011.[25]

[150] The Régie notes that this rate fluctuates widely. It also notes that the method uses some poorly documented factors, such as the adjustment to the average rate and the period used to establish the 2% premium.

[151] **The Régie asks Gazifère to file for review, in the next rate case, the methodology and data used to establish the discount rate, including at a minimum the data presented in Exhibit B-43, GI-41, document 1.1.**

[152] Issuance of long-term debt by Gazifère is financed by Enbridge at the Government of Canada 10-year bond rate plus a risk premium to reflect Gazifère's credit rating, in accordance with the stand-alone principle.

[153] Gazifère filed the methodology used to establish the cost of long-term debt.[26] The credit rating and risk premium are based on an assessment by *RBC Capital Markets*. Given its size, Gazifère is rated "BBB (low)."

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24 Exhibit B-43, GI-41, document 1.1.
25 Exhibit B-41, GI-35, document 2.2, p. 2.
26 Exhibit B-11, GI-31, document 1.3 and Exhibit B-38, GI-30, document 4.1.

[154] At the hearing, Gazifère indicated that no changes had been made in recent years to the methodology used to establish its financing. It filed the annual risk premiums used to determine the cost of its debt since 2002.[27] The document shows that the risk premium is volatile.

[155] Gazifère stated that Enbridge and itself are two distinct companies regulated by two different regulatory agencies and governed by an array of distinct laws.

[156] Gazifère recalled that the methodology used to determine the cost of its debt was approved by the Régie in Decision D-2006-158.[28] According to Gazifère, the stand-alone principle was recognized in that decision and it proceeded in exactly the same manner to establish its cost of debt in this case.

[157] Finally, Ms. McShane indicated that if Gazifère issued its own debt securities, financing costs would be higher and the terms would be more restrictive. She concluded that Gazifère's customers must pay the cost of debt as if the company were raising its own financing. In other words, the stand-alone principle must be applied.

[158] According to Dr. Booth, if there were no provincial boundary Gazifère's assets would not be distinct from Enbridge's and the two would be integrated. On this basis, and in view of the economic principle that similar assets should generate equivalent returns, Gazifère should have the same capital structure, the same cost of debt and the same rate of return as Enbridge.

[159] He also noted that Enbridge's cost of financing is higher than EGD's because it is a holding company. Typically, a holding company's cost of financing is approximately 25 basis points higher than that of an operating subsidiary. Furthermore, during the financial crisis, this cost increased because holding companies rely on dividends from operating subsidiaries to make interest payments on their debt.

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27 Exhibit B-38, GI-30, document 3.

28 File R-3587-2005.

[160] According to Dr. Booth, during the financial crisis, the difference between Enbridge's and EGD's cost of financing increased significantly.

[161] Dr. Booth submitted that the purpose of utility regulation is to limit a monopoly's power to set high prices and to deliver to consumers the benefits normally associated with competition. On this basis, he argued that utilities should not be overprotected and consumers thereby prevented from enjoying the benefits of the economies of scale made possible by monopoly status. He gave the example of the Ontario Energy Board (OEB) and the electric power distributors it regulates as an application of these principles.

[162] Dr. Booth argued that the cost of capital should be determined not according to the stand-alone principle but rather on the basis of a competitive market, and market forces should prevail.

[163] He recommended that the cost of debt be the same as EGD's, that the ROE be similar to EGD's, and that the capital structure remain at 40% equity and 60% debt.

[164] The Régie notes that the two experts have sharply divergent points of view.

[165] The Régie has long established Gazifère's cost of debt on the basis of the stand-alone principle. The Régie finds that the evidence does not support a change to this approach. **However, in view of the size of the credit spreads and their volatility, particularly during the financial crisis, the Régie asks Gazifère to file the following documents in its next rate case:**

- **the methodology and any changes, with explanations, as presented in Exhibit B-11, GI-31, document 1.3;**
- **the external evaluation of Gazifère's credit rating, as presented in Exhibit B-38, GI-30, document 4.1;**
- **Enbridge's and EGD's credit spreads compared to Government of Canada bonds, with issuance dates, maturities and coupons, as presented in Exhibit B-11, GI-30, document 1.18, p. 1.**

2.5 DECISION

[166] Under its enabling legislation, the Régie must allow a reasonable return on the Distributor's rate base. As noted above, the method the Régie uses to make this determination is a matter of discretion. In this regard, the Hope decision stated that, "Under the statutory standard of 'just and reasonable,' it is the result reached, not the method employed, which is controlling."[29]

[167] The Régie is using the results produced by the CAPM as its main benchmark. The Régie is also taking the results of the other models into account for the purpose of determining the allowed rate of return for Gazifère.

