

**Prepared Direct Testimony
of
James M. Coyne**

On Behalf of Gaz Métro

December 14, 2012

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1 **I. INTRODUCTION**

2 **A. Qualifications**

3 **Q: 1 Please state your name, affiliation, and business address.**

4 A: My name is James M. Coyne, and I am employed by Concentric Energy Advisors, Inc.
5 (“Concentric”) as a Senior Vice President. My business address is 293 Boston Post Road
6 West, Suite 500, Marlborough, MA 01752.

7 **Q: 2 On whose behalf are you testifying?**

8 A: I am testifying on behalf of Gaz Métro (“Gaz Métro”, or the “Company”), a subsidiary
9 of Valener Inc.

10 **Q: 3 Please describe your experience and qualifications.**

11 A: I am among Concentric’s professionals who provide expert testimony before federal,
12 state and Canadian provincial agencies on matters pertaining to economics, finance, and
13 public policy in the energy industry. Concentric provides financial, economic and
14 regulatory advisory services to clients across North America, including utility companies,
15 regulatory and public agencies, and utility sector investors. I regularly advise utilities,
16 generating companies, public bodies and private equity investors on business issues
17 pertaining to the utilities industry. This work includes calculating the cost of capital for
18 the purpose of ratemaking, and providing expert testimony and studies on matters
19 pertaining to incentive regulation, rate policy, valuation, capital costs, demand side
20 management, low-income programs, fuels and power markets. In addition, I work for
21 utilities, independent developers and public bodies on issues pertaining to the

1 management and development of power generation, distribution and transmission
2 facilities.

3 I have authored numerous articles on the energy industry and provided testimony before
4 the Federal Energy Regulatory Commission and jurisdictions in Alberta, British
5 Columbia, California, Connecticut, Maine, Massachusetts, New Jersey, Nova Scotia,
6 Ontario, South Dakota, Texas, Vermont and Wisconsin. I also have co-authored two
7 studies that compare and analyze ROEs for gas and electric utilities in Canada, and have
8 spoken at industry and regulatory sponsored events on the topic.

9 Prior to joining Concentric, I was Senior Managing Director in the Corporate
10 Economics Practice for FTI/Lexecon, and Managing Director for Arthur Andersen's
11 Energy & Utilities Corporate Finance Practice. In those positions, I provided expert
12 testimony and advisory services on mergers, acquisitions, divestitures and capital markets
13 for clients in the energy industry. In addition to the foregoing positions, I was also
14 Managing Director for Navigant Consulting, with responsibility for the firm's Financial
15 Services practice, Director in DRI's Electric and Natural Gas practices, and Senior
16 Economist for the Massachusetts Energy Facilities Siting Council, where I analyzed the
17 supply plans and facilities proposals from the state's electric and gas utilities. I also
18 served as State Energy Economist for the Maine Office of Energy Resources. I hold a
19 B.S. in Business Administration from Georgetown University and a M.S. in Resource
20 Economics from the University of New Hampshire. My qualifications are detailed
21 more fully in Appendix A.

1 **B. Scope of Testimony**

2 **Q: 4 What is the scope of your testimony in this proceeding?**

3 A: I was asked to provide an estimate of the cost of equity for Gaz Métro for the purpose
4 of establishing the overall rate of return for the Company’s 2013 rate filing. In order to
5 estimate the cost of equity, I have relied upon analytical tools and data sources normally
6 used for such purposes before regulators in Canada and the U.S. I have also reviewed
7 past decisions and precedents established by the Régie in consideration of such matters.

8 The analysis provided in this report supports my overall recommendation on the cost of
9 equity. That analysis includes the following: (1) assessment of Gaz Métro’s operating
10 and financial profile, (2) examination of the legal and regulatory requirements for
11 determination of a fair rate of return, (3) determination of Canadian and U.S. proxy
12 groups with companies comparable to Gaz Métro with respect to business and financial
13 risks, (4) examination of the regulatory, institutional, economic and financial conditions
14 in Canada and the U.S. to address the Régie’s prior concerns regarding reliance on a U.S.
15 proxy¹, (5) examination of the business and financial risks of Gaz Métro relative to the
16 Canadian and U.S. proxy group companies to determine whether it is reasonable to rely
17 on those respective proxy groups to estimate the required ROE for Gaz Métro, (6)
18 estimation of the cost of equity using well-established financial methodologies - the
19 Capital Asset Pricing Model (“CAPM”) and the Discounted Cash Flow (“DCF”)
20 method, (7) development of a range of results for the Canadian and U.S. proxy groups,

¹ Specifically, the Régie has sought evidence that would make it possible to conclude that the regulatory, institutional, economic and financial contexts of the two countries and their impacts on the resulting opportunities for investors are comparable. Régie de L’Energie du Quebec, D-2011-182, File R-3752-2011, Phase 2, November 25, 2011, at p. [294-295].

1 and (8) estimation of Gaz Métro’s cost of common equity based on application and
2 interpretation of that range and the business and financial risks of Gaz Métro relative to
3 the respective proxy groups.

4 **C. Executive Summary**

5 **Q: 5 Please summarize your analysis and conclusions.**

6 A: The following summarizes the regulatory standards and analysis I have relied upon to
7 reach my conclusions and recommendations.

8 1) Established legal and regulatory principles require that Gaz Métro be given an
9 opportunity to earn a fair return on its invested capital.²

10 2) In order for the rate of return to be judged fair, the company must be provided
11 with a reasonable opportunity to earn a return that meets three requirements:

- 12 a. Capital attraction requirement
- 13 b. Financial integrity requirement
- 14 c. Comparable investment requirement

15 These standards must be met individually and in total in order to satisfy a fair return.³

² I understand that the Régie adheres to the “just and reasonable” standard for the setting of overall utility rates, consistent with regulatory practice elsewhere in Canada and the U.S. I refer here, specifically to the “Fair Return Standard”, emanating from the decision in *Northwestern Utilities v. City of Edmonton* (1929) [1929] S.C.R. 186 (“Northwestern”), and widely acknowledged as the legal and regulatory standard in Canada for purposes of determining the appropriate cost of capital for regulated utilities.

³ These requirements are summarized by the Ontario Energy Board in its 2009 Cost of Capital Report, where it provides important context on the Boards’ adherence and application of the Fair Return Standard (“FRS”):

“ . . .the FRS frames the discretion of a regulator, by setting out three requirements that must be satisfied by the cost of capital determinations of the tribunal. Meeting the standard is not optional; it is a legal requirement.”

And:

“ . . . all three standards or requirements (comparable investment, financial integrity and capital attraction) must be met and none ranks in priority to the others.”

1 3) I have estimated the cost of equity for Gaz Métro utilizing both the CAPM and
2 DCF models, with alternative inputs and model specifications designed to test
3 the reasonable range of results. In doing so, I look for evidence of consistency
4 between models and results, and evidence of outlying results that should be
5 questioned.

6 Due to my concerns regarding the inputs and results from the CAPM, and in
7 consideration of recent decisions by the Régie that attempt to account for those
8 problems and differences with other models, I have created a “Reconciled
9 CAPM” that results in a 9.34 percent ROE.

10 The DCF analysis applied to a proxy group of Canadian utility companies’ results
11 in a range of ROEs from 8.7 percent to 11.3 percent with a mean result of 10.0
12 percent, including flotation costs of 30 basis points. The results of the DCF
13 model using a U.S. gas distribution proxy group range from 9.2 percent to 9.5
14 percent with a mean result of 9.3 percent, including flotation costs of 30 basis
15 points.

16 The results of methods I have relied upon are summarized in Table 1.

17 4) Risk Factors - In addition to the analytical models, I have developed a detailed
18 assessment of the risks of the Canadian and carefully chosen U.S. proxy
19 companies with respect to economic conditions, the integration of financial
20 markets, government and regulatory policies, and business and financial risks.
21 The following summarizes the conclusions of my risk analysis.

- 1 • Investment Risk – More than ever, Canada and the United States are
2 similar from an investment perspective. Specifically, it is reasonable to
3 conclude that investors would not find material differences in economic,
4 financial, and regulatory conditions between Canada and the U.S. that
5 would cause them to assign a different risk profile to Canadian and U.S.
6 companies that are otherwise comparable.
- 7 • Proxy Groups - It is appropriate to consider Canadian and carefully
8 chosen U.S. proxy groups as benchmarks for natural gas distribution
9 utilities, such as Gaz Métro. More specifically, given the small number of
10 publicly-traded Canadian utilities, it is appropriate to consider the
11 analytical results for a group of low-risk U.S. gas distribution companies
12 using screening criteria including credit ratings, payment of dividends,
13 availability of growth rate estimates, and the extent to which the
14 company is engaged in regulated natural gas distribution operations.
- 15 • Business Risk – Both Canadian and U.S. regulators have provided the
16 operating companies in the proxy groups with cost recovery and revenue
17 stabilization mechanisms that mitigate many of the important business
18 risks, such as gas supply, fluctuations in volume/demand, capital
19 investment costs, and operating costs that tend to fluctuate significantly
20 from year to year.
- 21 • Financial Risk - Gaz Métro and the Canadian proxy group companies
22 have substantially more financial leverage in their capital structures and

1 weaker credit metrics than the U.S. proxy group companies. This may
2 indicate that credit rating agencies are satisfied with the degree of
3 regulatory protection and cash flow protection for debt investors, but
4 these metrics expose equity investors to greater risk than their U.S.
5 counterparts. As such, Gaz Métro has greater financial risk than the U.S.
6 proxy group.

- 7 5) Recommended ROE - The results produced from the various methods and
8 inputs cover a broad spectrum. This is not surprising given the range of inputs
9 and techniques employed and unprecedented market conditions. All methods
10 are not, however, providing a reasonable estimate for Gaz Métro's cost of equity.

11 Based on the results of the analyses discussed above and in the remainder of my
12 testimony, I have concerns with the ability of the CAPM to produce reasonable
13 results in light of the factors affecting the inputs at this time. Bond yields in
14 Canada and the U.S. have been driven to all time lows, and most would agree
15 below sustainable levels in the longer term. As a result of the financial crisis and
16 recession, utility betas have also been impacted, and market equity risk premium
17 estimates cover a broad spectrum. There is a substantial gap between historic
18 equity returns and the higher returns implied in current stock market data. These
19 are problems with the CAPM, in general, in the current market environment.

20 As contained in Table 1 and described in the CAPM section, I have attempted to
21 reconcile for these differences using logic employed by the Régie in the past. I
22 begin with a Canadian risk free rate. The Market Equity Risk Premium I have

1 employed is a combination of both Canadian and U.S. market inputs, including
2 both historic and forward looking estimates. The beta is derived from the U.S.
3 gas distribution proxy group. I find that a carefully selected U.S. proxy group is
4 more representative of Gaz Métro than the Canadian companies; therefore, the
5 beta from the U.S. companies is more representative. Floation costs are
6 included consistent with the Régie’s past decisions, and finally, I make a 75 basis
7 point adjustment for differences between the CAPM results and the DCF results.
8 This reconciliation is consistent with the Régie’s approach factoring in an
9 adjustment for the “Results of Other Models” in the 2012 Gaz Métro rate case.
10 The reconciled CAPM produces a 9.34 percent result, and offers a view into the
11 required adjustment to inputs to achieve a reasonable result in the current
12 environment.

13 Under current market conditions, I believe more weight should be given to the
14 DCF model. The average of my DCF method for the U.S. proxy group
15 produces a relatively tight range of 9.2 percent to 9.5 percent. The Canadian
16 DCF produces a range of 8.7 percent to 11.3 percent, which I believe specifies
17 the outer limits of the range for Gaz Métro. Placing principal reliance on the
18 DCF model with U.S. proxy companies, and supported by the Reconciled
19 CAPM, **the estimated cost of equity for Gaz Métro is between 9.2 percent**
20 **and 9.5 percent**, within the broader range of 8.7 percent to 11.3 percent.

21 Application of the Régie’s formula would produce a 7.92 percent ROE. This
22 would not be within the reasonable range, and in my opinion would not meet the

1 measures of a fair return. It would be below any allowed rate of return for a gas
 2 utility in Canada or the U.S., outside Quebec, and in the long run would fail to
 3 attract equity capital if below investors' required return.

4 **Table 1: Summary of Results (including flotation costs)**

Capital Asset Pricing Model				
Inputs		CAPM Reconciled		
Risk Free Rate		3.75%		
Beta		0.65		
Market Risk Premium		6.94%		
Sub-Total		8.26%		
Flotation Cost		0.30%		
Sub-Total		8.56%		
Adjustment for Other Models		0.75%		
Total		9.34%		
Discounted Cash Flow				
Market Averaging Period	Constant Growth	Sustainable Growth	Multi-Stage	Average
Canadian Utility Proxy Group				
30-day	11.3%	N/A	8.7%	10.0%
90-day	11.3%	N/A	8.7%	10.0%
180-day	11.3%	N/A	8.8%	10.0%
Average	11.3%		8.7%	10.0%
U.S. Gas Distribution Proxy Group				
30-day	9.3%	9.6%	9.3%	9.4%
90-day	9.2%	9.4%	9.2%	9.2%
180-day	9.2%	9.5%	9.3%	9.3%
Average	9.2%	9.5%	9.3%	9.3%

1 The evidence I have presented indicates that my carefully selected group of U.S. proxy
2 companies is more like Gaz Métro than the Canadian proxy companies due to their
3 business profiles. The publicly traded Canadian utilities include substantial non-gas
4 distribution businesses. It is important to note that I do not conclude that all U.S. gas
5 distribution companies are comparable to Gaz Métro. My selection of the U.S. proxy
6 group is based on a careful screening of the universe of U.S. companies to select those
7 most comparable to Gaz Métro. That screening process considers factors such as credit
8 ratings, payment of dividends, availability of growth rate estimates, and the extent to
9 which the company is engaged in regulated natural gas distribution operations.
10 Importantly, the credit ratings for the U.S. gas distribution proxy group are between
11 BBB+ and A+, similar to Gaz Métro's rating of A- from Standard and Poor's ("S&P").
12 By choosing U.S. proxy group companies with similar credit ratings to Gaz Métro, I
13 have selected a proxy group comprised of low-risk utilities with comparable business and
14 financial risks, as indicated by those credit ratings. My risk analysis is then performed at
15 the operating company level for the five Canadian utilities and nine U.S. gas distribution
16 utilities that I have identified as proxies for Gaz Métro.

17 In response to the Régie's previous concerns with relying on market-based returns for
18 U.S. utilities to estimate the allowed ROE for Gaz Métro, I also present an analysis of
19 the allowed and earned ROEs for the U.S. proxy group at the operating company level
20 from 2004-2011.⁴ That analysis demonstrates that it is reasonable and appropriate to
21 conclude that the operating utilities in the U.S. proxy group have been able to earn their
22 authorized ROE in the vast majority of instances over the past eight years. From that

⁴ Régie de L'Energie du Quebec, D-2011-182, File R-3752-2011, Phase 2, November 25, 2011, part [271].

1 perspective, the evidence suggests that the regulatory regimes in those Canadian and U.S.
2 jurisdictions generally have provided utilities with timely cost recovery, which, in turn,
3 gives utilities and their investors a reasonable opportunity to earn their allowed ROE.

4 **Q: 6 How is the remainder of your testimony organized?**

5 A: The remainder of my testimony is organized as follows. Section II provides an overview
6 of Gaz Métro's operations and its deemed capital structure. Section III discusses the
7 legal requirements and regulatory precedents for the determination of a fair rate of
8 return. Section IV describes the criteria used to select proxy group companies in order
9 to estimate the cost of equity for Gaz Métro. Section V discusses the precedent in
10 Canada for considering the use of U.S. data and proxy groups to establish the allowed
11 ROE for a Canadian utility. Section VI presents a comparison of the business and
12 economic conditions in Canada and the U.S. Section VII provides a detailed discussion
13 of the business and financial risks of the companies in the Canadian and U.S. proxy
14 groups (at the operating company level) relative to Gaz Métro. Section VIII discusses
15 the various methods used to estimate the cost of equity and their reliability under current
16 market conditions, and summarizes the results of the CAPM and DCF analyses. Section
17 IX reviews the appropriate capital structure for Gaz Métro relative to the proxy groups.
18 Finally, Section X summarizes my overall conclusions and recommendations.

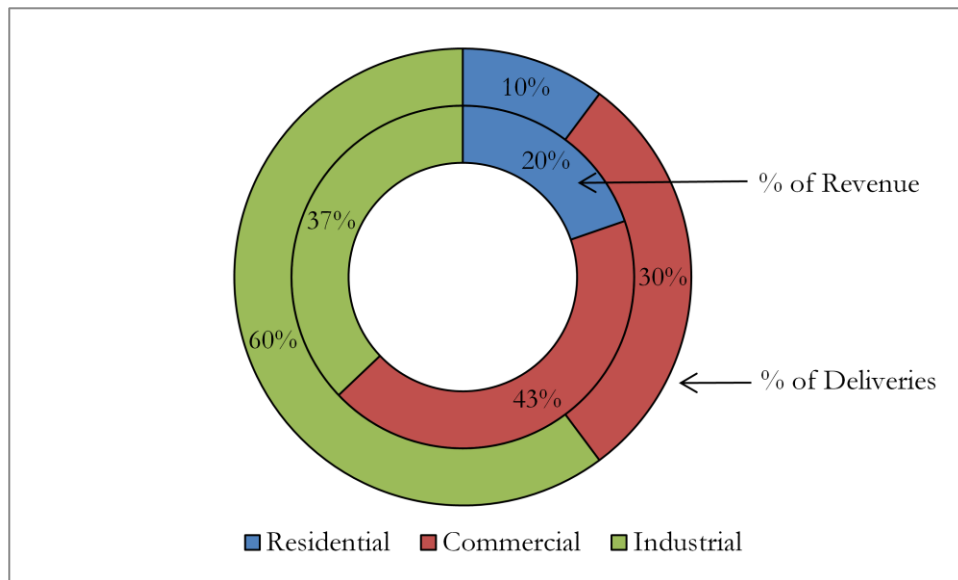
19 **II. GAZ MÉTRO**

20 **Q: 7 Please describe the operations of Gaz Métro.**

21 A: Gaz Métro's customer base in Quebec is composed of approximately 127,000 residential
22 customers and 62,000 commercial and industrial customers (of which around 4,000

1 customers are considered to be institutional customers) for a total of approximately
2 189,000 customers.⁵ Gaz Métro predominantly serves commercial and industrial load in
3 its service territory. My understanding is that over the last decade, Gaz Métro has been
4 pursuing efforts to increase natural gas market share in the residential market.
5 Nonetheless, Gaz Métro remains highly reliant on industrial load. Below is a visual
6 representation of Gaz Métro's load profile for its Quebec operations in 2012.

7 **Figure 1: Gaz Métro Customer Load Profile 2012⁶**



8

9 Natural gas continues to enjoy a competitive price advantage over No. 6 Oil, No. 2 Oil,
10 and Hydro Quebec's off-peak electricity rate. However, electricity has the largest market
11 share in Quebec because the price in that market is low. While natural gas remained the
12 lowest cost fuel source for each of the markets served by Gaz Métro in 2012, it
13 continuously faces strong competition from electricity in the residential market, a

⁵ R-3752-2011, GM-8 Doc. 10, GM-13 Doc. 8, at p. 62.

⁶ Source: Gaz Métro 2012 Annual Information Form.

1 situation largely due to the fluctuation in the price of natural gas as a commodity, which
2 must be sold to Gaz Métro’s customers at cost.

3 **Q: 8 What is Gaz Métro’s capital structure?**

4 A: Gaz Métro’s deemed capital structure is comprised of 38.50 percent common equity,
5 7.50 percent preferred equity, and 54.00 percent debt.

6 **Q: 9 How do credit rating agencies view Gaz Métro’s financial risk?**

7 A: Credit rating agencies continue to have a favorable view of Gaz Métro Inc.’s financial
8 risk. A recent report from Dominion Bond Rating Service (“DBRS”) states that the
9 Company’s “financial profile has remained solid, with moderate debt leverage and strong
10 interest coverage ratios.”⁷

11 **III. LEGAL REQUIREMENTS AND KEY REGULATORY PRECEDENTS FOR THE**
12 **DETERMINATION OF A FAIR RETURN**

13 **Q: 10 What are the key legal and regulatory precedents in Canada and the U.S.?**

14 A: The principles surrounding the concept of a “fair return” for a regulated company were
15 first established by the Supreme Court of Canada in the *Northwestern Utilities v. City of*
16 *Edmonton* (1929) (“Northwestern”) case, where the Supreme Court found:

17 By a fair return is meant that the company will be allowed as large a
18 return on the capital invested in its enterprise (which will be net to
19 the company) as it would receive if it were investing the same amount
20 in other securities possessing an attractiveness, stability and certainty
21 equal to that of the company’s enterprise.⁸

⁷ Source: DBRS, October 31, 2012.

⁸ *Northwestern* at p. 186

1 The United States common law regarding fair return for utility cost of capital has
2 evolved similarly. The U.S. Court set out guidance in the bellwether cases of *Bluefield*
3 *Water Works* and *Hope Natural Gas Co.* as to the legal criteria for setting a fair return. In
4 *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*
5 (262 U.S. 679, 693 (1923)), the Court indicated that:

6 The return should be reasonably sufficient to assure confidence in
7 the financial soundness of the utility and should be adequate, under
8 efficient and economical management, to maintain and support its
9 credit and enable it to raise the money necessary for the proper
10 discharge of its public duties. A rate of return may be reasonable at
11 one time and become too high or too low by changes affecting
12 opportunities for investment, the money market and business
13 conditions generally.
14

15 The U.S. Court has further elaborated on this requirement in its decision in *Federal Power*
16 *Commission v. Hope Natural Gas Company* (320 U.S. 591, 603 (1944)). There the Court
17 described the relevant criteria as follows:

18 From the investor or company point of view it is important that
19 there be enough revenue not only for operating expenses but also for
20 the capital costs of the business. These include service on the debt
21 and dividends on the stock.... By that standard the return to the
22 equity owner should be commensurate with returns on investments
23 in other enterprises having corresponding risks. That return,
24 moreover, should be sufficient to assure confidence in the financial
25 integrity of the enterprise, so as to maintain its credit and to attract
26 capital.