[168] **As the capital structure was not a subject of debate, the Régie maintains the current capital structure, consisting of 40% equity and 60% debt.**

[169] **Given the evidence in the record and all the reasons set out above, the Régie sets Gazifère's return on equity at 9.10% for the 2011 rate year. This rate includes a 30-basis-point adjustment in consideration of the effect of the financial crisis. As of 2012, this adjustment will be covered by the second term of the new automatic adjustment formula, which will then be in effect.**

[170] **Based on a risk-free rate of 4.25%, the allowed 9.10% ROE reflects an implicit risk premium of 4.85% for the Distributor.**

[171] **The Régie asks Gazifère to update the rate of return on the rate base and the projected cost of capital by no later than noon on December 10, 2010. The Régie also asks Gazifère to file in future rate cases the detailed calculation of the cost of capital projection, as filed in this case.**[30]

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29 *Federal Power Commission v. Hope Natural Gas Company 320 U.S. 591 (1944)*.

30 Exhibit B-11, GI-30, document 1, pp. 18-19.

2.6 OPINION OF COMMISSIONER RICHARD CARRIER ON RATE OF RETURN

[172] I will set out below the reasons for my opinion on the ROE Gazifère should be allowed for the year 2011. While my conclusions are similar to those of my colleagues in many respects, there are sometimes differences in the reasoning and in the findings which render them distinct. My opinion therefore forms a whole and should be read as such. I endorse in its entirety the summary of the evidence, as presented in the majority decision.

Risk-free rate

[173] For the purpose of setting a reasonable rate of return for the year 2011, I will adopt, in my analysis, a 4.25% rate as the reference point for CAPM calculations.

Market risk premium based on historical data

[174] First, it is useful, if not essential, to determine the benchmark data used for observed rates of return on the equity markets and the economic and financial environment in which those returns were realized.

[175] For the purpose of my assessment of the historical data, I will use the same approach as the one applied by the Régie in its previous decisions, namely long-period arithmetic means.

[176] The data entered into evidence by the two experts show that realized ROE averaged 11.6% in Canada and 11.8% in the U.S.[31] Meanwhile, the rate of return on 30-year government bonds averaged 6.4% in Canada and 5.7% in the U.S. It should be noted that these returns were realized in an environment in which average inflation for the entire period was 3.1%.

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[31] Ms. McShane's evidence, Exhibit B-1, GI-4, document 1, Schedule 6, p. 2; Dr. Booth's evidence, Exhibit C-2-13, Appendix B, Schedule 1 and Schedule 10.

Table 2

Historical market data	Can (1924-2009)	US (1926-2009)
Return on equity (%)	11.60	11.80
Long bond yield (%)	6.40	5.70
Market risk premium (%)	5.20	6.10
Inflation (%)	3.10	3.10

[177] The data used are representative of the reference periods. Other results may be obtained by using other reference periods or other types of means.

[178] These data are useful both for establishing the market risk premium for the CAPM and for a general assessment of the reasonableness of the allowed ROEs of regulated companies. These are objective data, compiled on the basis of reliable statistics on all sectors of the economy, most of which have a competitive market environment. In this sense, this set of historical data is an important reference point for determining the return expected by market investors.

[179] In the traditional CAPM, the market risk premium is established on the basis of estimated average returns observed over periods of sufficient length to offset economic cycle effects. The periods used above meet this criterion.

[180] Both Ms. McShane and Dr. Booth noted that in Canada the market risk premium was artificially decreased by relatively high Canadian bond rates in the 1980s and 1990s caused by the Canadian government's budget problems at the time. This is not true to the same extent today. For the purpose of my analysis, I will use 5.5% as the low end of the range for the market risk premium, calculated on the basis of Canadian historical data.