27 With the passage of time, the fair return standard has been interpreted many times in
28 both Canada and the U.S. The National Energy Board (“NEB”) summarized its
29 interpretation of the “fair return standard” in its RH-2-2004 Phase II Decision and more

1 recently reiterated that interpretation in its *Trans Québec & Maritimes Pipelines Inc.* RH-1-
2 2008 Decision.

3 The Board is of the view that the fair return standard can be
4 articulated by having reference to three particular requirements.
5 Specifically, a fair or reasonable return on capital should:

- 6 • be comparable to the return available from the application of the
7 invested capital to other enterprises of like risk (the comparable
8 investment standard);
- 9 • enable the financial integrity of the regulated enterprise to be
10 maintained (the financial integrity standard); and
- 11 • permit incremental capital to be attracted to the enterprise on
12 reasonable terms and conditions (the capital attraction standard).

13 In the Board's view, the determination of a fair return in accordance with
14 these enunciated standards will, when combined with other aspects for the
15 Mainline's revenue requirement, result in tolls that are just and reasonable.⁹

16 Similarly, the Ontario Energy Board ("OEB") has discussed the necessity of adhering to
17 the fair return standard as follows:

18 The Board affirms its view that the Fair Return Standard frames the
19 discretion of a regulator, by setting out the three requirements that
20 must be satisfied by the cost of capital determinations of the tribunal.
21 Meeting the standard is not optional; it is a legal requirement.
22 Notwithstanding this obligation, the Board notes that the Fair Return
23 Standard is sufficiently broad that the regulator that applies it must
24 still use informed judgment and apply its discretion in the
25 determination of a rate regulated entity's cost of capital.¹⁰

26 ***

⁹ National Energy Board RH-2-2004 Reasons for Decision, TransCanada PipeLines Ltd, Phase II, April 2005, at p. 17.

¹⁰ Ontario Energy Board, EB-2009-084, Report of the Board on the cost of Capital for Ontario's Regulated Utilities, December 11, 2009, at i.

1 ... all three standards or requirements (comparable investment,
2 financial integrity, and capital attraction) must be met and none ranks
3 in priority to the others. The Board agrees with the comments made
4 to the effect that the cost of capital must satisfy all three
5 requirements which can be measured through specific tests and that
6 focusing on meeting the financial integrity and capital attraction tests
7 without giving adequate comparability to the comparable investment
8 test is not sufficient to meet the [Fair Return Standard].¹¹

9 **Q: 11 Has the Régie adopted the same legal standards for application of the fair**
10 **return standard as those described above?**

11 A: Yes. The Régie embraces the same legal standards for the application of the fair return
12 standard as those put forth by the NEB, the OEB and those established through
13 Canadian and U.S. common law. The Régie recognizes the three primary criteria of the
14 fair return standard (i.e., the comparability standard, the financial integrity standard, and
15 the capital attraction standard) and has indicated that they should be used as a guide in
16 exercising its role with respect to fixing a reasonable rate of return.¹² In addition, the
17 Régie has indicated that its duty is to determine a reasonable rate of return and the
18 method which it uses is at its discretion.¹³ The Régie has also recognized that, like
19 operating costs, the return allowed to the shareholder is one of the elements of the
20 regulated company's cost of service. The allowed return must, under the official Act¹⁴
21 governing utility regulation, ensure that there are sufficient revenues to cover all of the
22 costs.¹⁵

¹¹ Ibid, at p. 19.

¹² Régie de l'énergie, D-2009-156, Décision, Gaz Métro, (December 7, 2009), at p.189.

¹³ Ibid., at p. 195.

¹⁴ R.S.Q., chapter R-6.01, the ("Act") The Act authorizes the Régie to set rates for regulated energy utilities in Québec.

¹⁵ Régie de l'énergie, D-2009-156, Décision, Gaz Métro, (December 7, 2009), at [192].

1 **Q: 12 Please elaborate on the three criteria required by the fair return standard.**

2 A: As discussed earlier, there are three criteria required by the fair return standard: (1)
3 comparable earnings, (2) financial integrity, and (3) capital attraction. Certain
4 examination is necessary to ensure that those standards are satisfied. Criterion (1)
5 requires an examination of the returns that are actually earned in the primary financial
6 markets by enterprises with corresponding risks. Criteria (2) and (3) generally will be
7 satisfied best by employing the economic concept of the cost of capital or opportunity
8 cost in establishing the allowed rate of return on common equity. Criterion (2) suggests
9 that the *overall* allowed rate of return must also be sufficient to maintain a solid
10 investment-grade bond rating. For every investment alternative, investors consider the
11 risks attached to the investment and attempt to evaluate whether the return they expect
12 to earn is adequate for the risks undertaken. Investors also consider whether there might
13 be other investment opportunities that would provide a better return relative to the risk
14 involved. This weighing of alternatives and the highly competitive nature of capital
15 markets causes the prices of stocks and bonds to adjust in such a way that investors can
16 expect to earn a return that is just adequate for the risks involved. Thus, for any given
17 level of risk, there is a corresponding level of return that investors must expect in order
18 to induce them to voluntarily undertake that risk and not invest their money elsewhere.
19 That return is referred to as the “opportunity cost” of capital or “investor required”
20 return.

1 **IV. SELECTION OF PROXY COMPANIES**

2 **Q: 13 Why is it necessary to select a proxy group to estimate the fair return on**
3 **equity for Gaz Métro?**

4 A: Since the ROE is a market-based concept, and given the fact that Gaz Métro is not a
5 publicly traded entity, it is necessary to establish a group of companies that are both
6 publicly traded and comparable to Gaz Métro in certain fundamental business and
7 financial respects to serve as its “proxy” for purposes of the ROE estimation process.
8 Further, the Régie has indicated in prior decisions that the return on equity should be set
9 on a “stand-alone” basis, as if the Company were independently seeking to attract capital
10 in the financial markets.¹⁶

11 Even if Gaz Métro’s regulated gas distribution operations made up the entirety of a
12 publicly traded entity, it is possible that transitory events could bias that entity’s market
13 value in one way or another over a given period of time. A significant benefit of using a
14 proxy group, therefore, is its ability to mitigate the effects of anomalous events that may
15 be associated with any one company, and to avoid the problem of circularity if the
16 regulator sets the allowed ROE based on market information for that same company.
17 As demonstrated later in this section, the proxy companies used in the ROE analyses
18 possess a set of business and financial characteristics that are similar to Gaz Métro’s
19 regulated gas distribution operations, and thus provide a reasonable basis for the
20 derivation and assessment of ROE estimates.

¹⁶ See, Régie de l’Énergie du Québec, D-2002-95, File R3401-98, Hydro Quebec TransÉnergie, Decision on the Revised Application on Changes in Transmission Rates, at p. 163.

1 **Q: 14 Does the careful selection of a proxy group suggest that analytical results will**
2 **be tightly clustered around average results?**

3 A: Not necessarily. Notwithstanding the care taken to ensure risk comparability, market
4 expectations with respect to future risks and growth opportunities will vary from
5 company to company. Therefore, even within a group of similarly situated companies, it
6 is common for analytical results to reflect a seemingly wide range. At issue, then, is how
7 to select an ROE estimate in the context of that range. That determination must be
8 based on an assessment of the company-specific risks relative to the proxy group and the
9 informed judgment and experience of the analyst.

10 **Q: 15 Why have you developed two proxy groups?**

11 A: Since the purpose of this proceeding is to establish the allowed ROE for the gas
12 distribution operations of Gaz Métro in Quebec, and because there are very few
13 publicly-traded, pure-play gas distribution companies in Canada, I have selected a sample
14 of Canadian utilities to provide a benchmark for the risks and resulting cost of capital of
15 Canadian utilities in general. Then, in order to ascertain an additional perspective on the
16 risks specific to a gas distribution utility, I developed a sample of U.S. companies that are
17 primarily engaged in natural gas distribution.

18 **Q: 16 Please describe how you selected the Canadian proxy group.**

19 A: I developed a group of publicly-traded regulated Canadian electric and natural gas utility
20 companies. Because there are relatively few companies in that sector in the Canadian
21 public markets, the only screening criterion was an investment grade credit rating, which
22 all companies in that sector have. Further, I excluded Valener, Inc., which is the parent

1 holding company of Gaz Métro, due to concerns about the circularity of relying on data
2 for the parent holding company to develop the allowed ROE. The following five
3 companies comprise the Canadian Utility Proxy Group:

- 4 • Canadian Utilities Limited
- 5 • Emera, Inc.
- 6 • Enbridge, Inc.
- 7 • Fortis, Inc.
- 8 • TransCanada Corp.

9 **Q: 17 How did you select the group of U.S. natural gas distribution proxy**
10 **companies that are risk appropriate for Gaz Métro?**

11 A: I started with the eleven companies that Value Line classifies as Natural Gas
12 Distribution Companies. From that group, I included companies that:

- 13 • Have credit ratings of at least BBB+ from S&P;
- 14 • Pay dividends;
- 15 • Have earnings growth rates from at least two utility industry analysts;
- 16 • Derive at least 70 percent of their operating income from regulated
17 operations in the period from 2009-2011;
- 18 • Derive at least 70 percent of their regulated operating income from natural
19 gas distribution service in the period from 2009-2011; and
- 20 • Are not involved in a merger or other significant transformative transaction
21 during the evaluation period.

1 **Q: 18 What companies met those screening criteria?**

2 A: The following nine companies met those criteria:

- 3 • AGL Resources Inc.
- 4 • Atmos Energy Corp.
- 5 • Laclede Group, Inc.
- 6 • New Jersey Resources, Inc.
- 7 • Northwest Natural Gas Co.
- 8 • Piedmont Natural Gas Co., Inc.
- 9 • South Jersey Industries, Inc.
- 10 • Southwest Gas Corp.
- 11 • WGL Holdings Inc.

12 **Q: 19 What is the importance of your credit rating screen?**

13 A: Credit ratings are based on the utility's business risk profile (which includes an
14 assessment of the regulatory environment in which the utility operates) and its financial
15 risk profile. Companies with similar credit ratings have been determined by the rating
16 agency to have similar levels of business and financial risk. This concept has also been
17 adopted by regulatory agencies, including the Federal Energy Regulatory Commission
18 ("FERC"), which has found that "it is reasonable to use the proxy companies' corporate

1 credit rating as a good measure of investment risk, since this rating considers both
2 financial and business risk.”¹⁷

3 The Régie has also recognized in previous decisions that credit ratings are an important
4 indicator of business and financial risk. Specifically, in the last Gaz Métro decision, the
5 Régie stated: “The Régie considers the credit rating and the information contained in
6 the S&P Utility Report, particularly with respect to regulated natural gas distribution
7 activities in Quebec, to be relevant information that the market uses in assessing Gaz
8 Métro’s risk...”¹⁸

9 My credit rating screen selects U.S. gas distribution companies with credit ratings of
10 BBB+ or higher from S&P, thereby taking into consideration the business and financial
11 risk profile of those utility companies to ensure that they are comparable to Gaz Métro.
12 Gaz Métro is rated A- by S&P, while the average S&P credit rating for the U.S. proxy
13 group of gas distribution companies is also A-.

14 **Q: 20 What is your conclusion regarding the selection of proxy groups of Canadian**
15 **and U.S. companies with similar credit ratings to Gaz Métro?**

16 A: As explained above, credit ratings take into consideration both business and financial
17 risk. Selecting a proxy group of low-risk U.S. gas distribution utilities with similar credit
18 ratings to Gaz Métro minimizes the need to adjust the U.S. results to account for
19 perceived differences in risk between U.S. and Canadian utilities. To reinforce this

¹⁷ See, for example, *Potomac-Appalachian Transmission Highline, LLC*, 122 FERC ¶ 61,188 at P 97 (2008).

¹⁸ Régie de L’Energie du Quebec, Decision D-2011-182, File R-3752-2011, Phase 2, November 25, 2011, at [294-295].

1 conclusion, I have evaluated the business and financial risks of Gaz Métro in relation to
2 each gas distribution operating company within the Canadian and U.S. proxy groups.

3 **Q: 21 Are any of the utilities in the Canadian and U.S. proxy groups engaged in**
4 **non-regulated operations, and, if so, how does that affect the choice of an**
5 **appropriate proxy group?**

6 A: Yes. Regulated utilities are typically part of a holding company structure, which may also
7 include non-regulated business activities. In particular, several companies in the
8 Canadian proxy group have affiliates that are engaged in non-regulated activities. As
9 shown on Exhibit JMC-2, Schedule 2, three of the five companies in the Canadian proxy
10 group derived more than 60 percent of their operating income from regulated activities
11 and dedicated more than 68 percent of their assets to the provision of regulated utility
12 service in 2011. Two companies, however, are primarily engaged in the oil and gas
13 pipeline business, which has different business risks than the regulated gas distribution
14 business. The extent of non-regulated activities at Enbridge, Inc. and TransCanada
15 Corp. tends to support the use of a proxy group of U.S. regulated gas distribution
16 companies to estimate the cost of equity for Gaz Métro, supplemented by the results for
17 the Canadian proxy group.

18 Non-regulated operations are not a significant concern for the U.S. proxy group because,
19 as also shown on Exhibit JMC-2, Schedule 2, regulated gas distribution service
20 represented approximately 85 percent of operating income and 87 percent of assets for
21 those companies in 2011. Furthermore, I address this issue in my testimony by
22 conducting my risk analysis at the operating company level, so that the risk comparison
23 reflects the operations of the regulated utilities. This enables comparisons between

1 utilities, while mitigating concerns that the results are unduly influenced by the non-
2 regulated activities of the parent holding companies.

3 **V. PRECEDENT FOR CONSIDERING U.S. DATA**

4 **Q: 22 Has the Régie considered the use of U.S. data as it relates to setting the return**
5 **on equity for regulated utilities in Quebec?**

6 A: Yes. Recently, the Régie has given equal weight to U.S. data in estimating the market
7 risk premium. In a 2009 Order, the Régie stated:

8 With respect to the weighting of Canadian and U.S. data to be used
9 in estimating the market risk premium, the Régie, in Decision D-99-
10 150, established a weight of 60% for Canadian data and 40% for U.S.
11 data. Based on the evidence in this case, the Régie bases its estimate
12 of the market risk premium using equal portions of Canadian and
13 U.S. data. It considers that the opening of markets offers investors
14 various investment options such that it is necessary to reflect the
15 situation in establishing a reasonable rate of return. It also justifies
16 greater consideration of U.S. data because of the increasing
17 integration of the two economies.¹⁹

18 The Régie, however, previously has indicated that applicants have not provided it a
19 sufficient basis to conclude that it was reasonable to consider U.S. proxy group results to
20 estimate the cost of equity for natural gas or electric utilities in Quebec. Specifically, the
21 Régie has expressed concerns with the evidence that has been presented in previous
22 cases with respect to the use of U.S. proxy groups and the use of authorized returns for
23 regulated utilities in the U.S. as a relevant benchmark for Canadian electric and natural
24 gas utilities. Among the specific concerns cited by the Régie are the following:

¹⁹ Régie de l'Énergie du Québec, Société en Commandite Gaz Métro, D-2009-156, R-3690-2009, December 7, 2009, at part [249].

- 1 • The Régie believes that the distributor has not demonstrated that the
2 opportunities on the U.S. market are comparable in terms of risk.²⁰
- 3 • The Régie has not been persuaded that the regulatory, institutional, economic
4 and financial contexts of the two countries and their impacts on the resulting
5 opportunities for investors are comparable.²¹
- 6 • The Régie has found that the evidence has not been very convincing
7 regarding the reasons that would justify relying on authorized returns in the
8 U.S. as a reference point for the rates to allow in Quebec.²²
- 9 • The Régie has indicated that a relevant aspect of the risk assessment is a
10 comparison between the authorized and realized returns of regulated U.S.
11 companies with comparable risk, over a long period, and limited to the
12 regulated operations of the companies in the sample.²³

13 **Q: 23 Is there precedent among other Canadian utility regulators for considering**
14 **U.S. data and a U.S. proxy group to estimate the cost of equity for a Canadian**
15 **utility?**

16 A: Yes, there is. In recent orders, Canadian regulators have determined that it is
17 appropriate to consider the use of U.S. data and proxy groups to estimate the allowed
18 ROE for a Canadian regulated utility. Regulators in Canada have noted several reasons
19 that support consideration of U.S. data. First, the development of a proxy group
20 comprised entirely of Canadian gas distribution utilities is difficult due to the small

²⁰ Régie de L'Énergie du Québec, Decision D-2011-182, File R-3752-2011, Phase 2, November 25, 2011, at part [270].

²¹ Ibid, at parts [294-295].

²² Ibid, at part [270].

²³ Ibid, at part [271].

1 number of publicly-traded utilities in Canada and the fact that many of those Canadian
2 companies derive a significant percentage of their revenues and net income from
3 operations other than the provision of regulated natural gas distribution service. Second,
4 this problem has been exacerbated by the continuing trend toward mergers and
5 acquisitions in the utility industry, both within Canada and across the border with U.S.
6 utility companies.

7 The question for Canadian regulators has become – How best to account for any
8 differences between U.S. and Canadian utilities? My research and analysis demonstrates
9 that it is possible to select a group of U.S. gas distribution utilities which is comparable
10 to Gaz Métro in terms of business risk and financial risk. In that regard, I agree with the
11 conclusion of the OEB that it is not necessary to find that utilities are the *same*, only that
12 they are *comparable*, and with the NEB conclusion that it is possible to account for
13 differences in risk that would influence an investor’s required rate of return.

14 **Q: 24 Please summarize the recent orders in which Canadian regulators have**
15 **accepted the use of U.S. data to estimate the cost of equity for a regulated utility**
16 **in Canada.**

17 A: A growing number of Canadian utility regulators have accepted the use of U.S. data or
18 U.S. proxy groups in recent years. For example, in its TQM Decision, the NEB found
19 that U.S. market returns are relevant to the cost of capital for Canadian firms, and that
20 the regulatory regimes in Canada and the U.S. are sufficiently similar as to justify
21 comparison. The NEB appears to view U.S. market returns as valuable information in
22 terms of establishing the cost of capital for Canadian utilities. Moreover, the NEB
23 found that Canadian utilities are competing for capital in global financial markets that are

1 increasingly integrated. The NEB recognized that it is no longer possible to view
2 Canada as insulated from the remainder of the investing world, and that doing so would
3 be detrimental to the ability of Canadian utilities to compete for capital.²⁴ This finding
4 suggests that it is reasonable and appropriate to consider a proxy group of U.S. utility
5 companies as sufficiently comparable to Canadian regulated utilities in terms of their risk
6 profile. Importantly, the NEB also found that the regulatory regimes in the U.S. and
7 Canada were sufficiently similar as to justify comparison between utilities in the two
8 countries, stating:

9 The Board is not persuaded that the U.S. regulatory system exposes
10 utilities to notable risks of major losses due either to unusual events
11 or cost disallowances. The Board views the losses and disallowances
12 experienced by U.S. regulated entities as a result of the restructuring
13 that took place to terminate the merchant gas function of pipelines,
14 as well as some other circumstances such as the Duquesne nuclear
15 build, to be, to a large extent, unique events. The Board also finds
16 that such instances are not likely to weigh significantly in investors'
17 perceptions today, and would thus have little or no impact on cost of
18 capital.²⁵

19 Likewise, the OEB concluded that the U.S. is a relevant source of comparable data and
20 that it often looks to the U.S. to inform its decisions:

21 The Board is of the view that the U.S. is a relevant source for
22 comparable data. The Board often looks to the regulatory policies of
23 State and Federal agencies in the United States for guidance on
24 regulatory issues in the province of Ontario. For example, in recent
25 consultations, the Board has been informed by U.S. regulatory
26 policies relating to low income customer concerns, transmission cost
27 connection responsibility for renewable generation, and productivity
28 factors for 3rd generation incentive ratemaking.
29 Finally, the Board agrees with Enbridge that, while it is possible to
30 conduct DCF and CAPM analyses on publicly-traded Canadian utility

²⁴ National Energy Board, Reasons for Decision, TQM R-H-1-2008 (March 2009), at p. 67.

²⁵ Ibid.

1 holding companies of comparable risk, there are relatively few of
2 these companies. As a result, the Board concludes that North
3 American gas and electric utilities provide a relevant and objective
4 source of data for comparison.²⁶

5 Finally, the British Columbia Utilities Commission (“BCUC”) accepted the use of U.S.
6 data, stating:

7 In addition, the Commission Panel continues to be prepared to
8 accept the use of historical and forecast data of U.S. utilities when
9 applied: as a check to Canadian data, as a substitute for Canadian data
10 when Canadian data do not exist in significant quantity or quality, or
11 as a supplement to Canadian data when Canadian data gives
12 unreliable results. Given the paucity of relevant Canadian data, the
13 Commission Panel considers that natural gas distribution companies
14 operating in the US have the potential to act as a useful proxy in
15 determining TGI’s capital structure, ROE, and credit metrics.²⁷

16 In summary, other regulatory authorities in Canada have recognized that Canadian utility
17 companies are competing for capital in global financial markets and that Canadian data is
18 often limited by the small number of publicly-traded utilities. They have also recognized
19 the integrated nature of Canadian and U.S. financial markets, and the similarity of the
20 utility regulatory regimes. Therefore, they have determined that it is reasonable and
21 appropriate to consider the results of a risk-comparable U.S. proxy group for purposes
22 of establishing the allowed ROE for a Canadian natural gas or electric utility.