[181] For the high end of the market risk premium range, based on historical data, I will use 5.75%, as my colleagues did, based on Canadian and U.S. historical data, although it would also be plausible to use 6.0% if the figure is calculated

solely on the basis of U.S. historical data. This figure can be defended in view of the close integration of the Canadian and U.S. economies and the mobility of capital.

[182] For the purpose of my assessment, I will use the upper limit of this range. I discuss below the issue of using only historical data as an estimator of the returns investors expect today and in the future.

Gross beta (benchmark utility's risk)

[183] In the traditional version of the CAPM method, a security's risk is assessed statistically by comparing the standard deviation of monthly returns observed on the market for a given company or sector with the broader market. This parameter, called gross beta, is then used in the next step to determine the sector's risk premium, compared with the broad market.

[184] On the basis of the evidence, I consider it appropriate to use gross beta in applying the traditional CAPM method. Gross beta provides a relatively objective basis for calculation of the risk premium. According to the evidence in the file, this value falls in the 0.50-0.55 range.

[185] With respect to the use of adjusted betas, I concur with the Régie's opinion, expressed in previous decisions, that the explanation commonly used in financial research to support an adjustment to gross beta, namely the empirically observable tendency of betas in general to converge in the long term towards the market mean of 1, does not validly apply in the case of a regulated company. 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.

[186] However, this does not necessarily entirely resolve the problem of the quality of gross betas and their ability to accurately predict realized returns when applying the CAPM. This is an issue that continues to be a subject of debate among experts.

Benchmark utility risk premium

[187] Based on the above parameters, the risk premium for the benchmark utility is in the 2.75%-3.16% range.

Issuance costs

[188] For the purpose of my assessment, I consider it appropriate to include a cushion for direct issuance costs and discounts not otherwise factored into the calculation of the revenue requirement for a regulated company. These specific costs are in the order of 30-35 basis points according to the detailed analysis performed in case R-3690-2009.

[189] In the absence of convincing evidence to the contrary, an adjustment for dilution effects does not appear necessary for a regulated company. Assuming a constant capital structure over the years, and other things being equal, any increase in the total need for equity and debt financing derives from an equivalent increase in the value of the rate base for the regulated activity. In this case, the total ROE will increase in the same proportion as the return on the rate base, which should entirely dispel, for an informed investor, any fear of undue dilution and therefore maintain the market value of the security. This is not necessarily the case for companies in a competitive market, which may issues securities for various purposes other than financing growth plans.

[190] Ms. McShane's suggestion that sufficient compensation be provided to maintain the market value of the securities is not accepted. This issue is akin to the one discussed in Decision D-2009-156,[32] pp. 54-58. In that decision, the Régie did not accept the proposition that ROE be determined on the basis of a capital structure that reflects market value rather than book value.

[191] In view of the above and the evidence in the file, I would apply a range of 30-50 basis points for issuance costs.

Returns for benchmark utility according to CAPM, based on historical data

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[32] File R-3690-2009.

[192] The above data can be used to establish a second reference point that is useful for determining the allowed ROE. Based on the traditional version of the CAPM and using only historical data, the rate of return of the benchmark utility is in the 7.30%-7.91% range.

[193] This result, however, must be considered in light of the current economic and financial context. The two experts each addressed the related issues in their evidence. I discuss these questions below.

Adjustment –benchmark utility risk premium (CAPM) and current risk-free rate

[194] In the case at hand, Ms. McShane argued that the primary purpose of the risk premium model, like the other models used to establish a reasonable return, is to determine the return expected by investors today and in the future. Therefore, she suggested, the historical data on risk premium in past periods must be assessed in relation to this objective and adjusted as needed when the data is not sufficiently representative of current and future economic and financial conditions.