23 **Q: 25 How have you addressed the Régie’s previous concerns with the use of a U.S.**
24 **proxy group to estimate the return on equity for regulated utilities in Quebec**
25 **such as Gaz Métro?**

²⁶ Ontario Energy Board, EB-2009-0084, Report of the Board on the Cost of Capital for Ontario’s Regulated Utilities, December 11, 2009, at p. 23.

²⁷ British Columbia Utilities Commission, In the Matter of Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc., Terasen Gas (Whistler) Inc., Return on Equity and Capital Structure, Decision G-158-09, December 16, 2009, at pp. 15-16.

1 A: The following sections of the testimony address each of the specific concerns expressed
2 by the Régie, starting with the comparability of business and economic conditions in
3 Canada and the U.S., followed by a detailed assessment of the business and financial
4 risks of Gaz Métro relative to the Canadian and U.S. proxy groups.

5 **VI. BUSINESS AND ECONOMIC CONDITIONS IN CANADA AND THE U.S.**

6 **Q: 26 How is the fair return standard affected by the business and economic climate**
7 **for utilities in Canada and the U.S.?**

8 A: In order for utilities to fund their operations, they must be able to attract capital on
9 reasonable terms and conditions from investors with a broad array of alternative
10 investment options (the capital attraction standard). To do so, utilities must offer
11 returns that are comparable to enterprises of similar risk (the comparable investment
12 standard). These elements of capital attraction and comparability of investment risk
13 cannot be separated from the business and economic environment that frames capital
14 market and investor expectations. In a world of increasingly linked economies and
15 capital markets, investors seek returns from a global basket of investment options.
16 Investors discriminate between risks on a country-to-country basis, factoring in the
17 comparability of the economies and the business environments.

1 **Q: 27 Have you evaluated the relative economic and business conditions in Canada**
2 **and the U.S. that affect investment risk?**

3 A: Yes, I have. Country-specific economic and business conditions that affect investment
4 risk may be measured through a variety of qualitative and quantitative metrics. One such
5 measure, produced by the Economist Intelligence Unit (affiliated with the *Economist*
6 magazine), ranks the world's largest economies based on a range of factors impacting the
7 business environment. According to the report:

8 The business rankings model measures the quality or attractiveness of
9 the business environment in the 82 countries covered by *Country*
10 *Forecasts* using a standard analytical framework. It is designed to
11 reflect the main criteria used by companies to formulate their global
12 business strategies, and is based not only on historical conditions but
13 also on expectations about conditions prevailing over the next five
14 years.

15
16 The business rankings model examines [91 indicators] in ten separate
17 criteria or categories, covering the political environment, the
18 macroeconomic environment, market opportunities, policy towards
19 free enterprise and competition, policy towards foreign investment,
20 foreign trade and exchange controls, taxes, financing, the labor
21 market and infrastructure.²⁸

22 The business environment ranks are updated annually in individual country forecasts.
23 Based on the April 2012 update, which provides both the historical 2007-2011 rank and
24 the projected 2012-2016 rank for 82 countries, Canada and the U.S. are ranked 4th and
25 5th respectively over the historic period, and 5th and 9th over the projected five years.²⁹

26 This report suggests that from a business investment perspective, Canada and the U.S.
27 are highly comparable in a global context.

²⁸ "World Investment Prospects to 2011," Economist Intelligence Unit, written with the Columbia University Program on International Development, 2007 Edition, at pp. 38, 39, 235.

²⁹ The Economist Intelligence Unit, Country Forecast United States Updater April 2012, and Country Forecast Canada Updater April 2012.

1 The World Economic Forum also publishes its annual Global Competitiveness Report,
2 which ranks 144 countries on twelve economic factors, including institutions,
3 infrastructure, the macroeconomic environment, health and primary education, higher
4 education and training, goods market efficiency, labor market efficiency, financial market
5 development, technological readiness, market size, business sophistication, and
6 innovation.³⁰ According to the 2012-2013 report, Canada is ranked 14th, and the U.S. is
7 ranked 7th in competitiveness and productivity.³¹ The report describes the Global
8 Competitiveness Index as “a comprehensive tool that measures the microeconomic and
9 macroeconomic foundations of national competitiveness.”³² The report further explains:

10 We define competitiveness as the set of institutions, policies, and
11 factors that determine the level of productivity of a country. The
12 level of productivity, in turn, sets the level of prosperity that can be
13 earned by an economy. The productivity level also determines the
14 rates of return obtained by investments in an economy, which in turn
15 are the fundamental drivers of its growth rates.³³

16 **Q: 28 Are you aware of any reports that have commented on the relative strength of**
17 **the Canadian economy?**

18 A: Yes. In a recent report, S&P commented:

19 Standard and Poor’s base case outlook is for subdued growth in
20 Canada, with real GDP advancing 2.1% in 2012 and 1.9% in 2013.
21 Our forecast assumes the fragile position of the global recovery,
22 impairment in international trade, and the high value of the Canadian
23 dollar will continue to dampen business for Canadian exporters. The
24 economic headwinds buffeting Canadian exports stem primarily from
25 the loss of economic momentum in the U.S. and recessionary

³⁰ “The Global Competitiveness Report: 2012-2013”, World Economic Forum, Centre for Global Competitiveness and Performance, at pp. 4-7.

³¹ Ibid, Table 3, at p. 13.

³² Ibid, at p. 4.

³³ Ibid.

1 conditions in Europe, Canada's two main export markets and the
2 destination for more than 80% of Canada's exports. We don't expect
3 Europe to emerge from recession until later in 2013, while for the
4 U.S. we see subpar GDP growth of about 2% continuing through the
5 end of 2013.³⁴

6 From the current vantage point it appears that downside risk to
7 Canada's economy will continue to outweigh upside potential
8 through 2013. We expect the weakened global economy and
9 impairment in international trade to limit growth. Domestic
10 spending is unlikely to be a major source of growth as consumers
11 appear to be focusing more on repairing their balance sheets and less
12 willing to spend. Against this backdrop, we expect nonfinancial
13 companies to remain focused on conserving capital, tempering their
14 investment plans. We see this spilling over into reduced hiring
15 activity and weakening demand for labor, which could put downward
16 pressure on unemployment through the first half of 2013. We think
17 this means income growth will remain subdued so it appears the
18 stage is set for a moderation in housing demand.³⁵

19 **Q: 29 Has the Bank of Canada commented on the effect of U.S. economic activity**
20 **and financial conditions on the Canadian business cycle?**

21 A: Yes. A Discussion Paper presented by the Bank of Canada discusses the linkage
22 between the U.S. and Canadian economies, noting that:

23 For Canada in particular, developments in U.S. economic activity and
24 financial conditions are likely to exert a significant effect on the
25 Canadian business cycle. Historically, the effect of the U.S. business
26 cycle on the Canadian business cycle has generally been studied
27 through trade linkages, since the United States represents about
28 three-quarters of Canadian trade. However, there are also strong
29 financial linkages between Canada and the United States. For
30 example, Canadian non-financial corporations rely on U.S. financing,
31 since about 20 per cent of shares of Canadian firms are held by U.S.
32 residents. Moreover, foreign loans typically account for about 40 per
33 cent of total bank loans to the Canadian non-bank sector,

³⁴ Economic Research: A Weakened Global Economy Threatens Canada's Growth Momentum, Standard & Poor's Ratings Direct, October 3, 2012, at 2.

³⁵ Ibid, at pp. 7-8.

1 highlighting the importance of foreign credit for Canada [excluding
2 mortgages]. Therefore, developments in U.S. financial conditions
3 may exert a significant effect on the Canadian business cycle.³⁶

4 **Q: 30 Have you compared the overall economic and investment environment in**
5 **Canada and the U.S.?**

6 A: Yes, Exhibit JMC-1 presents several measures that reflect the overall economic and
7 investment environment in Canada and the U.S. The first measure compares the returns
8 to investors from the TSX 300 and S&P 500 stock indices. From 1987 through 2011,
9 the total return on the TSX 300 was 9.61 percent compared to 10.91 percent for the
10 S&P 500. Over the past five years, the total return on the TSX 300 has been 1.7 percent
11 higher than the S&P 500. Turning to the Utility Stock Index, U.S. utilities outperformed
12 their Canadian counterparts in five of the last nine years. While the broader market
13 returns were higher for Canadian companies over the most recent ten and five year
14 periods, average total returns for Canadian and U.S. utility investors have been very
15 similar between 2003 and 2011 (i.e., 12.77 percent vs. 12.90 percent, respectively).³⁷

16 As also shown on Exhibit JMC-1, the correlation between real GDP growth rates in the
17 two countries is strong, as is the correlation between the consumer price indices for each
18 country, indicating that these metrics tend to move together over time between the two
19 countries. Over the 25-year period, real GDP growth has been 2.50 percent in Canada
20 and 2.58 percent in the U.S., while consumer inflation has been 2.44 percent in Canada
21 and 2.92 percent in the U.S. Unemployment rates over the 25 year and ten year periods
22 have been substantially higher in Canada (e.g., 7.51 percent in Canada vs. 5.94 percent in

³⁶ Financial Spillovers Across Countries: The Case of Canada and the United States, Bank of Canada Discussion Paper, 2011-1, Kimberly Beaton and Brigitte Desroches, January 2011, at p. 1.

³⁷ Source: Bloomberg Professional Service. Return includes both price appreciation and dividend yield. Dividend data were not available for the S&P/TSX Utilities Index prior to 2003.

1 the U.S. since 1987), but that trend has reversed since 2009 as the U.S. has been slower
2 to recover from the recent recession.

3 **Q: 31 Have you also compared bond yields between Canada and the U.S.?**

4 A: Yes. The average yields on 10-year government bonds have also been very similar in
5 Canada and the U.S. over the past decade. Specifically, the 10-year average yield on 10-
6 year Canadian government bonds has been 4.01 percent, while the average yield on U.S.
7 Treasury bonds has been 3.95 percent. During 2011, the average yield on 10-year
8 government bonds was 2.78 percent in Canada and 2.79 percent in the U.S. The 30-day
9 average yield on 10-year government bonds through October 31, 2012 was 1.81 percent
10 in Canada and 1.71 percent in the U.S.³⁸ The correlation between average annual interest
11 rates on 10-year government bonds in Canada and the U.S. since 1987 has been 0.98, the
12 highest of all macroeconomic indicators compared; similarly, the correlation between
13 daily average interest rates on 10-year government bonds in Canada and U.S. from 2008
14 through 2011 has been 0.99, as central banks in both countries responded to the credit
15 crisis and financial market dislocation by providing supportive monetary policy.
16 Correlations of this degree are reflective of closely integrated financial markets.

17 One discernible difference between Canada and the U.S. from an investment perspective
18 is that the projected yield on the long-term government bond is somewhat higher in the
19 U.S. Specifically, the projected yield on the 30-year U.S. government Treasury bond is
20 4.54 percent, while the projected yield on the 30-year Canadian government bond is 3.75
21 percent. That differential of 79 basis points represents investors' varying expectations
22 regarding projected inflation rates and economic growth in the two countries. By

³⁸ Source: Bloomberg Professional Service.

1 contrast, as noted above, the average 30-day yield on 10-year government bonds is
2 slightly higher in Canada than the U.S., which suggests that investors' "risk free" return
3 expectations for both countries are similar over the intermediate term. In my view,
4 equity investors' time horizon, based on the anticipated holding period for utility stocks,
5 is more likely to be five to ten years rather than 30 years. Therefore, I do not believe it is
6 appropriate to make an adjustment for differences in interest rates between Canada and
7 the U.S. at this time.

8 **Q: 32 What other evidence did you rely on to assess the extent to which the**
9 **Canadian and U.S. economies are integrated?**

10 A: First, the magnitude and significance of trade between the two countries indicates the
11 high degree of integration between the two economies. In 2011, in terms of trade in
12 goods, 73.7 percent of Canada's total exports went to the U.S., and imports from the
13 U.S. accounted for 49.5 percent of Canada's total imports.³⁹ Second, according to a
14 report by the Congressional Research Service ("CRS"), Canada is the largest single-
15 nation trading partner of the United States. The CRS observes:

16 That the United States and Canada trade substantial volumes of the
17 same goods bespeaks the economic integration of the two
18 economies. This integration has been assisted by trade liberalization
19 over the past 40 years, beginning with the Automotive Agreement of
20 1965 (which eliminated tariffs on shipments of autos and auto parts
21 between the two countries), through the Canada-U.S. Free Trade
22 Agreement of 1989, and NAFTA [the North American Free Trade
23 Agreement of 1994].⁴⁰

³⁹ Source: Trade Data Online – Canadian Trade Industry, Industry Canada.

⁴⁰ Ian F. Fergusson, "United States – Canada Trade and Economic Relationship: Prospects and Challenges," Congressional Research Service, September 14, 2011, at p. 3.

1 Furthermore, the CRS report comments on the amount of foreign investment between
2 Canada and the U.S. as follows:

3 The U.S.-Canada economic relationship is characterized by
4 substantial ownership interests in each nation by investors in the
5 other. The United States is the largest single investor in Canada, with
6 a stock of \$296.7 billion in 2010, a figure representing 7.6% of U.S.
7 direct investment abroad (DIA). U.S. investors accounted for 54.4%
8 of the stock of foreign direct investment (FDI) in Canada in 2010,
9 down from 64.1% in 2004... Canada had a prominent (though not
10 the largest) FDI position in the United States at \$206.1 billion, 8.8%
11 of the total FDI stock in the United States in 2010, and the United
12 States is the most prominent destination for Canadian DIA, with a
13 stock of 40.5% of total Canadian DIA that year.⁴¹

14 **Q: 33 What has been the exchange rate between Canada and the U.S., and how does**
15 **the exchange rate affect the value of investments for foreign investors?**

16 A: The value of the Canadian dollar has fluctuated versus the U.S. dollar (as with all
17 currencies) over the past 25 years. The Canadian dollar fell to \$1.57 per U.S. dollar in
18 2002 before rebounding to \$0.99 in 2011; it stands at \$1.00 as of October 31, 2012.⁴²
19 Consensus Forecasts projects that exchange rates between the Canadian and U.S. dollar
20 are expected to remain near parity through at least October 2014.⁴³

⁴¹ Ibid, at p. 10.

⁴² Source: U.S. Federal Reserve.

⁴³ Consensus Economics, Inc., Consensus Forecasts, Survey Date October 8, 2012, at p. 27.

1 **Q: 34 What are your conclusions regarding the economic and business**
2 **environments of Canada and the U.S. and their effect on investment risk?**

3 A: On balance, the economic and business environments of Canada and the U.S. are highly-
4 integrated and exhibit strong correlation across a variety of metrics, including GDP
5 growth and historical government bond yields. From a business risk perspective,
6 including overall business environment and competitiveness, Canada and the U.S. are
7 ranked closely when compared against other developed and developing countries. Based
8 on these macroeconomic indicators, there are no fundamental dissimilarities between
9 Canada and the U.S. (*i.e.*, in terms of economic growth, inflation, unemployment, or
10 government bond yields) that would cause a reasonable investor to have different return
11 expectations for the two countries.

12 **VII. RISK ANALYSIS**

13 **Q: 35 What is the purpose of the risk analysis?**

14 A: There are two purposes of my risk analysis. First, the risk analysis examines whether it is
15 reasonable and appropriate to use a Canadian and a U.S. proxy group of companies to
16 establish the allowed ROE for Gaz Métro. Secondly, the risk analysis evaluates whether
17 any adjustments should be made to the results for the Canadian and U.S. proxy groups
18 to account for differences in business and financial risk between those proxy groups and
19 Gaz Métro that cannot be fully mitigated through regulatory mechanisms that allow for
20 cost recovery and revenue stabilization. In order to evaluate the comparability of the
21 Canadian and U.S. proxy groups, I have examined the business and financial risks of
22 each operating company relative to those of Gaz Métro. The purpose of this evaluation

1 is to determine the extent to which the companies in the Canadian and U.S. proxy
2 groups operate in regulatory environments which provide them with similar risk
3 protection as Gaz Métro receives in Quebec.

4 **Q: 36 Have you examined the ownership, operations, and financing of each of the**
5 **companies in the Canadian and U.S. proxy groups?**

6 A: Yes, I have. Exhibit JMC-2, Schedule 1, presents the parent holding company, its
7 operating subsidiaries, the province or state in which the utility provides service, the S&P
8 credit rating, the 2011 regulated revenues, the number of retail distribution customers
9 served, and the percentage of sales to industrial customers. As shown on Exhibit JMC-
10 2, Gaz Métro has a similar credit rating as many of the companies in the Canadian and
11 U.S. proxy groups; Gaz Métro's regulated revenues are generally comparable to the other
12 distribution companies in the Canadian proxy group and somewhat higher than the
13 majority of operating companies in the U.S. proxy group; Gaz Métro has significantly
14 fewer retail distribution customers than other distribution companies in the Canadian
15 proxy group and fewer retail customers than the median operating utility in the U.S.
16 proxy group; and Gaz Métro is substantially more dependent on sales to industrial
17 customers than any of the companies in the Canadian or U.S. proxy groups.

18 **Q: 37 Please discuss the criteria that you have used and the analysis you have**
19 **performed to establish the comparability of your Canadian and U.S. proxy**
20 **groups.**

21 A: As previously noted, the Canadian proxy group is comprised of all publicly-traded,
22 investment grade regulated gas and electric utilities in Canada except Valener, Inc. Many

1 of these companies, however, are also engaged in businesses with different risk profiles
2 than Gaz Métro, such as regulated oil and gas pipelines as well as non-regulated
3 activities. The U.S. proxy group is more comparable to Gaz Métro's regulated gas
4 distribution operations in Quebec because the majority of operating companies in the
5 U.S. proxy group derive more than 85 percent of their operating income from regulated
6 gas distribution service.

7 In addition, as another indicator of whether the comparators have risk protection, I have
8 compared the allowed ROE to the earned ROE for the operating companies in the U.S.
9 proxy group. There are some limitations on this analysis due to data constraints or
10 settlement agreements that do not specify an authorized ROE; however, as discussed in
11 more detail later in my testimony, my analysis demonstrates that the majority of
12 companies in the Canadian and U.S. proxy groups have been able to earn their allowed
13 ROE in most instances from 2004-2011.

14 **A. Business Risk of Gaz Métro**

15 **Q: 38 Please define business risk.**

16 A: Business risk represents changes in revenues and costs that may result in variability in
17 cash flows and earnings and the ability for the utility to recover its costs including the
18 fair return on, and of, its capital in a timely manner due to regulatory or legislative
19 decisions.

1 **Q: 39 Please describe your business risk analysis.**

2 A: My business risk analysis has focused on seven critical business risks for gas distribution
3 companies, including the following:

- 4 (1) Gas Supply Risk;
- 5 (2) Volume/Demand Risk;
- 6 (3) Capital Cost Recovery Risk;
- 7 (4) Rate Regulation and Earnings Sharing;
- 8 (5) Regulatory Lag;
- 9 (6) Other Cost Recovery; and
- 10 (7) Longer-Term Risk.

11 The following section of my testimony discusses each of those business risks, and the
12 extent to which those risks have been mitigated through regulatory mechanisms that
13 allow for cost recovery and revenue stabilization. As a preliminary matter, I would note
14 that regulatory protections are generally more effective at reducing short-term business
15 risk, but may not fully mitigate longer-term business risk. Each section begins with a
16 discussion of the particular business risk for Gaz Métro and then examines the relative
17 situation for the Canadian and U.S. proxy groups. The results of my business risk
18 analysis are summarized on Exhibit JMC-3, Schedules 1-6. The percentages on that
19 exhibit are weighted based on the number of customers at each operating company. In
20 my view, that is a fair and reasonable representation of the percentage of utility revenues
21 and costs that are protected against a specific business risk. I excluded any operating

1 companies with fewer than 25,000 customers, as well as those which have recently been
2 sold.⁴⁴

3 1. Gas Supply Risk

4 **Q: 40 Please discuss the risk associated with gas supply.**

5 A: Gas supply costs typically are the largest cost category for gas distribution utilities,
6 representing approximately 50 percent to 65 percent of total operating costs. For that
7 reason, equity investors and credit rating agencies are focused on whether the utility has
8 any risk associated with recovery of those costs. According to Moody's, "both the
9 magnitude and volatility of these costs make fuel adjustment clauses one of the more
10 widely used and effective cost recovery mechanisms in the industry."⁴⁵ Further, natural
11 gas prices have historically been quite volatile. For those reasons, regulators generally
12 allow gas distributors to pass through gas supply costs to customers through a purchased
13 gas adjustment ("PGA") mechanism, which compares the actual cost of purchased gas to
14 the forecasted cost and adjusts rates so that the utility has neither a profit nor a loss on
15 its gas supply.

16 Purchased gas costs account for approximately 60 percent of Gaz Métro's total operating
17 expenses.⁴⁶ The Company's cost of natural gas is fully reflected in supply rates billed to
18 customers by means of a monthly PGA mechanism, whereby variations are leveled over
19 a forward-looking, moving 12-month period.

⁴⁴ Atmos Energy recently completed the sale of its gas distribution operations in Missouri, Illinois, and Iowa. In addition, Atmos announced the sale of its gas distribution operations in Georgia in August 2012; that transaction is pending approval.

⁴⁵ "Cost Recovery Provisions Key to Investor-Owned Utility Ratings and Credit Quality: Evaluating a Utility's Ability to Recover Costs and Earn Returns," Moody's Investors Service, June 18, 2011, at p. 7.

⁴⁶ Source: Provided by Gaz Métro in response to data request. This includes the commodity cost and transportation costs, but not storage.

1 As shown on Exhibit JMC-3, Schedule 1, all of the gas distribution companies in the
2 Canadian and U.S. proxy groups that provide the gas commodity to retail customers
3 have PGA mechanisms that allow them to pass through gas supply costs to customers.
4 As such, like Gaz Métro, the operating companies in the Canadian and U.S. proxy
5 groups are not at risk for differences between the projected and actual cost of natural
6 gas. Likewise, Nova Scotia Power (an electric distribution utility) has a fuel cost recovery
7 mechanism that allows it to pass through fuel and purchased power costs to its
8 customers.