[195] In support of her position, she argued, among other things, that during the post-war period, between 1947 and 2009, there was no noticeable upward or downward trend in total returns on equity, based on 10-year moving averages; average returns stayed within the 11.5%-12.0% range throughout the period. She therefore considers this estimate a valid indication of the total market return expected today by investors. As the projected return on 30-year Government of Canada bonds in 2011 is approximately 4.7% and the medium- and long-term forecast is 5.25%, she deduces that investors expect a market risk premium in the order of 6.75%, while the long-period historical average for the U.S. market is in the order of 6.1%.

[196] Dr. Booth contended that the risk premium is between 5.0% and 6.0%, based on all his analyses, supported by his review of the results of a survey by Prof. Fernandez of the approaches generally used by finance professors, financial analysts and corporate executives.

[197] As the Régie noted in Decision D-2007-116,[33] application of the CAPM involves special difficulties when ROE determination occurs at a time when government bond rates differ significantly from average long rates. The Régie stated:

> *In the Régie's view, application of the CAPM raises an additional difficulty when returns are calculated over a period in which government bond rates are significantly different from the mean rates over the longer term. Since the risk premium is calculated over a long period and represents the difference between the arithmetic mean market return and the arithmetic mean return on government bonds, it basically reflects prevailing conditions over that same period. The Régie's calculation must therefore be adjusted when bond market conditions vary from this mean.*
>
> [...]
>
> *The Régie believes this initial discussion of the issue should be followed by further study. However, this question will not have a significant impact on the reasonable rate of return to which a shareholder is entitled.*
>
> [...]
>
> ***In the case at hand, the Régie has decided to makes an upward adjustment of 40 basis points to the results produced by the CAPM.***

[198] In Decision D-2009-156, the Régie made another adjustment of the same kind to the results produced by the CAPM.

[199] The situation in this case is similar to the one examined in the aforementioned cases and is even exacerbated by the fact that the risk-free rate is now 4.25%, down from 4.78% in 2007. This is a relatively new situation in recent history, which has arisen since 2005-2006 when the risk-free rate dropped below 5.0%.

[200] The issue in this case stems from the fact that when the CAPM is applied in the normal fashion, the risk premium of a security is added to the current return of long government bonds to determine the return expected by investors. The apparent underlying premise of this model is that it is reasonable to assume that investors' expectations and market performance follow the same trend line as

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[33] File R-3630-2007, p. 28.

government bond rates or risk-free rates. But this premise is debatable if market rates of return show a certain stability or constancy over time.

[201] It is clear that the two experts do not have exactly the same point of view about the stability of ROE over time. Ms. McShane believes that nominal returns on equity are stable over time, that the expected risk premium should therefore be calculated having regard to this fact, and that it should be determined by subtracting, from these observed returns, the current or expected rates of government bonds. According to Dr. Booth's evidence, it is real returns on equity, and not nominal returns, that would be constant.[34]

[202] While Ms. McShane's analysis of the empirical data is helpful, it does not appear sufficiently documented and robust to be used directly.

[203] Moreover, the assumption that returns are somewhat stable over time seems logical from a conceptual standpoint, since investors seek stable inflation-adjusted returns over the medium and long term.

[204] Based on the data adduced in evidence, the spread between the historical inflation rates of 3.1%, and future projections, which are usually in the 2.0% range, is roughly 100 basis points. But this decrease is less marked than the observed decrease of roughly 200 basis points in the return on government bonds, which is used as a reference for applying the CAPM. Such a result would argue for an adjustment of the implicit risk premium if the real return expected by investors is stable over time.

[205] No definitive conclusions about this issue can be drawn from the evidence in the record. This is an empirical issue that might be examined more thoroughly in the future.

[206] In addition, both experts acknowledge that in order to update the rate of return that the Régie will allow in this case, it is adequate, for future years, to use an implicit risk premium adjustment formula when the long bond rates, or risk-free rates, fluctuate upward or downward. If there is any difference of opinion in this regard, it is more about the level of this adjustment — that is to say, whether it

[34] Exhibit C-2-13, Appendix B, page 7.

should be 25 or 50 basis points per 100 basis point variation in the benchmark bond rates — than about its merits. Thus, from this perspective, both experts acknowledge that the utility's implicit risk premium does in fact vary with bond rates.

[207] Based on the evidence in the record and the Régie's prior decisions, it appears appropriate to adjust a utility's implicit risk premium when the current government bond rates depart significantly from the historical average used to calculate the risk premium.

[208] From a practical standpoint, the value of the adjustment to be used for the 2011 rate of return can be approximated here, based on an elasticity factor representing 25% of the difference between the long-term and current risk-free rate, that is to say, the same adjustment factor used in the existing automatic adjustment formula. The adjustment thereby determined would be in the 40 or 50 basis point range, depending on whether one referred to the spread between, on the one hand, the historical average of risk-free rates in Canada or the United States, and, on the other hand, the current risk-free rate of 4.25%.

Current credit spreads

[209] In his analysis on the establishment of a reasonable rate of return, Dr. Booth recommends an adjustment of 50 basis points to account for the fact that the effects of the financial crisis are still with us. He notes a persistent skittishness in financial markets. He also states that credit spreads have widened between the date that he filed his evidence and the hearing.

[210] Ms. McShane essentially believes that the financial crisis is behind us. However, she states that the fundamental issue with the adjustment formula and its past results in Canada are unrelated to the financial crisis. In her view, this problem pre-dates the crisis and was merely exacerbated by it. Thus, in her view, the issue remains current. Her recommendations about ROE and the adjustment formula reflect this view.

[211] The question of credit spreads and its relationship with the establishment of a reasonable ROE have been the subject of repeated debate before the Régie since 2007. The Régie noted the insufficiency of the evidence on this point in Decision

D-2008-140.[35] Moreover, in Decision D-2009-156, the Régie determined that a 0.25% to 0.55% adjustment of the risk premium and the rate of return applicable to the Distributor was a suitable adjustment to compensate for the effects of the crisis.

[212] It can be seen in this case that the credit spreads are still above the historical average. The volatile financial markets of 2009, and the related issue of budget deficits and sovereign debt in Europe, are further illustrations of the relatively fragile state of the markets as they exited the worst financial crisis since the 1930s.

[213] According to the evidence in the record, credit spreads remain high. It is plausible to believe that they will persist and remain volatile over a relatively lengthy period.

[214] All the experts agree that, under normal conditions, the return on equity should be higher than return on debt securities given that shareholders assume greater risk than corporate bondholders. It is also generally accepted that credit spreads can fluctuate through the different phases of an economic cycle.

[215] Based on the evidence, an adjustment of the risk premium established in the context of the CAPM appears warranted.

[216] In this regard, the credit spreads of roughly 1.50% observed in the Bloomberg index at the time of the hearing, that is to say, the spreads between the yields on the long-term bonds of regulated utilities and the yields on government bonds of equal duration, should be taken into account. Based on Dr. Booth's evidence, the difference between this figure, and the historical average of 0.90% for that index, is 60 basis points.

[217] As for the amount of the allowed adjustment, the lower end of the range can be determined based on the elasticity factor proposed by the experts for the same variable in the discussion about future adjustment formulas, i.e. 50% of the observed spread, or 30 basis points. The upper end of the range can be fixed at 100% of the difference, namely 60 basis points.

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35 File R-3662-2008, Phase 2.

[218] Based on the evidence in this case, including the evidence regarding the financial context, I would allow an adjustment in the range of 40 to 50 basis points for the purposes of my analysis.

Benchmark utility based on adjusted CAPM

[219] In light of the foregoing, the benchmark utility ROE, based on the adjusted CAPM approach, is in the 8.0-9.01% range.

Other models and considerations

[220] Ms. McShane presents the results obtained by using various other models or variants thereof. Certain difficulties arise in their interpretation.

[221] Among other things, these difficulties arise from the circularity of her analysis, that is to say, the direct or indirect use of the results of regulated companies, or market values, to establish the return expected by investors, given that those results depend quite closely on the past decisions of regulators.

[222] These difficulties also arise from the quality of the sample used, notably difference between the risk borne by the U.S. businesses that form the sample, and the average risk of a benchmark utility in Canada.

[223] Ms. McShane concludes that there is no such difference. In her submission, the Canadian and U.S. regulatory, economic and financial environments are essentially the same.