9 I also examined the frequency of the allowed PGA mechanisms in order to determine
10 whether certain companies have a better opportunity to recover changes in gas costs in a
11 timely manner. In its risk assessment of the utilities sector, DBRS differentiates its
12 ranking on energy cost recovery, in part, based on how often the utility is allowed to
13 adjust fuel costs in retail rates charged to customers, as well as whether the adjustment is
14 automatic or subject to regulatory review.⁴⁷ As noted above, Gaz Métro is allowed to
15 adjust its rates for changes in gas costs on a monthly basis. Among the Canadian proxy
16 group, Enbridge Gas and Fortis BC Energy both have quarterly PGA clauses, while
17 ATCO Gas is not responsible for the provision of gas supply to customers and Nova
18 Scotia Power has an annual fuel cost recovery clause. My research indicates that
19 distribution utilities in the Canadian proxy group adjust purchased gas (or fuel) costs for
20 85 percent of utility customers quarterly, while 15 percent adjust rates annually.

21 Among the operating companies in the U.S. proxy group, 62 percent of the utility's
22 customers have monthly PGA mechanisms, 23 percent have quarterly adjustments, 15

⁴⁷ Dominion Bond Rating Service, "Assessing Regulatory Risk in the Utility Sector," May 2012, at p. 7.

1 percent have PGA clauses that are updated at least annually, and Atlanta Gas Light does
2 not provide gas supply to retail customers. Since approximately 85 percent of operating
3 companies in both Canada and the U.S. are allowed to adjust for changes in fuel costs on
4 either a monthly or quarterly basis, I conclude that investors would not perceive any
5 material difference between Gaz Métro and the operating companies in the Canadian
6 and U.S proxy groups in terms of the frequency of purchased gas cost adjustments.

7 Furthermore, 15 percent of the operating companies in the Canadian proxy group earn
8 performance incentives when actual gas costs are below a specified benchmark, while 26
9 percent are allowed to retain a percentage of margin from off-system sales. Among the
10 U.S. proxy group, 17 percent of the operating companies earn performance incentives
11 based on actual gas costs, and 33 percent have margin sharing.⁴⁸ Gaz Métro is not
12 allowed to earn any performance incentives when gas costs are below benchmark levels
13 nor is the Company allowed to retain a percentage of margin from off-system. As such,
14 Gaz Métro has less opportunity for higher earnings due to the success of gas supply
15 operations than the companies in the Canadian or U.S. proxy groups.

16 2. Volume/Demand Risk

17 **Q: 41 Please discuss the risk associated with changes in customer demand as**
18 **compared to test year volume.**

19 A: The primary business risk associated with changes in customer demand is that rates are
20 set under the assumption that customers will purchase a certain volume of natural gas
21 during the test year. To the extent that the customer's actual usage is different than

⁴⁸ I would note that these performance incentives are asymmetric; that is, the utilities have an opportunity to earn performance incentives when actual gas costs are below a certain benchmark, but they are not subject to penalties if the actual gas costs are above that specified benchmark.

1 forecasted demand, the utility may be unable to earn its allowed return, especially if a
2 large percentage of its fixed costs are recovered through volumetric charges. There are
3 many sources of risk related to changes in volume, including: (1) weather conditions; (2)
4 economic conditions; (3) energy prices (both gas and electric); and (4) energy efficiency
5 and conservation programs. Among those sources, changes in demand related to
6 weather conditions and declining average use per customer due to conservation and
7 energy efficiency are two of the most important risks that gas distribution utilities face.

8 Several Canadian regulators have approved variance/deferral accounts to allow the utility
9 to recover the difference between forecast and actual demand attributable to weather
10 variations. For example, Gaz Métro's former incentive regulation plan accounted for
11 changes in weather by placing those amounts into a deferral account which earns a
12 return based on the weighted-average cost of capital. The deferral account is included in
13 rate base and amortized over five years.⁴⁹ Under its previous incentive regulation plan,
14 Gaz Métro was protected against "significant fluctuations in deliveries" so that the
15 Company was able to earn its revenue requirement. Specifically, Gaz Métro was allowed
16 to adjust rates to reflect a volume loss arising, for example, from deterioration in the
17 Company's competitive situation. The Performance Incentive Mechanism ("PIM")
18 noted that this was particularly important for Gaz Métro, given the heavy concentration
19 of industrial customers, which makes Gaz Métro more vulnerable than other distributors
20 to fluctuations in the price of oil or natural gas or to downturns in economic activity.⁵⁰
21 However, the PIM also provided that if the revenue requirement was greater than the

⁴⁹ Performance Incentive Mechanism Agreed in Negotiated Settlement Process, R-3599-2006, April 19, 2007, at p. 15.

⁵⁰ Ibid, at p. 45.

1 revenue cap, tolls were based on the revenue requirement, and Gaz Métro was required
2 to refund the difference with future productivity gains or by forfeiting part of its return
3 at the end of the term.

4 Gaz Métro is currently operating under cost-of-service regulation pending consideration
5 of a new incentive regulation plan. My understanding is that the under the proposed
6 new incentive plan Gaz Métro's revenues will be fully decoupled from customer usage,
7 so that there is no effect due to changes in volume. The mechanism under consideration
8 would include a revenue cap per customer and a year-end true up based on the actual
9 number of customers served at year end rather than the average number of customers
10 served during the year or the projected number of customers that was used to calculate
11 the revenue requirement. Under such a scenario, the Company would be exposed to the
12 risk that a declining customer base at year end would cause Gaz Métro to earn less than
13 its actual cost to provide service during the test year, and it would remove any protection
14 the Company previously had against differences between forecasted and actual
15 customers. In my view, depending on how the new plan is calibrated and implemented,
16 this would create the potential for earnings attrition, and would make Gaz Métro more
17 risky than it was under the former PIM.

18 Among the distribution companies in the Canadian proxy group, 43 percent of total
19 customers are served by companies that have weather-related variance or deferral
20 accounts. Specifically, FortisBC Energy has a deferral mechanism to decrease the
21 volatility in rates caused by significant impacts of weather; and ATCO Gas has a weather
22 deferral account rider under which revenues above or below the norm are refunded to or
23 recovered from customers in future periods. While Enbridge Gas has an earnings

1 sharing mechanism that normalizes earnings to exclude the effects of abnormal weather,
2 Enbridge Gas' base rates remain exposed to the effects of abnormal weather; and Nova
3 Scotia Power does not have protection against abnormal weather for its regulated electric
4 operations. None of these weather variance accounts for Canadian companies, however,
5 take into consideration changes in demand due to economic conditions, energy prices, or
6 energy efficiency and conservation programs, although these may be covered under
7 other mechanisms. Among the operating companies in the U.S. proxy group, 63 percent
8 have protection against fluctuations in volume due to abnormal weather conditions.

9 Among operating companies in the Canadian proxy group, two of the four operating
10 companies are protected against changes in volume/demand. Specifically, Enbridge Gas
11 has a Lost Revenue Adjustment Mechanism that accounts for lost revenue due to energy
12 efficiency and conservation programs, and Fortis BC Energy has a deferral account that
13 seeks to stabilize revenues from residential and commercial customers through an
14 account that captures variances in forecasted versus actual customer usage throughout
15 the year. Exhibit JMC-3, Schedule 2, shows that the companies in the Canadian proxy
16 group have volumetric risk protections covering 65 percent of customers.

17 U.S. regulators have addressed volumetric risk in a variety of ways, including (1) revenue
18 decoupling mechanisms, which break the link between volume and fixed cost recovery
19 regardless of the reason for the change in demand, (2) straight fixed variable rate design,
20 which recovers most if not all operating costs through a fixed monthly charge rather
21 than based on customer usage, and (3) weather normalization adjustment clauses, which
22 allow the utility to adjust rates based on differences between actual weather conditions
23 and historical average weather conditions.

1 Among the operating companies in the U.S. proxy group, 90 percent of utilities (based
2 on number of customers) are protected against volumetric risk either through revenue
3 decoupling mechanisms or straight fixed variable rate design, and 67 percent have
4 weather normalization adjustment clauses.

5 During 2013 when Gaz Métro is under cost of service regulation and does not have
6 protection against volumetric risk, I conclude that the Company has higher risk than
7 either the Canadian or U.S. proxy groups on this factor. Assuming that Gaz Métro
8 returns to incentive regulation in 2014, and assuming the new incentive plan includes
9 revenue decoupling, then I conclude that the Company will have slightly more or slightly
10 less protection, depending on how the new plan is implemented and calibrated, against
11 volumetric risk than the Canadian proxy group and equivalent risk protection as the U.S.
12 proxy group.

13 **3. Capital Cost Recovery**

14 **Q: 42 Please explain the risk associated with capital cost recovery.**

15 A: Capital spending is a two-edged sword for utilities. On the one hand, capital spending
16 supports dividend growth and share price appreciation; on the other, it can increase the
17 need for external financing and place pressure on cash flows and credit metrics without
18 ongoing accommodation in rates for system expansion. Capital cost recovery has been
19 identified by credit rating agencies as a significant business and regulatory risk. For
20 example, in discussing the importance of cost recovery provisions to credit quality for
21 utilities, Moody's states:

22 The utilities industry is in the midst of a substantial capital
23 expenditure program, with significant investment planned in all

1 aspects of its business, including generation, transmission, and
2 distribution, as well as for substantial environmental compliance
3 expenditures. Because of the size and complexity of many of these
4 projects, Moody's places a high degree of emphasis on the regulatory
5 certainty for the recovery of such costs, which is critical for the
6 maintenance of utility credit quality. For some of these projects,
7 especially when considering added uncertainty related to the
8 economy and the timing of future laws and regulation related to
9 carbon, it will be viewed as a significant credit positive if utilities are
10 able to obtain regulatory support for recovery in advance. This
11 would serve to limit regulatory risk associated with eventual
12 disallowance or non-recovery of already expended costs.⁵¹
13
14

15 **Q: 43 Please discuss the different ways that utility regulators have reduced the risk**
16 **of capital cost recovery.**

17 A: Utility regulators have reduced the short-term risk of capital cost recovery in several
18 ways, including: (1) pre-approval of capital budgets or major capital construction
19 projects; (2) allowing the utility to earn a cash return on Construction Work in Progress
20 ("CWIP") or an Allowance for Funds Used During Construction ("AFUDC"); and (3)
21 approving cost tracking mechanisms that allow the utility accelerated recovery of capital
22 costs for replacing aging infrastructure.

23 **Q: 44 Please compare Gaz Métro's recovery of capital costs to the companies in the**
24 **Canadian and U.S. proxy groups.**

25 A: The Régie approves Gaz Métro's capital budget on an annual basis, and approves
26 specific projects with an estimated cost in excess of \$1.5 million. Projects within that
27 approved capital budget are included in the Company's forecasted test year and added to
28 rate base for cost recovery once the project is commissioned into service. While pre-

⁵¹ "Cost Recovery Provisions Key to Investor-Owned Utility Ratings and Credit Quality: Evaluating a Utility's Ability to Recover Costs and Earn Returns," Moody's Investors Service, June 18, 2011, at p. 8.

1 approval of construction projects allows Gaz Métro to recover capital costs once the
2 plant is placed in service, it does not allow the Company to earn a cash return on the
3 project during construction. Gaz Métro does, however, place the amount into an
4 interest-bearing deferral account while the project is under construction. Further, in the
5 event that actual costs of completing these capital projects exceed the approved
6 investment amounts, those excess amounts may not be recoverable in distribution rates
7 if they are not prudently incurred.

8 As shown on Exhibit JMC-3, Schedule 3, approximately 30 percent of the operating
9 companies (based on number of customers) in the Canadian proxy group receive pre-
10 approval for specific capital projects, while pre-approval of a specified dollar amount for
11 capital projects is less prevalent among companies in the U.S. proxy group, with only
12 approximately 7 percent having the ability to request Commission pre-approval of
13 construction costs.

14 **Q: 45 Why do equity investors and credit rating agencies prefer utilities that are**
15 **allowed to earn a cash return on CWIP rather than AFUDC?**

16 A: Investors may be concerned that (1) multiple capital projects will place pressure on a
17 company's cash flows and credit metrics during construction, (2) any project delays will
18 further postpone cost recovery, and (3) some portion of costs in excess of any pre-
19 approved amounts may be deemed imprudent. For example, Moody's states:

20 Similarly, the inclusion of CWIP in rate base provides greater
21 regulatory certainty, reduces the chance of rate shock or regulatory
22 disallowance at the end of the construction period, and helps
23 moderate financial pressure on a utility during a capital build cycle.
24 Some of these concepts require a significant departure from the
25 mindset of traditional rate regulation, where costs are typically

1 recovered in rates only after a project is completed and placed into
2 service.⁵²

3 Therefore, from an investment and cash flow perspective, the opportunity to earn a cash
4 return on CWIP is favorable, especially for large capital projects that are not expected to
5 be completed for several years because it (1) provides more immediate cost recovery, (2)
6 reduces pressure on cash flows and credit profiles during construction, and (3) reduces
7 concerns about rate shock. While this regulatory treatment does not change the book
8 earnings of the regulated utility, it does enhance cash flows and improve financial
9 integrity during construction, which reduces uncertainty for investors.

10 Enbridge Gas is the only operating company in the Canadian proxy group that has the
11 possibility to earn a cash return on CWIP, although there is no evidence that Enbridge
12 Gas has requested approval to place CWIP in rate base. By comparison, 8 percent of the
13 operating companies (based on number of customers) in the U.S. proxy group have
14 received approval to place CWIP in rate base.

15 Another important aspect of capital cost recovery for gas distribution utilities is related
16 to the replacement of aging infrastructure. This is especially important because it
17 pertains to accelerated cost recovery for projects related to pipeline safety and integrity
18 issues. In that regard, none of the operating companies in the Canadian proxy group
19 have been allowed to implement cost tracking mechanisms that allow accelerated
20 recovery of aging infrastructure, while 64 percent of the operating companies in the U.S.
21 proxy (based on number of customers) have capital cost trackers for main replacements.

⁵² Ibid, at p. 2.

1 I conclude that Gaz Métro has similar risk mitigation for capital cost recovery as the
2 Canadian proxy group because regulated utilities in Canada file rate cases on a more
3 frequent basis than in the U.S., which indicates that utility companies are able to include
4 capital investments in rate base once they are placed in service and start earning a return
5 on those investments without significant regulatory lag. Further, I conclude that
6 companies in the U.S. proxy group generally have somewhat more risk protection on this
7 factor than Gaz Métro through either approval of CWIP in rate base while the plant is
8 under construction, or implementation of cost tracking mechanisms for accelerated
9 recovery of costs for replacing aging infrastructure, both of which offset the fact that
10 U.S. regulated utilities generally do not file rate cases as frequently as those in Canada.

11 **4. Rate Regulation and Earnings Sharing**

12 **Q: 46 Please describe the risk associated with how the utility recovers its revenue**
13 **requirement.**

14 A: Utilities traditionally recovered their revenue requirement by setting rates based on the
15 allowable expenses and the level of plant investment during the specified test year. In an
16 effort to provide utilities with an incentive to achieve operating efficiencies and cost
17 savings, some regulators approved incentive regulation plans or performance-based
18 regulation plans, many of which allow the utility to retain a percentage of any cost
19 savings achieved as long as the utility continues to meet service quality standards. Those
20 incentive rate plans may, however, create additional risk for the utility. In assessing
21 regulatory risk for the utilities sector, DBRS recently indicated that it views cost-of-
22 service regulation as lower risk than incentive regulation. In addition, DBRS considers
23 the length of an incentive regulation period, and gives a higher score for a shorter

1 period.⁵³ The following table shows how DBRS assigns rankings based on the method
 2 of rate regulation (i.e., cost of service vs. incentive regulation).

3 **Table 2: DBRS Ranking Criteria: Cost of Service vs. Incentive Regulation**⁵⁴

Score	Item	Definition
Outstanding	Cost of Service	<ul style="list-style-type: none"> • COS regime allowing utilities to recover prudently and reasonably incurred operating costs • Capital expenditures are reviewed and approved by the regulator through an annual COS filing • There is a good mechanism for a utility to recover extraordinary operating costs
Excellent	IRM (3 years or shorter)	<ul style="list-style-type: none"> • IRM regime with maximum three years between COS years • Regulator sets a reasonable productivity factor • There is a reasonable mechanism to consider incremental capital expenditures
Very Good	IRM (4-5 year framework)	<ul style="list-style-type: none"> • The IRM period is four to five years • Regulator sets a reasonable productivity factor • There is a reasonable mechanism to consider incremental capital expenditures
Good	IRM (6-10 year framework)	<ul style="list-style-type: none"> • The IRM period is six to ten years • Regulator sets a reasonable productivity factor • There is a reasonable mechanism to consider incremental capital expenditures
Satisfactory	IRM (10+ years)	<ul style="list-style-type: none"> • The IRM period is over ten years • Regulator sets a reasonable productivity factor • There is a reasonable mechanism to consider incremental capital expenditures

4 Gaz Métro has operated under an incentive regulation plan since October 1, 2000. The
 5 Company's most recent PIM was in effect from October 2007 through September 2012.
 6 Gaz Métro is currently in the midst of a proceeding that would establish a new incentive

⁵³ Dominion Bond Rating Service, "Assessing Regulatory Risk in the Utility Sector," May 2012, at p. 8.

⁵⁴ Ibid.

1 regulation plan. Until that new incentive regulation plan is approved by the Régie, Gaz
2 Métro will operate under traditional cost of service regulation. The most recently
3 effective PIM featured elements of traditional cost of service ratemaking, as well as
4 price-cap based and revenue-cap based plans. The plan included an earnings sharing
5 mechanism under which customers received 50 percent of the productivity gains
6 achieved by Gaz Métro, either through lower rates or initiatives to promote energy
7 efficiency. The remaining 50 percent remained in rates so as to increase Gaz Métro's
8 return, to a maximum incentive return of 375 basis points. Inflation was based on the
9 historical rate of consumer prices for Quebec for the twelve months ending July 31 of
10 the preceding year. The X factor was 0.3 percent, which was intended to ensure that the
11 Revenue Cap would generate ongoing efficiencies for the benefit of customers.
12 Exogenous factors which could trigger a rate adjustment included those for (1) the
13 impact of weather on revenues; (2) the impact of interest rates on the cost of capital, (3)
14 the impact of changes in income and capital tax rates on the cost of service, and (4) the
15 impact on revenues of volume changes in excess of a predetermined threshold (e.g.,
16 energy conservation, energy efficiency).⁵⁵

17 Among the operating utilities in the Canadian proxy group, Enbridge Gas currently
18 operates under a five-year incentive regulation plan, and ATCO Gas will begin operating
19 under an incentive regulation plan on January 1, 2013.⁵⁶ The other two Canadian

⁵⁵ Gaz Métro, Performance Incentive Mechanism, Agreed in Negotiated Settlement Process, R-3599-2006, at p. 11-17.

⁵⁶ Enbridge Gas Distribution's current incentive regulation plan expires on December 31, 2012. My understanding is that EGD plans to file another incentive regulation plan with the OEB. From an investor's perspective, it is reasonable to conclude that EGD will continue to operate under some form of incentive regulation in the future, notwithstanding the fact that EGD may be under cost of service regulation in 2013. Similarly, investors now know that ATCO Gas will begin operating under incentive regulation on January 1, 2013. For that reason, I believe it is reasonable and appropriate to categorize both

1 operating companies are under traditional cost-of-service regulation. As such, 30
2 percent of the Canadian proxy group (based on number of customers) is under cost of
3 service regulation, while 70 percent operate under incentive regulation plans. Among the
4 operating companies in the U.S. gas distribution proxy group, 80 percent establish rates
5 under traditional cost-of-service regulation, while 20 percent operate under formula rate
6 plans.

7 As noted above, Gaz Métro's previous incentive regulation plan included an earnings
8 sharing component. Similarly, Enbridge Gas is required to share a percentage of
9 earnings above its authorized return; however, the recently-approved incentive regulation
10 plan for ATCO Gas does not include earnings sharing. As shown on exhibit JMC-3,
11 Schedule 4, 45 percent of the operating companies in the Canadian proxy group and
12 three percent of the operating companies in the U.S. proxy group have an earnings
13 sharing mechanism.

14 Based on this research, and assuming that Gaz Métro returns to an incentive regulation
15 plan in 2014 that is similar to the previous PIM, I conclude that Gaz Métro has similar
16 risk as the companies in the Canadian proxy group, most of which are under incentive
17 regulation, and higher risk than the vast majority of companies in the U.S. proxy group,
18 most of which remain under cost of service regulation without earnings sharing. Again,
19 the new plan would remove any protection the Company previously had against
20 differences between forecasted and actual customers. In my view, depending on how

companies as operating under incentive regulation plans for purposes of this factor. Likewise, Gaz Métro's incentive regulation plan expired on September 30, 2012, and the Company is currently under cost of service regulation for 2013. Gaz Métro, however, has filed a new incentive regulation plan with the Régie, and it is reasonable for investors to expect that Gaz Métro will be operating under incentive regulation in 2014 and beyond.

1 the new plan is calibrated and implemented, this would create the potential for earnings
2 attrition, and would make Gaz Métro more risky than it was under the former PIM.

3 **5. Regulatory Lag**

4 **Q: 47 What is regulatory lag and how does it affect the business risk of natural gas**
5 **distribution companies?**

6 A: Regulatory lag refers to the delay between the time when a utility incurs costs to serve its
7 customers and when it later recovers those costs through rates. Regulatory lag differs by
8 jurisdiction based on the timing of test period data and the duration of the rate case
9 process. For example, absent offsetting growth in revenues or a reduction in other
10 expenses, when a utility makes an infrastructure investment necessary for safe and
11 reliable service and that investment is not reflected in rate base until a subsequent rate
12 case, there is regulatory lag with a real cost in foregone earnings. Regulatory lag results
13 in earnings attrition when a utility's earnings systematically fall below authorized levels
14 which are established based on the "required" cost of capital.

15 **Q: 48 How have you measured the risk associated with regulatory lag for natural**
16 **gas distribution companies?**

17 A: There are a variety of factors that indicate the extent to which a utility is experiencing
18 regulatory lag. Those factors include: (1) the test year convention; (2) the use of interim
19 rates while a rate case is pending; and (3) rate case lag.

20 **a) Test Year Convention**

21 The use of a forecasted test year gives a utility the ability to recover forecasted rather
22 than historical expenses, thereby reducing regulatory lag and earnings attrition. The

1 Régie uses a forecasted test year to set the revenue requirement for Gaz Métro; likewise,
2 all of the operating companies in the Canadian proxy group and 52 percent of those in
3 the U.S. proxy group operate in jurisdictions that use fully or partially forecasted test
4 years, while 48 percent of operating companies in the U.S. proxy group use historical test
5 years adjusted for known and measurable changes.

6 **b) Interim Rates**

7 Interim rates allow a utility to recover higher test year costs while a rate case is pending,
8 subject to refund with interest once final rates are adopted. Some regulatory authorities
9 approve interim rates on a routine basis, while other jurisdictions only approve interim
10 rates when the utility can demonstrate that its financial integrity would be impaired
11 without interim rates. Gaz Métro has not been allowed to implement interim rates in
12 previous rate proceedings. By comparison, as shown on Exhibit JMC-3, Schedule 5, 43
13 percent of the operating companies in the Canadian proxy group and 15 percent of the
14 operating companies in the U.S. proxy group operate in jurisdictions that approve
15 interim rates on a routine basis, while 74 percent of the operating companies in the U.S.
16 proxy group are allowed to implement interim rates to maintain their financial integrity
17 or in a financial emergency.

18 **c) Rate Case Lag**

19 Rate case lag refers to the amount of time between when a rate case is filed and when the
20 decision is issued. Rate case lag is especially important for companies that use a
21 historical test year because it means that by the time new rates become effective, they
22 may not be representative of the utility's allowable expenses. As noted above, Gaz
23 Métro and the companies in the Canadian proxy group use a forecasted test year, so rate

1 case lag is not as critical. For companies in the U.S. proxy group, the average time
2 between filing a rate case and receiving a decision is approximately 8 months, while for
3 the Canadian proxy group, the average rate case lag is just over 10 months.

4 The evidence indicates that Gaz Métro has comparable regulatory treatment with regard
5 to the use of forecasted test years as the operating companies in the Canadian proxy
6 group, and somewhat less risk than the companies in the U.S proxy group, where
7 forecasted test years are less common. With respect to interim rates, Gaz Métro has
8 somewhat less regulatory protection than the average operating company in the
9 Canadian proxy group, and similar risk protection as the companies in the U.S. proxy
10 group, where interim rates are generally granted only when the financial integrity of the
11 utility is at risk.

12 **6. Cost Recovery Mechanisms**

13 **Q: 49 Please explain the risk associated with recovery of costs that tend to fluctuate**
14 **substantially from year to year compared with the amount recovered in rates.**

15 A: Cost recovery mechanisms are one of the most significant factors that determine
16 whether a utility is able to earn its authorized ROE. In particular, I examined several
17 categories of costs that (1) tend to fluctuate substantially from year to year, (2) are
18 significant in magnitude, and (3) are generally beyond the control of utility management.
19 Among those cost categories for regulated utilities, I considered the following: (1)
20 pension expenses; (2) bad debt expense; (3) changes in interest rates; (4) pipeline safety
21 and integrity management costs; (5) energy efficiency and Demand Side Management
22 costs; and (6) environmental compliance costs.

1 **Q: 50 Have regulatory authorities in Canada and the U.S. used the same cost**
2 **recovery mechanisms for these types of costs?**

3 A: No, they have not. When there have been variations between actual costs and test year
4 costs in Canada, regulators have typically addressed those fluctuations through the
5 approval of variance accounts, which are designed to reduce the volatility in earnings and
6 cash flows due to fluctuations in costs and revenues. U.S. regulators have taken a
7 different approach to addressing these cost variations. Specifically, U.S. utility regulators
8 have typically approved tariff riders/surcharges and cost tracking mechanisms to recover
9 costs that tend to fluctuate. The tariff rider/surcharge is a temporary adjustment to the
10 customer bill that raises rates for a limited time by a fixed amount. A cost tracking
11 mechanism is an adjustment clause that allows a utility's rates to fluctuate in response to
12 changes in operating costs or conditions. Regardless of the specific method regulators
13 have chosen to mitigate the risk of cost recovery, the end result is that the vast majority
14 of utility companies in both Canada and the U.S. have recovery mechanisms to protect
15 them against significant fluctuations in costs and events that are beyond the control of
16 utility management.

17 **Q: 51 Please discuss the results of your analysis of cost recovery mechanisms for**
18 **Gaz Métro and the Canadian and U.S. proxy groups.**

19 A: Exhibit JMC-3, Schedule 6, presents the cost recovery mechanisms that are in place at
20 Gaz Métro and the operating companies within the Canadian and U.S. proxy groups for
21 the cost categories that were identified above. The table below summarizes the
22 percentage of operating companies in the Canadian and U.S. proxy group that has some
23 form of cost recovery mechanism for each of these costs.

1

Table 3: Other Cost Recovery

Cost	Gaz Métro	Canadian Proxy Group	U.S. Proxy Group
Pension expenses	No	65%	16%
Bad Debt expenses	Yes	0%	61%
Interest Rate Change	Yes	19%	0%
Pipeline Safety/Integrity	No	70%	31%
Energy Efficiency/DSM	Yes	76%	66%
Environmental Compliance	No	57%	43%

2 Based on this analysis, I conclude that, similar to Gaz Métro, the companies in the
3 Canadian and U.S. proxy groups, on balance, have regulatory protections against specific
4 operating costs that tend to fluctuate significantly from year to year, are material in
5 nature, and are beyond the control of management.

6 **7. Longer Term Risks**

7 **Q: 52 Did you consider any additional longer term risks that differentiate Gaz Métro**
8 **from the companies in the Canadian and U.S. proxy groups?**

9 A: Yes, I considered several additional factors. As recognized in past decisions from the
10 Régie, Gaz Métro faces higher business risk than its Canadian peers due to the
11 concentration of industrial customers and competition from electricity in Quebec.
12 Specifically, the 2009 Gaz Métro decision stated:

13 ...the Régie assesses the enterprise's overall risk to be greater than
14 average, particularly because of the composition of its clientele and
15 the competition from electricity in Quebec. However, in its

1 assessment, it takes into account the greater protection from those
2 risks through deferral accounts.⁵⁷

3 In addition to those risks, Gaz Métro also faces more supply risk as a captive shipper of
4 TransCanada's system. It is my understanding that as new supply basins are being
5 developed across North America, Gaz Métro has been able to diversify its natural gas
6 purchases. However, TransCanada's system remains the only large diameter pipeline
7 supplying Quebec. As other gas distribution companies are shifting their supply
8 strategies, tolls have been increased and could lead to reduced competitiveness for Gaz
9 Métro in the longer term. The fundamental nature of North American gas supply will
10 require regulators to allow utilities to re-examine, renegotiate and recontract their natural
11 gas supply portfolios and transportation agreements.

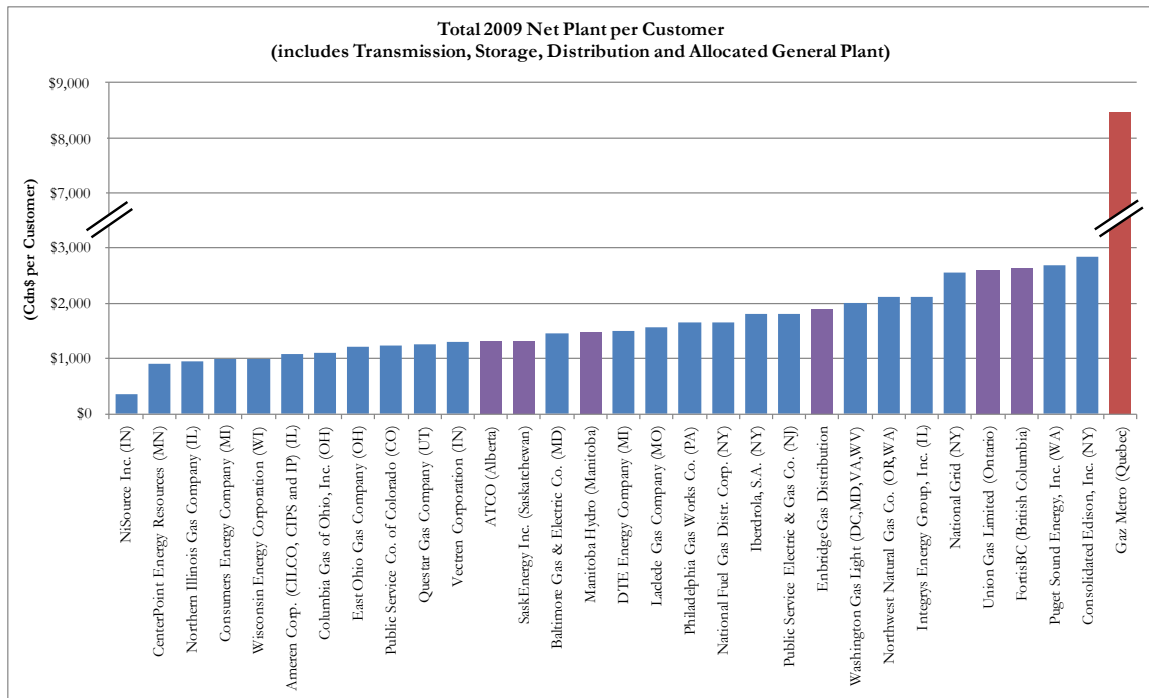
12 Further, the Province of Quebec has been much more active in terms of legislation to
13 reduce greenhouse gas emissions than other provinces and states. The "Fonds vert" was
14 introduced in 2007 to require natural gas distribution companies and oil providers to
15 contribute annually to the environmental fund associated with fossil fuels. In addition,
16 the Government of Quebec is one of the few Canadian provinces or U.S. states that
17 adheres to the standards established by the Western Climate Initiative. While the
18 customer charges resulting from this environmental regulation are still unknown, and
19 natural gas is currently enjoying competitive advantages in all markets, the pressure on
20 tolls due to carbon taxes is increasing Gaz Métro's competitive risk compared to many
21 other gas distribution companies in North America.

⁵⁷ Régie de l'énergie, D-2009-156, Décision, Gaz Métro, (December 7, 2009), at [281].

1 Lastly, Concentric conducted a benchmarking study of natural gas distributors in Canada
 2 and the U.S.⁵⁸, which indicates that Gaz Métro is more risky than other Canadian gas
 3 distributors on several important long-term factors. Specifically, Gaz Métro has the
 4 smallest number of customers of the seven major gas distribution companies in Canada
 5 (for example, Gaz Métro has approximately 10 percent as many customers as Enbridge),
 6 while Gaz Métro’s rate base is not correspondingly smaller. As Chart 1 (below) shows,
 7 Gaz Métro’s average rate base per customer in 2009 of \$8,458 was more than three times
 8 higher than Fortis BC Energy and Union Gas Limited, more than four times higher than
 9 Enbridge Gas Distribution, and more than six times higher than ATCO Gas.

10

Chart 1: Total 2009 Net Plant Per Customer⁵⁹



11

⁵⁸ Benchmarking Study prepared for Enbridge Gas Distribution, Inc., by Concentric Energy Advisors, Inc., January 27, 2012.

⁵⁹ Ibid., at 15.

1 The primary reason for this phenomenon is that Gaz Métro has a much higher
2 concentration of industrial customers than other Canadian gas distributors. As a result,
3 Gaz Métro has a smaller customer base from which to recover its rate base investment,
4 and those industrial customers are more affected by economic conditions and are more
5 likely to find bypass opportunities. This increases the business risk of Gaz Métro relative
6 to the other Canadian gas distribution companies, and is one of the primary reasons the
7 Régie has previously determined that Gaz Métro has higher risk than its Canadian peers.

8 **B. Conclusions on business risk**

9 **Q: 53 Please summarize the overall conclusions with respect to the business risk of**
10 **Gaz Métro relative to the Canadian and U.S. proxy groups.**

11 A: The results of the business risk analysis are presented on Exhibit JMC-3, Schedules 1-6.
12 To briefly summarize the conclusions with regard to the major categories of business
13 risk for Gaz Métro relative to the Canadian and U.S. proxy groups:

14 1) Gas Supply Costs: Gaz Métro has a PGA clause that provides
15 similar risk protection against volatility in cash flows attributable
16 to variations in purchased gas costs as the vast majority of
17 companies in the Canadian and U.S. proxy groups. The vast
18 majority of companies in both the Canadian and U.S proxy
19 groups are allowed to adjust fuel costs at least quarterly.

20 2) Volume/Demand Risk: In 2013 when Gaz Métro is under cost
21 of service regulation and does not have protection against
22 volumetric risk, the Company has higher risk than either the

1 Canadian or U.S. proxy groups. Assuming that Gaz Métro
2 returns to incentive regulation in 2014, and assuming the new
3 incentive regulation plan includes revenue decoupling, the
4 Company will have slightly more or slightly less protection,
5 depending on how the new plan is implemented and calibrated,
6 protection against volumetric risk than the Canadian proxy
7 group, and equivalent risk protection as the U.S. proxy group.

8 3) Capital Cost Recovery: Gaz Métro has similar risk mitigation for
9 capital cost recovery as the Canadian proxy group because
10 regulated utilities in Canada file rate cases on a more frequent
11 basis, which indicates that utility companies are able to include
12 capital investments in rate base once they are placed in service
13 and start earning a return on those investments without
14 significant regulatory lag. The companies in the U.S. proxy group
15 generally have somewhat more risk protection through either
16 approval of CWIP in rate base while the plant is under
17 construction, or implementation of cost tracking mechanisms for
18 accelerated recovery of costs for replacing aging infrastructure,
19 both of which offset the fact the U.S. regulated utilities generally
20 do not file rate cases as frequently as those in Canada.

21 4) Rate Regulation and Earnings Sharing: Assuming that Gaz Métro
22 returns to an incentive regulation plan in 2014 that is similar to
23 the previous PIM, Gaz Métro has similar risk as the companies in

1 the Canadian proxy group, most of which are under incentive
2 regulation, and higher risk than the vast majority of companies in
3 the U.S. proxy group, most of which remain under cost of service
4 regulation without earnings sharing. However, depending on
5 how the new plan is implemented and calibrated it could make
6 Gaz Métro more risky than it was under the former PIM.

7 5) Regulatory Lag: Gaz Métro has comparable regulatory treatment
8 with regard to the use of forecasted test years as the operating
9 companies in the Canadian proxy group, and somewhat less risk
10 than the companies in the U.S proxy group, where forecasted test
11 years are less common. With respect to interim rates, Gaz Métro
12 has somewhat less regulatory protection than the average
13 operating company in the Canadian proxy group, and similar risk
14 protection as the companies in the U.S. proxy group, where
15 interim rates are generally granted only when the financial
16 integrity of the utility is at risk.

17 6) Other Cost Recovery: Like Gaz Métro, companies in the
18 Canadian and U.S. proxy group have mechanisms to recover
19 specific categories of costs that fluctuate significantly from year
20 to year and are material in nature.

21 7) Longer Term Risks: Gaz Métro has higher long-term business
22 risks than the Canadian proxy group, especially with respect to
23 customer concentration, competitiveness of natural gas prices

1 with electricity prices in Quebec, the small number of customers
2 served by Gaz Métro, the high average rate base per customer,
3 the risk associated with recovery of capital investment over the
4 long-term life of the assets, the risk of being a captive shipper on
5 TransCanada's system, and the risk of regulation to reduce
6 greenhouse gas emissions in Quebec.

7 Based on my risk analysis, I conclude that Gaz Métro and the operating companies in
8 the Canadian proxy group generally receive comparable protection against business risks
9 which are important to equity investors and credit rating agencies over the near term.
10 There are several important ways, however, in which Gaz Métro's longer-term business
11 risk is higher than the Canadian proxy group. Specifically, the percentage of volume
12 attributable to industrial customers is substantially higher for Gaz Métro, which suggests
13 that Gaz Métro is more susceptible to risks associated with customer bypass and demand
14 destruction, as well as more vulnerable to weak economic conditions. Further, the price
15 of electricity in Quebec is very competitive with natural gas, which limits Gaz Métro's
16 ability to gain market penetration among residential customers, especially for heating
17 needs. In addition, Gaz Métro has a relatively small customer base and a high rate base
18 per customer, which means that Gaz Métro has higher risk of not recovering its
19 substantial rate base investment than most other gas distribution companies in Canada.
20 Finally, the government of Quebec has been more aggressive in pursuing carbon
21 regulation than most other provinces, and the resulting increase in the price for natural
22 gas could affect the competitiveness of that fuel source as compared to electricity. On
23 most other factors (e.g., test year convention, pre-approval of construction costs,

1 incentive regulation rather than cost of service), Gaz Métro has similar business risk as
2 the operating companies in the Canadian proxy group.

3 With regard to the operating companies in the U.S. proxy group, on balance, there are
4 no fundamental differences in business risk between Gaz Métro and the U.S. proxy
5 group that would render comparisons inappropriate. As discussed above, Gaz Métro
6 has higher risk than the U.S. proxy group on several factors (e.g., capital cost recovery,
7 incentive regulation and earnings sharing,) and lower risk than the U.S. proxy group on
8 several factors (e.g., use of forecasted test year, cost recovery for major expenses that
9 tend to fluctuate from year to year), and similar regulatory treatment as the U.S. proxy
10 group on important factors such as gas supply costs and volume/demand risk. In
11 summary, there are no significant differences in business risk between Gaz Métro and
12 the operating companies in the U.S. proxy group in the near term, but there are several
13 important ways in which Gaz Métro's longer-term business risk is higher than the U.S.
14 proxy group.

15 From the perspective of establishing the allowed ROE for Gaz Métro, my view is that
16 the U.S. proxy group (at the holding company level) is more comparable to Gaz Métro
17 than the Canadian proxy group because it is comprised of companies that derive the
18 majority of their operating income from and dedicate the majority of their assets to
19 natural gas distribution service. Moreover, as discussed earlier, there are very few
20 potential proxy companies in Canada, which limits the ability to select companies that
21 are comparable to the gas distribution operations of Gaz Métro. For that reason, I
22 believe it is reasonable and appropriate to rely primarily on the results for the U.S. proxy

1 group and to use the Canadian proxy group to corroborate the reasonableness of the
2 U.S. results.

3 **C. Financial Risk of Gaz Métro**

4 **Q: 54 Please define financial risk.**

5 A: Financial risk exists to the extent a company incurs fixed obligations in financing its
6 operations. These fixed obligations increase the level of income which must be
7 generated to cover interest payments before common stockholders receive any return,
8 and they are considered by equity investors in addition to business and regulatory risks.
9 Fixed financial obligations also reduce a company's financial flexibility and its ability to
10 respond to adverse economic circumstances and capital market conditions, such as those
11 during the recent credit crisis and financial market dislocation of 2008 and 2009.

12 **Q: 55 Please compare the financial risk of Canadian and U.S. utilities generally.**

13 A: In general, regulators in Canada have tended to approve lower deemed equity ratios for
14 regulated utilities than in the U.S. In my view, this practice has evolved for two principal
15 reasons: (1) there is a history of government ownership of utilities in Canada, and
16 similar to municipal and state-owned utilities in the U.S., these utilities enjoy explicit or
17 implicit government support, enabling higher debt ratios; and (2) Canadian regulators
18 deem utility debt ratios with a focus on the minimum requirements for investment grade
19 credit standards. Regulators in the U.S. more typically assess the reasonableness of
20 capital structure based on a combination of credit metrics and reference to the proxy
21 group range to test comparability. Regulated utilities in Canada generally have higher

1 financial leverage than those in the U.S., and therefore more financial risk on a stand-
2 alone basis.

3 **Q: 56 What is Gaz Métro's deemed capital structure?**

4 A: The Company has historically been afforded a deemed common equity ratio of 38.50
5 percent. My understanding is that Gaz Métro is proposing that the capital structure
6 remain unchanged in this proceeding at 38.50 percent common equity, 7.50 percent
7 preferred equity and 54.00 percent long-term debt.⁶⁰

8 **Q: 57 Please compare the financial risk of Gaz Métro to the companies in the**
9 **Canadian and U.S. proxy groups.**

10 A: As shown in Table 4 below, the average deemed equity ratio of the Canadian companies
11 included in my risk analysis is 38.50 percent, with a range from 36.00 percent to 40.00
12 percent. Gaz Métro's deemed equity ratio of 38.50 percent is the same as the average
13 deemed equity ratio for the principal regulated operating companies in the Canadian
14 utility proxy group, which means that Gaz Métro's higher risk is not being reflected in
15 the common equity ratio.

⁶⁰ Source: Provided by the Company.

1

Table 4: Canadian Proxy Group Deemed Common Equity Ratio

Company	Common Equity Ratio
ATCO Gas	39.00%
Nova Scotia Power Inc.	37.50%
Enbridge Gas Distribution.	36.00%
Fortis BC Energy	40.00%
TransCanada Pipelines	40.00%
Mean	38.50%

2

3 **Q: 58 How does Gaz Métro's capital structure compare to the average capital**
4 **structure of the U.S. gas distribution proxy group?**

5 A: The most notable risk difference between Gaz Métro and the operating utilities in the
6 U.S. proxy group is the percentage of debt in the capital structure. As shown in Table 5
7 below (also see Exhibit JMC-4), the U.S. gas distribution proxy group average common
8 equity ratio is 50.83 percent and the median is 48.64 percent, based on the capital
9 structures of the operating companies contained within the U.S. gas distribution proxy
10 group for the past four quarters through September 30, 2012. The average common
11 equity ratio of the U.S. natural gas distribution proxy group is 12.31 percent higher than
12 Gaz Métro's current and proposed equity ratio of 38.50 percent, while the median equity
13 ratio is 10.14 percent higher for the U.S. proxy group.