[224] Dr. Booth submits that the risk differential could justify a difference of 90 to 100 basis points for a regulated utility in the United States. Among other things, he relies on the results of Moody's August 2009 analysis, which cites a more predictable and favourable regulatory environment in Canada.

[225] Dr. Booth's evidence concerning the Moody's analysis is helpful because it is the analysis of a third party specialized in the rating of regulated utilities' securities. In the future, it would be worth obtaining more thorough evidence and a more thorough examination of the parameters that these rating agencies use.

[226] Beyond the often general remarks made by the experts, the importance of this issue in determining a reasonable rate of return for investors would justify greater efforts to compare the risks incurred by Canadian and U.S. regulated businesses. It would also justify more efforts to compare these risks with those incurred in other sectors of economic activity in which businesses are subject to competition. For example, a sector whose beta factor is equal to that of the market could be used.

[227] To this end, it would be helpful to analyse the regulatory systems in greater detail, notably by comparing the treatment of risks related to both supply and transportation contracts, the rules applicable to forecasting errors, the rules concerning the authorization of capital expenditures depending on whether the authorizations are given in advance or after the fact, and the rules applicable to the acquisition and disposal of excess or obsolete assets, in view of the applicable jurisprudence.

Benchmark utility risk premium based on historical returns of regulated utilities

[228] With this approach, Ms. McShane obtains an historical risk premium of 11.0% for regulated utilities in the United States (1947-2009) and Canada (1956-2009). This method has the advantage of being easy to apply, but it poses several problems in terms of interpreting the results.

[229] The Canadian data reflect a period in which long bond rates were very high. To the extent that the authorized returns took this phenomenon into account, the results from this approach are from a period that might not be particularly representative of the current economic environment.

[230] As for the U.S. data, the representativeness of the sample in terms of risk, and the impact associated with the choice of the reference period, must be taken into account.

Benchmark utility risk premium using Discounted Cash Flow (DCF) model for regulated utilities

[231] Ms. McShane obtains a risk premium of 9.4% by using this model (before issuance costs) compared to 9.25% by using her estimate of the CAPM. The particularities of the DCF model will be discussed in the paragraphs below.

Benchmark utility rate of return based on Discounted Cash Flow (DCF) model

[232] Ms. McShane discusses several variants of this model. She states that it is an alternative to the widely used CAPM, and is the main model used by U.S. regulators.

[233] The model is based on an estimate of future cash flows, consisting in dividends paid by the utility; and the aggregate of these cash flows is discounted so they are expressed in current dollars. Using this model, Ms. McShane estimates that the rate of return of the benchmark utility, before issuance costs, is 10.0%.

[234] Specifying the variables of the DCF model is particularly important. In its basic iteration, the model requires one to estimate the dividend flow from the company being evaluated, or from the sample, for each year in the future, which is then discounted into current dollars. The difficulties involved in correctly estimating the growth of dividends per share ("g") are considerable. Even a minor change in this variable can have a significant impact, since the discounted numbers are for all future periods, going forward theoretically to infinity.

[235] Ms. McShane first uses financial analysts' projections to establish the value of variable "g". She also uses her own estimates of a sustainable long-term growth rate. Dr. Booth contests Ms. McShane's various assumptions. Among other things, he submits that the use of financial analysts' projections is highly controversial given the overly optimistic nature of their forecasting, which has been documented at various times in the past.

[236] Although Ms. McShane disagrees with this position, she submits that since investors believe these forecasts and incorporate them in their decisions, the DCF

model is an unbiased estimate of investors' expected returns.[36] This conclusion is debatable. In the unregulated private market, an investor will be penalized by the market if his decisions are based on analyst forecasts that prove too optimistic on the whole. Inversely, if regulators based their decisions on the same forecasts, which are on average too optimistic, this bias would be incorporated into rates without any possible penalty from the market. In such a case, the return realized by shareholders would be biased upward to the detriment of users, who would have to pay a bigger bill than necessary.

[237] Thus, in order for results from this model to be used, detailed and sufficiently rigorous evidence as to the determination of the growth variable "g" is required. Since the analyst forecasts to which reference has been made cannot be tested directly at a hearing, it is difficult to decide whether the estimates produced are reasonable. Moreover, the position that the dividend growth factor can be presumed to be equal to the nominal growth of the economy is not based on a detailed and specific assessment in the present case, but rather, on an approach often used in the financial sector. Since these various assumptions are what determine the results in this model, more detailed evidence would need to be submitted in this regard.

Conclusion regarding the other models and considerations

[238] For all these considerations, the results produced by the other models are used in the present case, but their usefulness in determining a reasonable rate of return is limited.

[239] Even though it is preferable, notably in cases such as this, to be able to determine a shareholder's ROE based on a wide array of approaches, I concur in my colleagues' finding that the CAPM approach is the most reliable reference in this case.

[240] Overall, given that no single model can fully and correctly represent investors' expectations, an adjustment of 10 to 50 basis points to the range of results produced by the CAPM is sensible.

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[36] Evidence of Ms. McShane, Exhibit B-1, GI-4, document 1, page 57.

[241] Based on all the reasons given, for the purposes of my analysis, I would allow the lower end of the range thereby established.

Rate of return of a reference distributor

[242] Based on the foregoing, it can be established that the benchmark utility ROE, including issuance costs, should be in the 8.10% to 9.51% range. This result serves as a guide in assessing the rate of return that Gazifère is allowed.

Gazifère's additional risk

[243] For the purposes of setting Gazifère's return, I consider the adjustment proposed by Ms. McShane reasonable.

[244] With regard to business risk, the company's development in the residential and commercial markets has proceeded as could have been expected over the past ten years. The company has therefore strengthened its stable revenue base.

[245] All else being equal, the recent loss of major industrial clients is a negative factor. However, the evidence discloses that this loss is primarily attributable to structural difficulties in a specific sector of economic activity, and does not result from, say, an erosion of the competitiveness of natural gas. Lastly, the related loss of gross margin is not unduly affecting the resulting rate levels for other users.

[246] In addition, the fact that Gazifère's size does not permit it to access financial markets on its own and that its rating would plausibly be BBB must be taken into consideration.

[247] For these reasons, the proposed adjustment of 50 basis points appears warranted.

[248] Lastly, while Dr. Booth's argument that the costs stemming from Gazifère's small size should not be passed on to consumers raises an interesting issue in relation to regulatory principles, it cannot succeed, because Gazifère's existing regulatory framework is based on the stand-alone concept. A substantially

different application of this concept is an issue of far-ranging import that falls outside the scope of this hearing.

Gazifère's rate of return for 2011

[249] Based on the foregoing and on a risk-free rate of 4.25%, Gazifère's rate of return can be situated in a range from 8.60 to 10.01%.

Table 3
Reasonable ROE range for Gazifère
according to the minority opinion

	Low	High
CAPM	%	%
1) Risk-free rate	**4.25**	**4.25**
2) Market risk premium (arithmetical averages/historical data)	5.50	5.75
3) Gross beta (market = 1,00)	*0.50*	*0.55*
4) Benchmark utility risk premium (4 = 3*2)	**2.75**	**3.16**
5) Issuance costs	**0.30**	**0.50**
6) Subtotal: benchmark utility based on CAPM before adjustment	**7.30**	**7.91**
7) Benchmark utility risk premium and current risk-free rate	**0.40**	**0.50**
8) Benchmark utility risk premium and current credit spreads	**0.30**	**0.60**
9) Subtotal: benchmark utility based on adjusted CAPM	**8.00**	**9.01**
Other models		
10) Other models and considerations	**0.10**	**0.50**
Benchmark utility		
11) Subtotal: benchmark utility	**8.10**	**9.51**
Gazifère		
12) Gazifère's additional risk	**0.50**	**0.50**
13) Gazifère Total (13=11+12)	**8.60**	**10.01**

[250] Based on all the reasons set out in my opinion, the Régie's prior decisions, and the context in which the Distributor operates, I would allow a reasonable ROE of 9.40% for Gazifère.

2.6.1 Adjustment formula

[251] Ms. McShane proposes a new adjustment formula for the rate of return, one that includes an inverse elasticity factor of 0.50 for any future variation in the risk free rate and an elasticity factor of 0.50 for any future variation in corporate credit spreads.