1
2

**Table 5: U.S. Gas Distribution Proxy Group
Average Common Equity Ratio**

Company	Ticker	Common Equity Ratio
AGL Resources	GAS	42.75%
Atmos Energy	ATO	48.49%
Laclede Group	LG	60.00%
New Jersey Resources	NJR	53.18%
Northwest Nat. Gas	NWN	48.05%
Piedmont Natural Gas	PNY	48.64%
South Jersey Industries	SJI	44.71%
Southwest Gas	SWX	49.70%
WGL Holdings	WGL	61.95%
Mean		50.83%
Median		48.64%

3

4 **Q: 59 Why is the common equity ratio important for evaluating financial risk?**

5 A: The common equity ratio is most important factor for conducting analyses of common
6 equity risk. If there is no preferred equity in the capital structure – or deemed to be in
7 the capital structure – it generally will not matter whether the debt ratio or the common
8 equity ratio is used in the risk analysis. However, the introduction of preferred stock,
9 with rights that are between those of debt and common equity holders, changes the
10 analysis. Because both preferred equity and debt have higher priority claims to the
11 earnings and assets of a company, the financial risk to common equity holders is a
12 function of both the debt ratio and the preferred equity ratio. If one uses only the debt
13 ratio to analyze common equity risks, the result understates those risks.

1 **Q: 60 How does the capital structure affect the cost of equity?**

2 A: The capital structure relates to a Company's financial risk, which represents the risk that
3 a company may not have adequate cash flows to meet its financial obligations, and is a
4 function of the percentage of debt (or financial leverage) in the capital structure. In that
5 regard, as the percentage of debt and preferred equity in the capital structure increases,
6 so do the fixed obligations for the repayment of that debt. Consequently, as the degree
7 of financial leverage increases, the risk of financial distress for common equity holders
8 (*i.e.*, financial risk) also increases.⁶¹ Since the capital structure can affect the subject
9 company's overall level of risk, it is an important consideration in establishing a fair
10 return.

11 **Q: 61 How does Gaz Métro's deemed capital structure impact its ability to raise**
12 **capital on reasonable terms?**

13 A: While the Canadian regulators' approach to capital structure may seek to reduce the
14 weighted-average cost of capital (due to more debt in the capital structure), it also places
15 downward pressure on credit metrics and could make it more difficult for regulated
16 utilities to raise additional debt capital on reasonable terms, especially when economic
17 and financial market conditions become constrained. This could potentially raise the
18 cost of debt, which ultimately flows through to rate payers in the form of higher rates,
19 and limit the financial flexibility of the utility. Further, if more debt is deemed than that
20 of comparable risk utilities, the cost of equity must increase to compensate for that
21 additional risk.

⁶¹ See Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at pp. 45-46.

1 **Q: 62 Other than the percentage of financial leverage in the capital structure, what**
2 **other ways do investors use to measure financial risk?**

3 A: Financial risk may also be measured through other credit metrics, such as the ratio of
4 Funds from Operations (“FFO”) to debt, as well as interest coverage ratios that compare
5 Earnings Before Interest and Taxes (“EBIT”) and FFO to interest payments on long-
6 term debt.

7 **Q: 63 How do Gaz Métro’s credit metrics in 2011 compare to the companies in the**
8 **Canadian and U.S. proxy groups?**

9 A: As shown on Exhibit JMC-5, the credit metrics for Gaz Métro in 2011 were similar to
10 the companies in the Canadian proxy group and much weaker than the companies in the
11 U.S. proxy group. Specifically, Gaz Métro had weaker interest coverage ratios, a weaker
12 cash flow to debt ratio, and higher debt to EBITDA ratios than the averages for U.S.
13 proxy group.

14 **Q: 64 What is your conclusion with respect to the financial risk of Gaz Métro**
15 **relative to the Canadian and U.S. proxy group companies?**

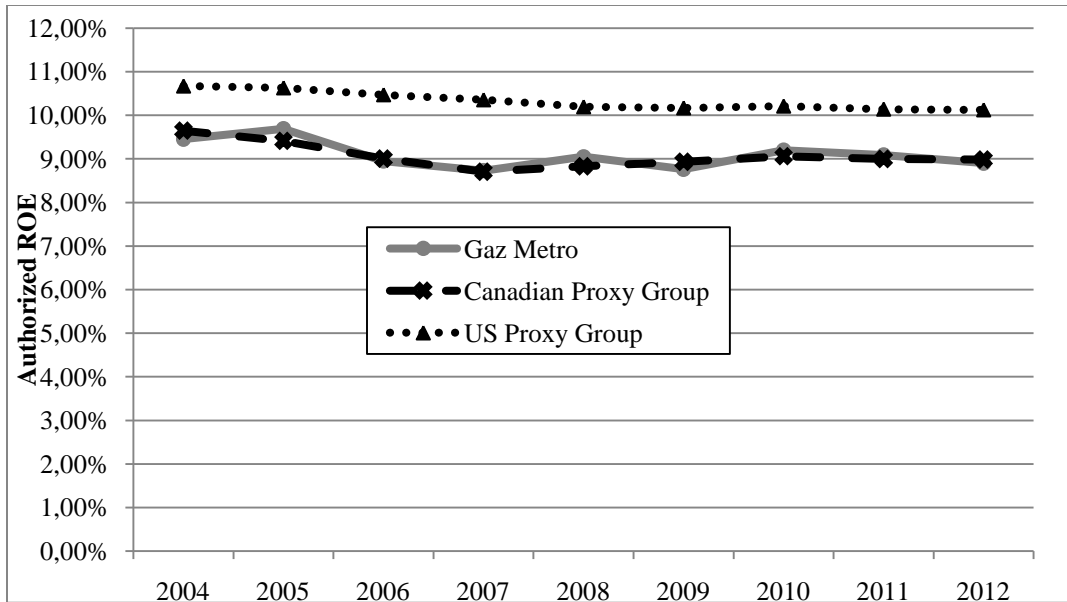
16 A: My conclusion is that Gaz Métro has similar financial risk to the companies in the
17 Canadian proxy group and substantially higher financial risk than the companies in the
18 U.S. gas distribution proxy group.

19 **D. Authorized and Earned Returns of the Utilities in the U.S. Proxy Group**

20 **Q: 65 Have you reviewed the authorized returns for Gaz Métro and the other**
21 **Canadian and U.S. utilities?**

1 A: Yes. As shown on Chart 2 (below), the authorized returns for Gaz Métro from 2004-
2 2012 have been very similar to those for the companies in the Canadian proxy group and
3 lower than those for the companies in the U.S. gas distribution proxy group.

4 **Chart 2: Authorized ROEs – 2004-2012⁶²**



5
6 According to Regulatory Research Associates, the average authorized ROE for gas
7 distribution utilities in the U.S. between January 2004 and November 15, 2012 was 10.25
8 percent. By contrast, Gaz Métro's average allowed ROE of 9.09 percent from 2004-
9 2012 was 116 basis points lower than the average U.S. gas distribution utility.

10 **Q: 66 Did you also compare the earned and allowed returns for the U.S. proxy**
11 **group?**

12 A: Yes, I did. As discussed earlier in my testimony, the Régie has stated in prior decisions
13 that earned returns on equity are an important indicator concerning whether the

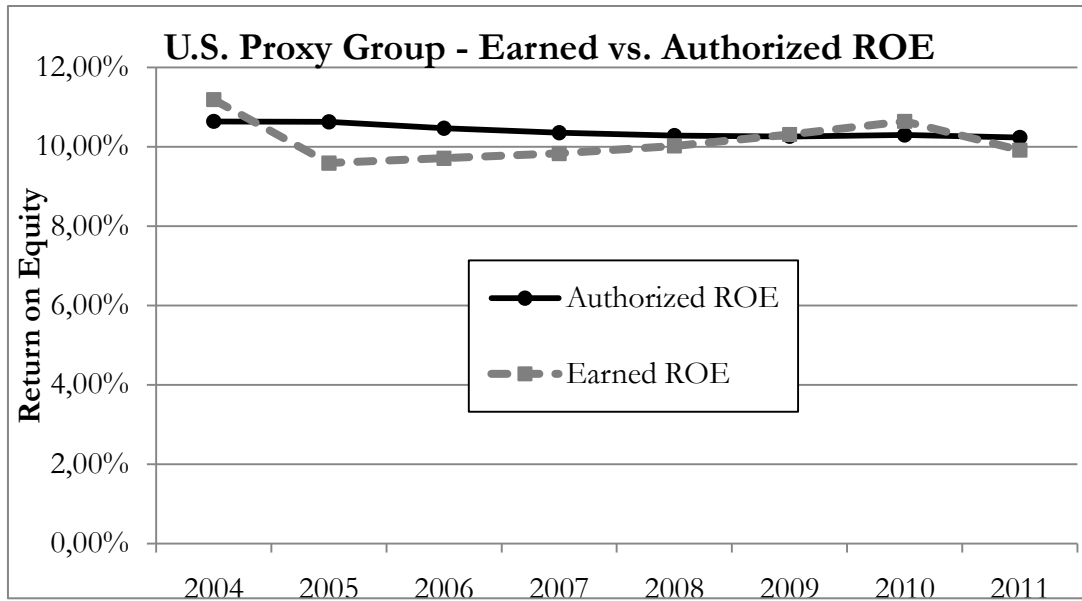
⁶² The chart includes authorized ROEs for the following operating companies within the Canadian proxy group: ATCO Gas; Nova Scotia Power, Inc.; Enbridge Gas Distribution Inc.; and FortisBC Energy Inc.

1 operating utility has sufficient regulatory protection against various business risks. While
2 this comparison is useful in evaluating the short-term risk protection of operating
3 companies in the U.S. proxy groups, it is less helpful in terms of assessing the longer-
4 term risks of those entities, especially with respect to recovery of their investment in rate
5 base.

6 **Q: 67 Please summarize the results of that analysis.**

7 A: I compared the allowed ROE and the earned ROE for the U.S. proxy group at the
8 operating company level from 2004 through 2011. The average earned ROE for the
9 U.S. proxy group (at the operating company level) from 2004-2011 was slightly lower
10 than the average authorized ROE over that same period (i.e., 10.40 percent authorized
11 and 10.15 percent earned). Chart 3 (below) presents the average earned and authorized
12 ROEs for the U.S. proxy group in each year from 2004-2011.

1 **Chart 3: Average Earned vs. Authorized ROE – U.S. Proxy Group – 2004-2011**⁶³



2

3 This evidence demonstrates that, on average, the operating companies within the U.S.
4 proxy group for which data are available have consistently earned returns on equity that
5 are very close to their allowed returns since 2004, indicating that those companies
6 operate in regulatory jurisdictions that provide a reasonable opportunity to earn their
7 allowed returns. The fact that the U.S. gas distribution proxy group has not fully earned
8 its authorized return from 2004-2011 is attributable primarily to the results of Southwest
9 Gas Corporation, especially for the period from 2004-2009. Southwest Gas has recently
10 received approval for revenue decoupling mechanisms in Nevada and Arizona, and the
11 company's earned return has improved in 2010 and 2011 as the credit supportiveness of
12 those two jurisdictions has been enhanced from an investor's perspective.

⁶³ Certain operating companies (for example, Laclede Gas) were not included in this analysis because they did not have a specified ROE in certain years as the result of a negotiated settlement agreement. Other operating companies (for example, Atmos Energy) were not included because they do not report common equity for each jurisdiction since they are organized in a divisional structure rather than as a holding company.

1 **Q: 68 What is your conclusion with regard to the use of U.S. data based on your**
2 **analysis of earned and allowed returns for the U.S. proxy group?**

3 A: My analysis demonstrates that the gas distribution companies in the U.S. proxy group
4 have generally been able to earn their authorized returns from 2004-2011. This suggests
5 that these companies generally operate in regulatory environments that afford timely cost
6 recovery and a fair opportunity to earn their allowed returns. As such, I conclude that it
7 is reasonable and appropriate to consider the U.S. proxy group as a reliable benchmark
8 for the market-based cost of equity for Gaz Métro.

9 **E. Risk Analysis Conclusions**

10 **Q: 69 Please summarize your conclusions and recommendations on the**
11 **comparability of Gaz Métro and the Canadian and U.S. proxy groups.**

12 A: Based on the results of the risk analysis described in my testimony, I recommend that
13 the Régie:

14 ➤ Find that the economic conditions and business environments in
15 Canada and the U.S. are similar enough that investors would not
16 require materially different returns on equity from companies that
17 were otherwise comparable;

18 ➤ Find that, in the short term, Gaz Métro has comparable business risk
19 as the companies in the Canadian and U.S. proxy groups, and greater
20 financial risk than the companies in the U.S. gas distribution proxy
21 group. In the long-term, however, Gaz Métro has higher business
22 risk than the companies in the Canadian proxy group due to its

1 reliance on industrial customers, competition with electricity prices in
2 Quebec, its small customer base and high rate base per customer
3 (which makes it more uncertain that the Company will be able to
4 recover its capital investment over the long-term), and the increase in
5 natural gas prices as a result of the strict regulations on carbon
6 emissions in Quebec. Likewise, Gaz Métro has higher long-term
7 business risk than the U.S. proxy group on several of these same
8 factors.

9 ➤ Find that the earned returns of the U.S. gas distribution proxy group
10 at the operating company level are very similar to the allowed returns
11 for those companies, which suggests that the companies have
12 adequate regulatory protections in place to recover costs in a timely
13 manner, which generally allows them to earn their authorized ROE in
14 most years;

15 ➤ Accept the U.S. gas distribution proxy group to estimate the cost of
16 equity for Gaz Métro in this proceeding with the Canadian proxy
17 group used to corroborate the reasonableness of the U.S. results.

18 **VIII. THE COST OF EQUITY METHODS AND THEIR RELIABILITY**

19 **Q: 70 Please briefly discuss the ROE in the context of the regulated rate of return.**

20 A: Regulated utilities primarily use common stock, preferred stock and long-term debt to
21 finance their permanent property, plant, and equipment. The overall rate of return

1 (“ROR”) for a regulated utility is based on its weighted average cost of capital, in which
2 the cost rates of the individual sources of capital are weighted by their percentage of the
3 total capitalization of the company. While the costs of debt and preferred stock can be
4 directly observed, the cost of equity is market-based and, therefore, must be estimated
5 based on observable market information.

6 **Q: 71 How is the required ROE determined?**

7 A: The required ROE is estimated by using one or more analytical techniques that rely on
8 market-based data to quantify investor expectations regarding required equity returns,
9 adjusted for certain incremental costs and risks. Quantitative models produce a range of
10 reasonable results from which the market-required ROE is selected. That selection must
11 be based on a comprehensive review of relevant data and information, and does not
12 necessarily lend itself to a strict mathematical solution. As a general proposition, the key
13 consideration in determining the cost of equity is to ensure that the methodologies
14 employed reasonably reflect investors’ views of the financial markets in general, and the
15 subject company (in the context of the proxy group) in particular.

16 **Q: 72 What methods were used to determine Gaz Métro’s cost of equity?**

17 A: I have considered the results of the CAPM and the DCF method in developing an ROE
18 recommendation for Gaz Métro within the context of the risk analysis discussed earlier
19 in my testimony.

20 **Q: 73 Why do you believe it is important to use more than one analytical approach?**

21 A: When faced with the task of estimating the cost of equity, analysts are inclined to gather
22 and evaluate as much relevant data (both quantitative and qualitative) as can be

1 reasonably analyzed. For that reason, Concentric employs multiple approaches to
2 estimate the cost of equity used in performing valuation analyses in the context of our
3 financial advisory and transaction practices. Furthermore, analysts and academics
4 understand that ROE models are tools to be used in the ROE estimation process, and
5 that strict adherence to any single approach, or the specific results of any single
6 approach, can lead to flawed or irrelevant conclusions. That position is consistent with
7 the *Hope* finding that it is the analytical result, as opposed to the methodology, that is
8 controlling in arriving at ROE determinations. The Régie has cited the *Hope* finding
9 in recent decisions, as follows:

10 [194] Finally, as stated in the *Hope* decision, “Under the statutory
11 standard of “just and reasonable,” it is the result reached, not the
12 method employed, which is controlling.” In this regard, the US
13 courts have allowed regulatory agencies wide latitude and discretion
14 in determining the best method for fixing a reasonable return on the
15 rate base.

16 [195] The fact that the automatic adjustment formula or any other
17 approach suggested by the experts for the parties before the Régie
18 may or may not be challenged is not a decisive factor; it is the result
19 which is conclusive, as the US Supreme Court stated in *Hope*: “it is
20 the result reached, not the method employed, which is controlling....It
21 is not theory, but the impact of the rate order, which counts....The
22 fact that the method employed to reach that result may contain
23 infirmities is not then important”. The Régie considers that its duty in
24 this respect is to determine a reasonable rate of return and that the
25 method it uses is a matter of discretion.⁶⁴

26 Therefore, I have considered the results of the CAPM and DCF model, with inputs from
27 reliable sources.

28 A. Capital Asset Pricing Model

⁶⁴ See, for example, Régie de l’Energie du Québec, Decision in D-2009-156, para. [194-195], English translation.

1 **1. CAPM Theory**

2 **Q: 74 Please describe the general form of the CAPM.**

3 A: The CAPM is a risk premium approach that estimates the cost of equity for a given
4 security as a function of a risk-free return plus a risk premium (to compensate investors
5 for the non-diversifiable or “systematic” risk of that security). The CAPM is based on a
6 theoretically-derived relationship between a security’s required return and the systematic
7 risk of that security. The theory of the CAPM has been subject to frequent empirical
8 research and testing and has been relied upon in setting the required cost of equity for
9 regulated companies throughout North America. Therefore, in theory, the CAPM is an
10 appropriate model to determine the required return. As shown in Equation [1], the
11 CAPM is defined by four components, each of which must theoretically be a forward-
12 looking estimate:

13 [1] $K_e = r_f + \beta(r_m - r_f)$

14 where:

- 15 K_e = the required ROE for a given security;
- 16 β = Beta of an individual security;
- 17 r_f = the risk-free rate of return; and
- 18 r_m = the required return for the market as a whole.

19 In this specification, the term $(r_m - r_f)$ represents the Market Risk Premium (“MRP”).

20 According to the theory underlying the CAPM, since unsystematic risk can be diversified
21 away, investors should be concerned only with systematic or non-diversifiable risk.

22 Non-diversifiable risk is measured by Beta, which is defined as:

23
$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)}$$

 [2]

1 where:

2 r_e = the rate of return for the individual security or portfolio.
3

4 The variance of the market return, noted in Equation [2], is a measure of the uncertainty
5 of the general market, and the covariance between the return on a specific security and
6 the market reflects the extent to which the return on that security will respond to a given
7 change in the market return. Thus, Beta represents the risk of the security relative to the
8 market.

9 **2. CAPM Analysis**

10 **Q: 75 What assumptions are necessary to calculate the CAPM?**

11 A: In order to calculate the CAPM, one must make assumptions about the risk-free rate of
12 return, the market risk premium and beta. Since the CAPM is forward looking, it is
13 appropriate to use forward-looking assumptions for the variables, if possible.

14 **Q: 76 Do you have concerns with the application of the CAPM under current
15 market conditions?**

16 A: Yes, I do. To the extent the inputs to the CAPM do not reflect investors' long-term
17 expectations for the risk-free rate, the beta coefficient, or the market risk premium, the
18 results of the CAPM may not be reliable. In the current market environment, the CAPM
19 is not producing reliable results because those three inputs are affected by current
20 financial market conditions and monetary policy. Consequently, it is not reasonable to
21 place substantial weight on the CAPM results under current market conditions, without
22 making certain reasonable adjustments.

1 linear regression of the change in stock price vs. the change in a general market index.
2 Beta is the slope of the regression line. High betas (greater than 1.0) indicate greater
3 volatility compared to the market, and therefore relatively greater risk. Conversely, low
4 betas (lower than 1.0) indicate lower volatility compared to the market, and therefore
5 relatively lower risk.

6 **Q: 79 What measures of the Beta coefficient did you use in your CAPM model?**

7 A: I examined several methods of measuring the Beta coefficient for both the Canadian
8 proxy group and the U.S. gas distribution proxy group companies and on estimates from
9 both Value Line and Bloomberg. According to Value Line, the reported historical beta
10 for each company is based on five years of weekly stock returns and uses the New York
11 Stock Exchange as the market index.⁶⁵ The results have been rounded to the nearest five
12 hundredths, and no information is reported regarding the statistical significance of the
13 underlying regression. Bloomberg, on the other hand, produces beta estimates based on
14 parameters entered by the user. Similarly, I compute those betas based on five years of
15 weekly stock returns and use the S&P 500 or the TSX as the market index. Bloomberg
16 results are rounded to the nearest thousandth and include additional information
17 regarding the statistical significance of the underlying regression. It is interesting to note
18 that both Value Line and Bloomberg betas are adjusted to compensate for the tendency
19 of beta to revert towards the market over time. As I discuss later in this section, in order
20 to appropriately estimate the cost of equity using the CAPM formula, it is necessary to

⁶⁵ http://www.valueline.com/sup_glossb.html

1 adjust raw betas to a common point of convergence. I used the adjusted betas reported
2 by both Value Line and Bloomberg.⁶⁶

3 As a further measure of proxy company risk, betas that revert to the industry average
4 mean beta were used to estimate both proxy groups' average beta coefficients. Those
5 estimates rely on raw beta estimates reported by Bloomberg over a five year holding
6 period, using weekly returns, and adjust individual company raw beta coefficients toward
7 the industry mean beta over the same time period based on a two-thirds to one-third
8 weighting, respectively. Finally, I examined the straight industry average mean beta for a
9 third data point.⁶⁷

10 The relevant market indices and industry averages differed according to whether a
11 company was included in the Canadian proxy group or the U.S. gas distribution proxy
12 group. In summary, after examining the following betas: 1) market-adjusted Betas; 2)
13 industry-adjusted Betas; and 3) industry index Beta, I determined that the most
14 reasonable beta for Gaz Métro's CAPM is 0.65 which is the average of the market-
15 adjusted Betas and the industry-adjusted betas for the U.S. gas distribution proxy group.