[252] Dr. Booth proposes a formula that is identical, with the exception of the elasticity factor for the risk-free rate, which he would maintain at 0.75, the factor in the existing formula.

[253] Ms. McShane's formula is based on two tests. The first uses returns allowed by U.S. regulators from 1995 to 2009 for the purpose of establishing the elasticity factors. The second uses the results of the risk premium method, established using the DCF model.

[254] Both tests are based on the direct or indirect use of data from the regulated sector, and rely on U.S. data. This might explain why the results of the proposed formula more closely track the evolution of allowed rates of return in the U.S. instead of the allowed rates of return in Canada during the period under consideration.

[255] In this regard, the availability of data and analyses which pertain to the elasticity of ROEs in relation to the risk-free rate and the credit spreads, but which use unregulated activity sectors, might be helpful.

[256] Moreover, in his subsidiary proposal, Dr Booth agrees with the inclusion of a second term in the adjustment formula, to reflect the elasticity of the implicit risk premium associated with the evolution of corporate credit spreads.

[257] Like my colleagues, I find that it is warranted to allow such an adjustment commencing in the 2012 fiscal year. This will allow for a more rapid adjustment

of the distributor's implicit risk premium in the event of a substantial variation in credit spreads going forward. This adjustment will also apply symmetrically, either upward or downward, thereby complementing the previously accepted basic adjustment to the CAPM for current credit spreads.

[258] Given these reasons, and the inclusion of a second term to the formula, I find that the elasticity factor associated with the risk-free rate should remain unchanged in the present case.

[259] It can be presumed that the two terms determined in this way can offset each other in the event of extreme situations, in that credit spreads generally tend to increase in situations where the risk-free rate decreases sharply, and vice versa. The results produced by the new formula can be examined no later than four years after they are applied, that is to say, at a time that is appropriate for the fiscal year commencing in 2016.

[260] Consequently, like my colleagues, I allow the adjustment formula established for 2012 and subsequent years, as set out in Appendix 1.

APPENDIX 1

Automatic ROE adjustment formula for Gazifère Inc.

Appendix 1 (2 pages)

L. R. _____

R. C. _____

L. D. _____

APPENDIX 1

AUTOMATIC ROE ADJUSTMENT FORMULA FOR GAZIFÈRE INC. FOR 2012 AND SUBSEQUENT YEARS

ROE for test year t = $9.10\% + 0.75 * (PYCL_t - 4.25\%) + 0.5 * (CSRC_t - 1.5\%)$

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:

$$PYCL_t = \left[\frac{PY_{10}C_{jan,t} + PY_{10}C_{oct,t}}{2}\right] + \left[\frac{\sum_I (Y_{30}C_{I,t-1} - Y_{10}C_{I,t-1})}{I}\right]$$

where

$PY_{10}C_{jan,t}$ = Projected yield on Canada 10-year bonds at the end of January in test year t, according to Consensus Forecasts published in October of rate year t-1.

$PY_{10}C_{oct,t}$ = Projected yield on Canada 10-year bonds at the end of October in test year t, according to Consensus Forecasts published in October of rate year t-1.

$Y_{30}C_{i,t-1}$ = Yield on Canada 30-year bonds at the close of business on each day i in September of rate year t-1, as published by the Bank of Canada (Cansim Series V39056).

$Y_{10}C_{i,t-1}$ = Yield on Canada 10-year bonds at the close of business on each day i in September of rate year t-1, as published by the Bank of Canada (Cansim Series V39055).

I = Number of business days in September 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 September of rate year t-1. The $CSRC_t$ factor is calculated as follows:

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

where

$Y_{30}RC_{i,t-1}$ = Daily average yield on A-rated 30-year bonds issued by Canadian regulated corporations at the close of business on each day i in September of rate year t-1, as shown on the Bloomberg C29530Y index.

$Y_{30}C_{i,t-1}$ = Yield on Canada 30-year bonds at the close of business on each day i in September of rate year t-1, as published by the Bank of Canada (Cansim Series V39056).

I = Number of business days in September 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.