16 In the Régie's most recent Gaz Métro Decision, it determined the benchmark utility beta
17 of 0.50 to 0.60. Comparing the beta values relied upon by the Régie in past cases to
18 those relied upon by other regulators throughout Canada, the Régie is on the low end of
19 the spectrum. For instance, the BCUC relied on the beta value range of 0.60 to 0.66,⁶⁸

⁶⁶ Value Line adjusted beta = $0.371 + 0.635 * (\text{raw beta})$. Source: Ibbotson Associates, *2012 Yearbook, Valuation Edition*, p. 78; Bloomberg adjusted beta = $0.33 + 0.67 * (\text{raw beta})$. Source: Bloomberg output.

⁶⁷ The Industry Index Beta is from the Bloomberg Professional average of five years of weekly betas for S&P utilities index.

⁶⁸ Decision G-158-09: In the Matter of Terasen Gas Inc, Return on Equity and Capital Structure, British Columbia Utilities Commission, December 16, 2009, at 45 at p. 60.

1 the NFLD relied on a beta of 0.60⁶⁹ and the AUC relied on a beta range of 0.50 to 0.65.⁷⁰
2 Given the relevant risk of Gaz Métro, the upper end of those betas is appropriate.

3 **Q: 80 Why is it necessary to adjust raw betas?**

4 A: There are two primary reasons to adjust raw betas. First, there have been numerous
5 empirical studies providing evidence that an individual company beta is more likely than
6 not to move towards the market average of 1.00 over time. Second, adjusting beta
7 serves a statistical purpose. In the recent⁷¹ past the Régie has not accepted that utility
8 betas move toward the market average of 1.00 but, rather toward an industry mean of
9 0.50 to 0.60.⁷² Then, as discussed above, the Régie adjusts the CAPM determination for
10 a risk adjustment of 0.25 percent to 0.35 percent because it recognizes that an industry
11 mean of 0.50 to 0.60 is far too low. Also, as noted by the Régie in a past Decision:

12 Even though it is a determining factor in the application of the
13 CAPM, it remains difficult to objectively infer the value of the beta
14 based on the market data for the enterprises retained in the samples.⁷³

15 Because betas are statistically estimated and have associated error terms, betas that are
16 greater than 1.00 tend to have positive estimated errors and thus tend to overestimate
17 future returns. Betas that are below the market average of 1.00 tend to have negative
18 error terms and underestimate future returns. Consequently, it is necessary to adjust
19 forecasted betas toward 1.00 in an effort to improve forecasts.⁷⁴ Because current stock

⁶⁹ Reason for Decision Order No. P.U.43 (2009), Newfoundland and Labrador Board of Commissioners of Public Utilities, at p. 20.

⁷⁰ Decision No. 2011-474, Alberta Public Utilities Commission, 2011 Generic Cost of Capital, December 8, 2011, at p. 14.

⁷¹ See Decision D-96-31 at p. 68 where the Régie agreed with the use of adjusted betas.

⁷² Decision 2010-147, Régie De L'Energie, November 26, 2010, at p. 11.

⁷³ Decision-2007-116, Régie De L'Energie, Application to modify the tariffs of Gaz Métro Limited Partnership effective October 1, 2007, October 15, 2007, at p. 6.

⁷⁴ Roger A. Morin, *New Regulatory Finance*, at p. 74.

1 prices reflect expected risk, one must use an expected beta (adjusted beta) to
2 appropriately reflect investors' expectations. A raw beta reflects only where the stock
3 price has been relative to the market historically and is an inferior proxy for the expected
4 returns when compared to the adjusted beta.

5 **Q: 81 What empirical studies can you cite as evidence and support that company**
6 **betas do regress towards the market average of 1.00?**

7 A: There have been several studies to support the reversion of beta towards the market
8 mean.⁷⁵ In 1971, Blume examined all common stocks listed on the NYSE, and found a
9 tendency for a regression of betas towards 1.00. He concluded that:

10 ...there is obviously some tendency for the estimated values of the
11 risk parameter to change gradually over time. This tendency is most
12 pronounced in the lowest risk portfolios, for which the estimated risk
13 in the second period is invariably higher than that estimated in the
14 first period. There is some tendency for the high risk portfolios to
15 have lower estimated risk coefficients in the second period than in
16 those estimated in the first. Therefore, the estimated values of the
17 risk coefficients in one period are biased assessments of the future
18 values, and furthermore the values of the risk coefficients as
19 measured by the estimates of β_i tend to regress towards the means
20 with this tendency stronger for the lower risk portfolios than the
21 higher risk portfolios.⁷⁶ (emphasis added)

22 In 1975, Blume revisited the topic, measuring the statistical significance of the regression
23 tendency. He concluded:

24 A comparison of the portfolio betas in the grouping period, even
25 after adjusting for the order bias, to the corresponding betas in the
26 immediately subsequent period discloses a definite regression
27 tendency. This regression tendency is statistically significant at the
28 five percent level for each of the last three grouping periods, 1940-47,
29 1947-54, 1954-61. Thus, this evidence strongly suggests that there is

⁷⁵ Ibid.

⁷⁶ Marshall E. Blume, *The Journal of Finance*, Vol. 26, No. 1. (Mar., 1971), at p. 7-8.

1 a substantial tendency for the underlying values of beta to regress
2 towards the mean over time.⁷⁷ (emphasis added)

3 Therefore, it is appropriate and necessary to adjust raw betas because in the current
4 market environment, the raw betas used are far too low to be relevant to the calculation
5 of the market-required cost of equity.

6 **c) Market Risk Premium**

7 **Q: 82 How have you computed the Market Risk Premia?**

8 A: I examined two estimates of the MRP, comprised of a historical (ex-post) estimate and a
9 forward-looking (ex-ante) estimate. To develop those estimates, I first relied upon the
10 long-term historical calculation for the relevant market (i.e., Canada, U.S.) as published
11 by Morningstar Inc. Next, I derived a forward-looking estimate of the equity risk
12 premium using forward projections of the return on the relevant market indices less the
13 relevant risk-free rate. Forward return projections were derived by calculating the
14 implied market ROE on a market-capitalization weighted basis for the individual
15 companies comprising a broad market an index. I have used the DCF methodology to
16 determine the applied expected market return. For the forward-looking estimate for
17 Canada and the U.S., I calculated an MRP of 7.73 percent and 8.03 percent, respectively.

18 In the U.S., Ibbotson risk premia data is available from 1926-2011 and results in a 6.60
19 percent risk premium, the arithmetic mean of the premium of the returns on the S&P
20 500 over long-term government bond income returns. In Canada, the longest period for
21 which risk premia data were available from Ibbotson was from 1936 – 2011 in Canadian
22 currency, which yielded an equity risk premium of 5.38 percent; and from 1939-2011 in

⁷⁷ Marshall E. Blume, *The Journal of Finance*, Vol. 30, No. 3. (Jun., 1975), at p. 794.

1 U.S. dollars, yielding a 5.99 percent equity risk premium. The Canadian market is
2 represented by the S&P/TSX Composite Index and earlier sources provided by
3 Ibbotson Associates.⁷⁸ After an examination of the four MRP values discussed above, I
4 determined that a reasonable MRP would be the average of those four values, or 6.94
5 percent.

6 **Table 7: Market Risk Premium Values**

	Canadian MRP	U.S. MRP
Historical MRP	5.38%	6.60%
Forward-looking MRP	7.73%	8.03%
Average	6.94%	

7 **Q: 83 Why is it appropriate to use the arithmetic mean of the historic market risk**
8 **premiums as your starting point?**

9 A: It is appropriate to use the arithmetic mean of the historic market risk premiums as a
10 starting point because the arithmetic mean, as opposed to the geometric mean, is the
11 simple average of single period rates of return. The geometric mean is the compound
12 rate that equates a beginning value to its ending value. The important distinction
13 between the two methods is that the arithmetic mean treats each periodic return as an
14 independent observation and, therefore, incorporates uncertainty into the calculation of
15 the long-term average. In his review of literature on the topic, Cooper noted the
16 following rationale for using the arithmetic mean:

17 Note that the arithmetic mean, not the geometric mean is the
18 relevant value for this purpose. The quantity desired is the rate of
19 return that investors expect over the next year for the random annual
20 rate of return on the market. The arithmetic mean, or simple

⁷⁸ Ibbotson Associates, *2012 Risk Premia Over Time Report*, Estimates from 1926-2012; Ibbotson - *Canadian Risk Premia over Time Report 2006*; and Morningstar International Equity Risk Premia Report 2012.

1 average, is the unbiased measure of the expected value of repeated
2 observations of a random variable, not the geometric mean. ...[the]
3 geometric mean underestimates the expected annual rate of return.⁷⁹

4 For the purposes of the CAPM analysis, therefore, the arithmetic mean of the equity
5 market returns over long-term government bond income returns as reported by
6 Ibbotson Associates is used.

7 **3. CAPM Results**

8 **Q: 84 How did you apply your CAPM model?**

9 A: I relied on the average of the historical and forecasted MRP estimates noted above, the
10 beta of 0.65, and the 3.75 percent projected yield on the Canadian long-term government
11 bond. The results of the CAPM analysis, including flotation costs, are provided below
12 and are described in detail in Exhibit JMC-6. Finally, I made a further adjustment of
13 0.75 percent to reconcile the differences between the CAPM results and the DCF results.
14 This reconciliation is conceptually consistent with the Régie's approach factoring in the
15 adjustment for "Results of Other Models".⁸⁰

⁷⁹ Ian Cooper, "Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting," *European Financial Management* 2.2 (1996): 158.

⁸⁰ Decision 2010-147, Régie De L'Energie, November 26, 2010, at 28. Decision D-2009-156, Régie de L'Energie, December 7, 2009, at p. 27. [English Version]

1

Table 8: CAPM Results

	Coyne Reconciled CAPM
Risk Free Rate	3.75%
Beta	0.65
Market Risk Premium	6.94%
Sub-Total	8.26%
Flotation Cost	0.30%
Sub-Total	8.56%
Adjustment for Other Models	0.75%
Total	9.34%

2

3 **Q: 85 Have you examined previous Régie Decisions and expert evidence filed in**
4 **past rate cases where the CAPM was analyzed?**

5 A: Yes, I have. Table 9 (below) shows the Régie’s final CAPM determination in the 2011
6 Gazifere case, inputs of Dr. Roger Morin and Dr. Laurence Booth from the previous
7 Gaz Métro rate case, as well as the Régie’s final CAPM determination in that case. The
8 table also includes the range of inputs provided by Dr. Booth in the recent Intragaz, Inc.
9 (“Intragaz”) ROE proceeding and my CAPM inputs as filed in this evidence.⁸¹ As
10 shown, there is a wide range of CAPM results based on various assumptions used for the
11 risk free rate, the market risk premium and beta coefficient estimates.

⁸¹ Intragaz did not file a CAPM analysis in its 2013 return on equity evidence.

1

Table 9: Various CAPM Inputs for Recommended and Allowed ROEs

	Gazifere 2011 Rate Case		Gaz Métro 2012 Rate Case					Intragaz 2013 Rate Case		Gaz Métro 2013 Rate Case
	Régie	Régie	Morin	Booth	Booth	Régie	Régie	Booth	Booth	Coyne CAPM Reconciled
Risk-Free Rate	4.15%	4.50%	4.40%	4.50%	4.50%	3.91%	4.50%	3.00%	3.00%	3.75%
Beta	0.50	0.55	0.70	0.45	0.55	0.50	0.60	0.45	0.55	0.65
x Market Risk Premium	5.50%	5.75%	6.70%	5.00%	6.00%	5.50%	5.75%	5.00%	6.00%	6.94%
Proxy Group Risk Premium	2.75%	3.16%	4.69%	2.25%	3.30%	2.75%	3.45%	2.25%	3.30%	4.54%
Straight CAPM Calculation	6.90%	7.66%	9.09%	6.75%	7.80%	6.66%	7.95%	5.25%	6.30%	8.29%
Flotation Cost	0.50%	0.50%	0.30%	0.50%	0.50%	0.30%	0.40%	0.50%	0.50%	0.30%
"Simple" CAPM	7.40%	8.16%		7.25%	8.30%	6.96%	8.35%	5.75%	6.80%	8.59%
Gaz Métro Risk Adjustment	0.25%	0.50%				0.25%	0.35%			
Adjustment for Other Models	0.25%	0.50%				0.25%	0.50%			0.75%
Excess Credit Spreads	0.25%	0.55%		0.25%	0.40%	0.25%	0.40%	0.40%	0.40%	
Operation Twist								0.80%	0.80%	
Total	8.15%	9.71%	9.39%	7.50%	8.70%	7.71%	9.60%	6.95%	8.00%	9.34%
Recommended/Allowed ROE	9.10%		9.39%	8.10%		8.90%		7.50%		9.34%

2

3

*The 9.34% CAPM result above may not calculate due to rounding.

4

Q: 86 Please describe the areas in which you disagree with the assumptions and

5

determinations shown in Table 9.

6

A: There are several areas in which I disagree with the CAPM assumptions provided above.

7

Specifically, I disagree with Dr. Booth's beta coefficient estimates, his MRP estimates

8

and his sole reliance on the traditional CAPM analysis. The adjustments shown above

9

the line noted as "Simple" CAPM demonstrate that a simple CAPM does not work in

10

the current market environment. The adjustments made to the CAPM below the

11

"Simple" CAPM show that the beta and market risk premium determined are far too

12

low.

13

Q: 87 Why do you disagree with beta coefficients generally relied on by Dr. Booth?

14

A: Dr. Booth's beta coefficient of 0.45 to 0.55 is unsupported by any publicly available beta

15

coefficient estimates that are used by investors on a day-to-day basis. In a data response

16

filed by Dr. Booth in the 2012 Gaz Métro rate case, he cites to a study completed by

17

Gombala and Kahl and notes that: "the only paper that Dr. Booth is aware of that

18

applies beta forecasting models to utilities is the Gombala and Kahl paper in Financial

19

Management....This paper shows that utility betas revert to their own grand mean and

1 not the grand mean of all stocks which is 1.0.”⁸² In that data response, Dr. Booth did
2 not quote the Gombala paper verbatim. What it actually states is:

3 The results of this study, however, indicate that 1.0 is too high an
4 underlying mean for most utilities. Instead, they should be adjusted
5 toward a value that is less than one. For Consolidated Edison, an
6 underlying mean of 0.7 would be more appropriate.⁸³

7 Aside from the fact that this study is over 20 years old and is focused on a single utility, it
8 is very interesting that Dr. Booth cites the paper at all considering that the study
9 concludes that the beta for Consolidated Edison reverts to a grand mean that is closer to
10 0.7 and not to a grand mean of 0.45 to 0.50 as he has recommended in both the last Gaz
11 Métro rate case and the current Intragaz rate case. Other than this document, he was
12 unable to cite to any other studies, papers or estimates that would confirm that the grand
13 mean of 0.45 to 0.50 is reasonable. It should be further noted that all beta values used
14 by experts for purposes of the CAPM analysis are adjusted in some way, including the
15 betas used by Dr. Booth. What is most troubling about Dr. Booth’s beta range of 0.45
16 to 0.55 noted above is that he has not presented any specific analysis to support how he
17 determined that range or how it can be used or relied upon prospectively.

18 **Q: 88 Have regulators also determined that Dr. Booth’s beta estimate is not**
19 **consistent with the practices used by financial analysts?**

20 A: Yes, in its 2009 Decision, the British Columbia Utilities Commission stated:

21 The Commission panel will give weight to the CAPM approach, but
22 considers that the relative risk factor should be adjusted in a manner
23 consistent with the practice generally followed by analysts, so that it

⁸² Dr. Booth’s answers to Gaz Métro’s Information Requests, August, 2011, Data Request No. 16c.

⁸³ Time Series Processes of Utility Betas: Implications for Forecasting Systematic Risk, Michael J. Gombola and Douglas R. Kahl, Financial Management/Autumn 1990.

1 yields the result that accords with common sense and is not patently
2 absurd.⁸⁴

3 Further, the Board of Commissioners of Public Utilities for Newfoundland & Labrador
4 also declined to adopt Dr. Booth's beta coefficients:

5 The Board notes that the actual beta has not been within the
6 historical average since 1998. (Transcript, Oct. 22, 2009, pg.19/17-
7 25) While the starting point is the historical average beta (which Ms.
8 McShane refers to as a raw beta) the additional analysis performed by
9 Ms. McShane provides other perspectives suggesting the historic
10 average should be adjusted. The Board agrees with Dr. Booth that
11 utilities are a low beta stock. However, given that betas have not
12 recently been within historical norms and in light of the financial
13 market conditions, the Board does not expect that the beta will be
14 within historical averages for 2010. In this circumstance the Board
15 relies on the evidence of Ms. McShane that there should be an
16 upward adjustment. The Board believes that, based on the evidence,
17 a reasonable beta for Newfoundland Power is 0.60.⁸⁵

18 **Q: 89 Please explain why you disagree with the market risk premium used by Dr.**
19 **Booth as noted in Table 9, above.**

20 A: Dr. Booth's MRP estimate of 5.0% to 6.0% is based significantly on studies developed
21 by Professor Pablo Fernandez. Those studies can be viewed as problematic because
22 studies based on surveys are not reliable and do not reflect the views of actual market
23 participants. Moreover, Professor Fernandez's 2011 and 2012 surveys provide the
24 following MRP's for the U.S. and Canada:

⁸⁴ Decision G-158-09: In the Matter of Terasen Gas Inc, Return on Equity and Capital Structure, British Columbia Utilities Commission, December 16, 2009, at p. 45.

⁸⁵ Reason for Decision Order No. P.U.43 (2009), Newfoundland and Labrador Board of Commissioners of Public Utilities, at p. 20.

1

Table 10: Recent Fernandez MRP Survey Results⁸⁶

	2012	2011
United States	5.5%	5.5%
Canada	5.4%	5.9%

2

Although I do not agree that these types of survey results should be used in the calculation of the CAPM, these updated survey results disprove Dr. Booth's theory that the MRP in Canada is significantly lower than the MRP in the U.S.

3

4

5

Q: 90 Do you agree with Dr. Booth's use of the CAPM analysis as the only determination of a company's return on equity?

6

7

A: No, I do not. As discussed earlier in this evidence, regulators in British Columbia recently adopted the DCF analysis as the primary method for determining ROE in a case involving Terasen Gas. Moreover, other jurisdictions in Canada have not limited their ROE determinations to just one method, but rather use two or more methods. The Ontario Energy Board concluded that several analytical tests can provide value. It stated that: "The Board finds that each of the analytical tests has value as each provides a different perspective on the question of the appropriate ROE." Finally, it is interesting to note that Professor Fernandez (the same person cited by Dr. Booth in his 2011 *Gaz Métro* evidence) has provided evidence that the CAPM does not work and has concluded that historical betas are useless to estimate the expected return of companies.⁸⁷

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⁸⁶ Market Risk Premium used in 82 countries in 2012, a survey with 7,192 answers, Pablo Fernandez, Javier Aguirreamalloa and Luis Corres, June 19, 2012, at 3. Market Risk Premium used in 56 countries in 2011: a survey with 6,014 answers, Pablo Fernandez, Javier Aguirreamalloa and Luis Corres, April 25, 2011, at 3.

⁸⁷ Are calculated betas worth for anything?, Pablo Fernandez, IESE Business Scholl, University of Navarra, October 16, 2008, at p. 2 and p. 18.

1 **Q: 91 Do you agree with Dr. Booth’s that “the most important thing is to use the**
2 **right estimation technique and not necessarily a variety of techniques”?**⁸⁸

3 A: No, I do not. As stated previously in my testimony, it is preferable to use multiple
4 methodologies when estimating the cost of capital because each methodology provides a
5 different perspective. Both the DCF method and the CAPM are based on different
6 assumptions, and have strengths and weaknesses depending on the economic and
7 financial market conditions. As such, in my view, no individual financial model should
8 be used to estimate the cost of equity on a stand-alone basis without considering the
9 results of other approaches and without applying informed judgment.

10 **4. The CAPM Approach and the Régie**

11 **Q: 92 Should the Régie consider modifications such as the CAPM determinations it**
12 **has made in the past related to the beta coefficient, the risk free rate and the**
13 **MRP?**

14 A: Yes. As shown in Table 9, above, the adjustments made to the “Simple” CAPM,
15 including the Gaz Métro risk adjustment, the adjustment for “Results of Other Models”,
16 and the adjustments for “Excess credit spreads” and for “Operation Twist” are all
17 remedies used to adjust the underlying inputs used in the CAPM calculation.

18 **Q: 93 Please discuss the CAPM adjustments the Régie has made in the past.**

19 A: In its recent Decisions, the Régie retained an MRP of 5.50 percent to 5.75 percent for
20 the “Simple” CAPM and allowed an adjustment between 0.25 percent and 0.55 percent
21 to take into account the effect on the corporate bond yield spread during the financial

⁸⁸ Reason for Decision Order No. P.U.43 (2009), Newfoundland and Labrador Board of Commissioners of Public Utilities, at p. 15.

1 crisis and directly associated this adjustment with the MRP.⁸⁹ While my recommended
2 MRP of 6.94 percent is significantly higher, it is important to note that it does not
3 require an adjustment for “Excess credit spreads” since I rely on historical (ex-post)
4 estimates but also on forward-looking (ex-ante) estimates that account for the higher
5 credit spreads. Also, I give equal weight to the Canadian and U.S. MRP, as stated by the
6 Régie in its previous Decisions.

7 [217] The Régie also emphasizes that in its decision D-2009-156, for
8 estimating the market risk premium, it used equal proportions of
9 Canadian and American data. The Régie uses the same approach,
10 taking account of the evidence in this case.⁹⁰

11 Similarly, the Régie has recognized that the CAPM has to be adjusted when the risk-free
12 rate is significantly below its historical average. In one case, it adjusted the final CAPM
13 determination by 40 basis points⁹¹ and in another case adjusted the CAPM determination
14 by a range of 0.25 percent to 0.50 percent.⁹² In addition, Dr Booth, in his Intragaz
15 evidence, refers to a 0.80 percent adjustment that he justifies by reference to the effects
16 of “Operation Twist”. However, as explained above, the risk-free rate for my CAPM
17 recommendation relies on the 2012 through 2017 forecast yield for the Canadian long
18 government bond, which reflects the current market reality that near-term bond yields
19 are at all-time lows, and that investors factor higher interest rate levels into their longer-
20 term expectations. Because those yields remain at historical lows, the results produced
21 by the CAPM may not properly reflect the historical relationships upon which the theory

⁸⁹ Decision 2011-182, Régie De L’Energie, November 25, 2011, at 76. [English Version] Decision 2010-147, Régie De L’Energie, November 26, 2010, at p. 19. [English Version] Decision D-2009-156, Régie De L’Energie, December 7, 2009, at p. 27. [English Version]

⁹⁰ Decision –D-2011-182, Régie De L’Energie, November 25, 2009, at p. 57.

⁹¹ Decision D-2007-116, Régie De L’Energie, October 15, 2007, at p. 7. [English Version]

⁹² Decision –D-2009-156, Régie De L’Energie, December 7, 2009, at 27. [English Version] Decision D-2010-147, Régie De L’Energie, November 26, 2010 at p. 19. [English Version]

1 of the CAPM was established. However, there is no need for a specific adjustment for
2 the low level of the risk-free rate, other than the adjustment for the “Results of Other
3 Models”.

4 Finally, in the same Decisions, the Régie adjusted the “Simple” CAPM determination by
5 0.25 percent to 0.35 percent because it recognizes that the beta coefficient does not
6 account for Gaz Métro’s higher business risk.⁹³ However, my beta of 0.65 is inclusive of
7 the adjustment for Gaz Métro’s risk level, as I believe the U.S. gas distribution proxy
8 group is more comparable to Gaz Métro, and that there are no significant differences in
9 business risk between Gaz Métro and the operating companies in the U.S. proxy group
10 in the near term.

11 **Q: 94 Does your final CAPM recommendation align with the Régie’s past ROE**
12 **determinations?**

13 A: Yes, it does. I have reconciled my analysis with the adjustments the Régie has made in
14 the past through the 25 to 35 basis point risk adjustment that is embedded in my beta,
15 the 0.25 percent to 0.55 percent adjustment that is embedded in my MRP and the 0.75
16 percent adjustment for the “Results of Other Models”.

17 **B. Discounted Cash Flow Model (“DCF”)**

18 **1. DCF Theory**

19 **Q: 95 Please summarize the theory behind the DCF model.**

⁹³ Decision 2011-182, Régie De L’Energie, November 25, 2011, at p. 76. [English Version] Decision D-2009-156, Régie De L’Energie, December 7, 2009, at p. 69. [English Version]

1 A: The DCF model evolves from the base premise that investors will value a given
2 investment according to the present value of its expected cash flows over time. This
3 model is widely used in valuing entire companies by discounting the projected cash flows
4 for the enterprise. When valuing the entire enterprise, financial analysts discount the
5 future stream of free cash flows. When considering the common stock of a company,
6 investors consider the future stream of dividends as cash flow from this investment
7 (characterized by the Dividend Discount Model). Efficient markets price a stock
8 according to these expectations, leading to the expression shown in Formula [3]:

$$9 \quad P = \frac{D_0(1+g)^1}{(1+r)^1} + \frac{D_1(1+g)^2}{(1+r)^2} + \dots + \frac{D_{n-1}(1+g)^n}{(1+r)^n} \quad [3]$$

10
11 where:

12 P = the current stock price

13 g = the dividend growth rate

14 D_n = the dividend in year n

15 r = the cost of common equity.
16

17 Assuming a constant growth rate in dividends, the model may be rearranged to compute
18 the ROE accordingly, as shown in Formula [4]:

$$19 \quad r = \frac{D}{P} + g \quad [4]$$

20
21 Stated otherwise, the cost of common equity is equal to the dividend yield, plus the
22 dividend growth rate.

1 **Q: 96 What are the assumptions underlying the Constant Growth DCF model.**

2 A: The Constant Growth DCF model requires the following assumptions: (1) a constant
3 average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a
4 constant price-to-earnings multiple; and (4) a discount rate greater than the expected
5 growth rate. There are also other forms of the DCF model that do not rely on the
6 assumption of constant growth in perpetuity. There are many forms of the DCF model
7 that allow for changes in the growth rate assumption, if there is reason to believe that
8 investors do not expect a steady growth rate in perpetuity. The Multi-Stage form of the
9 model sets the subject company's stock price equal to the present value of future cash
10 flows received over several (typically three) "stages.". In all three stages, cash flows are
11 defined as projected dividends, which increase at the growth rate specific to each stage.

12 **2. Growth Rate Estimates**

13 **Q: 97 What are the sources of growth in a company's earnings and dividends?**

14 A: The sources of growth in the company's earnings and dividends are the investment
15 opportunities and strategies that a company pursues. Companies generally achieve
16 growth through a combination of marketing, finance and production strategies. Growth
17 can be achieved from a financial perspective by increasing the return on equity,
18 reinvesting earnings in the company, selling new common stock at a price greater than
19 book value, paying down debt to reduce interest expenses, borrowing to invest in
20 projects that have a return that exceeds the cost of debt, or "monetizing" a portion of
21 expected growth by selling at a multiple of book value and current earnings lines of

1 business that have high future growth and earnings potential. Some or all of these
2 approaches are often pursued by companies that are growing rapidly.

3 All of the expected sources of growth in a company are reflected through its current
4 stock price, and the resulting dividend yield used in the DCF analysis, not just the
5 growth in utility operations. It is the growth expectation embedded in those dividend
6 yields that an analyst must estimate in conducting a DCF analysis. As the proxy
7 companies grow in the future by investing heavily in unregulated activities, they can be
8 expected to achieve higher earnings both from increasing the level of their investments
9 and also from increasing the average rate of return on their invested capital by shifting
10 their capital away from low regulated returns.

11 **Q: 98 Is the growth rate a key assumption in the use of the DCF model?**

12 A: Yes. Estimating investors' expectations of future growth for the proxy companies is a
13 significant factor in the DCF model. Since the growth rate used in the DCF model is the
14 estimate of future growth, there is no precise estimation methodology. Investors and
15 analysts are aware of historical growth rates for a company and consider historical
16 growth rates in their estimation of future growth rates. However, in considering the
17 appropriate growth rate to use in the DCF model, the most reliable indicators of
18 investors' expectations are (1) analysts' estimates of future growth, and (2) the retention
19 or "sustainable" growth rate. While there are many methods that reasonably can be
20 employed in formulating a growth rate estimate, an analyst must attempt to ensure that
21 the end result is an estimate that fairly reflects the forward-looking growth rate that
22 investors expect.

1 **Q: 99 What are the disadvantages of relying on historical growth rates in the DCF**
2 **model?**

3 A: The DCF model is a forward looking model that estimates the cost of equity based on
4 the net present value of the expected cash flows of a company. Therefore, past growth
5 rates may be misleading because they may represent circumstances and operations that
6 cannot be repeated in the future. For example, it is highly unlikely that historical
7 averages over periods with widely varying rates of inflation, interest rates and costs of
8 capital, such as have recently been experienced, will be equivalent to current growth rate
9 expectations. Therefore, historical growth rates are not the best source of growth rates
10 to be used in the DCF model.

11 **Q: 100 Is it reasonable to assume that investors have reviewed historical growth**
12 **rates in developing their estimates of future growth for a company?**

13 A: Yes. For that reason, the use of projected growth rates provides investors'
14 understanding of the historical performance of the company as well as their expectations
15 for the future. Historical growth rates themselves should not be used as an estimate of
16 the expected growth of a company in the DCF model. Typically, investors rely on
17 expected earnings growth rates for several reasons. First, although the DCF model is
18 based on dividend growth rates, a company's dividend growth is derived from and can
19 only be sustained by earnings growth. Second, in order to reduce the long-term growth
20 rate to a single measure, as is the case in the Constant Growth DCF model, it is
21 necessary to assume a constant payout ratio, and constant growth rate in earnings per
22 share, dividends per share and book value per share. Third, since earnings growth rates
23 are least influenced by capital allocation decisions that companies may make in response

1 to near-term changes in the business environment that directly affect near-term dividend
2 payout ratios, estimates of earnings growth are more indicative of long-term investor
3 expectations than are dividend growth estimates. Finally, analysts' forecasts of earnings
4 per share growth are widely available. Dividend and book value growth rate
5 expectations are not generally estimated by analysts.⁹⁴

6 **Q: 101 Are projected earnings growth rates for utility companies generally available?**

7 A: Yes, projected earnings growth rates are generally available. For example, analysts' five-
8 year earnings growth rates are publicly available from Zacks' Investor Services for U.S.
9 companies. Yahoo! Finance, which is a public source, and SNL Financial, a
10 subscription-based service, publishes earnings growth rates for both Canadian and U.S.
11 companies. All of these services provide consensus estimates that compile projections
12 of earnings growth from several analysts. Value Line, which is a subscription based
13 publication, provides five-year projected earnings, dividend and book value growth rates
14 based on the expectations of the individual analyst who has reviewed each company.

15 One could then use this consensus estimate in the DCF model as a reasonable indicator
16 of the future growth rate that investors expect when they establish the stock price and
17 dividend yield for Gaz Métro. Similar consensus estimates are available for each of the
18 companies in my two proxy groups, which allow a DCF calculation that appropriately
19 matches the dividend yield for each company with the expected growth rate for that
20 company.

⁹⁴ Value Line Investment Survey is the only publication of which Concentric is aware that projects dividend and book value growth rates. Those estimates represent the Value Line analyst's perspective on dividend and book value growth. In contrast, many of the earnings growth rates that are publicly available are consensus estimates with contributions provided by several analysts.

1 **Q: 102 How long have consensus earnings growth rate forecasts been available for**
2 **Canadian utility companies?**

3 A: SNL Financial began compiling consensus earnings growth estimates for Canadian utility
4 companies in February of 2012. In addition, Yahoo! Finance also reports long-term
5 growth estimates for Canadian utilities. This is a key change in circumstances from prior
6 cases before the Régie. For example, in the Régie's 2011 decision concerning Gaz
7 Métro's rate of return, the only significant problem identified with using the DCF
8 method was that:

9 ...it is difficult to obtain a reliable estimate for the growth rate
10 dividends given the financial analysts do not produce growth
11 forecasts for regulated Canadian utilities.⁹⁵

12 **3. Reliability of Analysts' Growth Rates**

13 **Q: 103 Is there academic support for the use of analysts' earnings growth estimates?**

14 A: Yes, there is academic support for the use of analyst growth rates. The relationship
15 between various growth rates and stock valuation metrics has been the subject of much
16 academic research.⁹⁶ Many published articles specifically support the use of analysts'
17 earnings growth projections in the DCF model in general, as well as for a method of
18 calculating the expected market risk premium in particular. A 1986 article entitled
19 "Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return"
20 by Dr. Robert Harris, for example, demonstrated that financial analysts' earnings
21 forecasts (referred to in the article as "FAF") in a Constant Growth DCF formula are an

⁹⁵ D-2011-182, 25 November 2011, para. 193.

⁹⁶ See, for example, Harris, Robert, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, *Financial Management*, Spring 1986.

1 appropriate method of calculating the expected market risk premium.⁹⁷ In that regard,

2 Dr. Harris noted that:

3 ...a growing body of knowledge shows that analysts' earnings
4 forecasts are indeed reflected in stock prices. Such studies typically
5 employ a consensus measure of FAF calculated as a simple average
6 of forecasts by individual analysts.⁹⁸

7 Dr. Harris further noted that,

8 Given the demonstrated relationship of FAF to equity prices and the
9 direct theoretical appeal of expectational data, it is no surprise that
10 FAF have been used in conjunction with DCF models to estimate
11 equity return requirements.⁹⁹

12 In a somewhat later article, Professors Carleton and Vander Weide performed a study to
13 determine whether projected earnings growth rates are superior to historical measures of
14 growth in the implementation of the DCF model.¹⁰⁰ Although the purpose of that study
15 was to "investigate what growth expectation is embodied in the firm's current stock
16 price,"¹⁰¹ the authors clearly indicate the importance of earnings projections in the
17 context of the DCF model. Professors Carleton and Vander Weide concluded that:

18 ...our studies affirm the superiority of analysts' forecasts over simple
19 historical growth extrapolations in the stock price formation process.
20 Indirectly, this finding lends support to the use of valuation models
21 whose input includes expected growth rates.¹⁰²

⁹⁷ Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return*, Financial Management, 1986 at p. 66.

⁹⁸ *Ibid.*, at 59. Emphasis added. As noted in my Direct Testimony, Zacks and First Call, the sources of earnings growth projections that I use in addition to Value Line, are consensus forecasts.

⁹⁹ *Ibid.*, at p. 60.

¹⁰⁰ James H. Vander Weide, Willard T. Carleton, *Investor growth expectations: Analysts vs. history*, The Journal of Portfolio Management, Spring, 1988.

¹⁰¹ *Ibid.*, at p. 78.

¹⁰² *Ibid.*, at p. 82.

1 Similarly, in an article entitled *Estimating Shareholder Risk Premia Using Analysts Growth*
2 *Forecasts*, Harris and Marston presented “estimates of shareholder required rates of return
3 and risk premia which are derived using forward-looking analysts’ growth forecasts”.¹⁰³
4 In addition to other findings, Harris and Marston reported that,

5 ...in addition to fitting the theoretical requirement of being forward-
6 looking, the utilization of analysts’ forecasts in estimating return
7 requirements provides reasonable empirical results that can be useful
8 in practical applications.¹⁰⁴

9 More recently (2004), the Carleton and Vander Weide study was updated to determine
10 whether the finding that analysts’ earnings growth forecasts are relevant in the stock
11 valuation process still holds. The results of that updated study continued to demonstrate
12 the importance of analysts’ earnings forecasts, including the application of those
13 forecasts to utility companies.¹⁰⁵ Similarly, Brigham, Shome and Vinson noted that
14 “evidence in the current literature indicates that (1) analysts’ forecasts are superior to
15 forecasts based solely on time series data; and (2) investors do rely on analysts’
16 forecasts.”¹⁰⁶

17 **Q: 104 What is “optimism bias” in the earnings growth rate forecasts of security**
18 **analysts, and how would it affect an estimate of the ROE?**

19 A: Optimism bias is related to the observed tendency for analysts to forecast earnings
20 growth rates that are higher than are actually achieved. If optimism bias were present in

¹⁰³ Robert S. Harris, Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts’ Growth Forecasts*, Financial Management, Summer 1992.

¹⁰⁴ *Ibid.*, at p. 63.

¹⁰⁵ Advanced Research Center, *Investor Growth Expectations*, Summer, 2004.

¹⁰⁶ *The Risk Premium Approach to Measuring a Utility’s Cost of Equity*, Financial Management, Spring 1985.

1 analysts' earnings forecasts, it could create an upward bias in the estimated cost of capital
2 that results from the DCF approach.

3 **Q: 105 Is it reasonable to expect that analysts' growth estimates currently may be**
4 **overly optimistic or may represent a conflict of interest?**

5 A: No. Several regulatory changes have been implemented that are designed to provide fair
6 disclosure and eliminate analysts' bias. On August 15, 2000, the U.S. Securities and
7 Exchange Commission ("SEC") adopted Regulation FD to address the selective
8 disclosure of information by publicly traded companies and other issuers. Regulation
9 FD provides that when an issuer discloses material nonpublic information to certain
10 individuals or entities, generally, securities market professionals such as stock analysts or
11 holders of the issuer's securities who may well trade on the basis of the information—the
12 issuer must make public disclosure of that information. In this way, the new rule aims to
13 promote the full and fair disclosure.

14 **Q: 106 Have there been other regulatory changes that affect the interaction between**
15 **analysts and investors?**

16 A: Yes, in 2002 the SEC, the New York Stock Exchange ("NYSE"), the New York
17 Attorney General ("NYAG"), and other state regulators introduced guidelines regarding
18 the interaction between analysts and investment banks that has become known as the
19 Global Settlement. The Global Settlement outlines the following structural reforms that
20 limit the interaction between analysts and investment banks:

- 1 • The firms will separate research and investment banking, including physical
2 separation, completely separate reporting lines, separate legal and compliance
3 staffs, and separate budgeting processes.
- 4 • Analysts' compensation cannot be based directly or indirectly upon investment
5 banking revenues or input from investment banking personnel.
- 6 • Investment bankers cannot evaluate analysts.
- 7 • An analyst's compensation will be based in significant part on the quality and
8 accuracy of the analyst's research.
- 9 • Decisions concerning compensation of analysts will be documented.
- 10 • Investment bankers will have no role in determining what companies are covered
11 by the analysts.
- 12 • Research analysts will be prohibited from participating in efforts to solicit
13 investment banking business, including pitches and road shows.
- 14 • Firms will implement policies and procedures reasonably designed to assure that
15 their personnel do not seek to influence the contents of research reports for
16 purposes of obtaining or retaining investment banking business.
- 17 • Firms will create and enforce firewalls between research and investment banking
18 reasonably designed to prohibit improper communications between the two.
19 Communications should be limited to those enabling research analysts to fulfill a
20 “gatekeeper” role.
- 21 • Each firm will retain, at its own expense, an Independent Monitor to conduct a
22 review to provide reasonable assurance that the firm is complying with the
23 structural reforms. This review will be conducted eighteen months after the date

1 of the entry of the Final Judgment, and the Independent Monitor will submit a
2 written report of his or her findings to the SEC, NASD, and NYSE within six
3 months after the review begins.¹⁰⁷

4 **Q: 107 Has any research been conducted to measure whether analyst forecast bias**
5 **exists since the Global Settlement was implemented?**

6 A: Yes. A 2010 article in Financial Analyst Journal found that analyst forecast bias has
7 declined significantly or disappeared entirely since the Global Settlement:

8 Introduced in 2002, the Global Settlement and related regulations
9 had an even bigger impact than Reg FD on analyst behavior. After
10 the Global Settlement, the mean forecast bias declined significantly,
11 whereas the median forecast bias essentially disappeared. Although
12 disentangling the impact of the Global Settlement from that of
13 related rules and regulations aimed at mitigating analysts' conflicts of
14 interest is impossible, forecast bias clearly declined around the time
15 the Global Settlement was announced. These results suggest that the
16 recent efforts of regulators have helped neutralize analysts' conflicts
17 of interest.¹⁰⁸

18 **4. Predominance of DCF Approach in North American Regulatory Decisions**

19 **Q: 108 What are the traditional models used in Canada and the U.S. to estimate the**
20 **cost of equity?**

21 A: While Canadian regulatory agencies have generally relied on the results of the CAPM
22 approach, the DCF model is the predominant method relied on in U.S. state and Federal
23 regulatory proceedings.

¹⁰⁷ U.S. Securities and Exchange Commission Fact Sheet on the Global Settlement. The Global Settlement was finalized on April 28, 2003, however the reforms were introduced and discussed prior to being finalized.

¹⁰⁸ Armen Hovakimian and Ekkachai Saenyasiri, *Conflicts of Interest and Analyst Behavior: Evidence from Recent Changes in Regulation*, Financial Analysts Journal, Volume 66, Number 4, July/August 2010, at p. 105.

1 **Q: 109 What forms of the DCF model are relied on by the FERC?**

2 A: Since the 1980s the FERC has had a longstanding reliance on the DCF model to
3 estimate the cost of equity for natural gas pipeline companies and electric transmission
4 and wholesale distribution assets.¹⁰⁹ In Opinion No. 486-B, the FERC provided
5 guidance on how each of the assumptions of the Two-Stage DCF model should be
6 specified for natural gas pipeline companies. Specifically, the FERC relies on analysts'
7 projected earnings growth rates in the first stage and a measure of GDP growth as the
8 long-term growth rate. The FERC relies on a similar form of the Two-Stage DCF
9 model to estimate the cost of equity for electric transmission and distribution assets. In
10 that model, the FERC has traditionally relied on analysts' projected earnings growth rates
11 and the sustainable growth rate as the short term growth rate and a measure of GDP
12 growth in the second-stage.

13 **Q: 110 Do U.S. state regulatory commissions generally give primary weight to the**
14 **DCF model in estimating the cost of equity?**

15 A: Yes. Many U.S. state regulatory commissions have relied exclusively on the DCF model
16 for estimating the cost of capital or have afforded the results of this model considerable
17 weight in final determinations of the return on equity. Based on a review of recent state
18 regulatory commission decisions, at least twelve state commissions have primarily relied
19 on the DCF model for estimating the cost of equity. Furthermore, certain states have a
20 long-standing policy of relying on the DCF model.

¹⁰⁹ Docket No. PL07-2-000, Composition of Proxy Groups for Determining Gas and Oil Pipeline Return on Equity, Policy Statement, April 17, 2008, at p. 2.

1 Alaska

2 Although we consider all ROE analyses submitted to us by expert
3 witnesses, in recent cases we have relied most heavily on the constant
4 growth variant of the DCF model and have indicated our preferred
5 ways of calculating it. We continue to give the most weight to
6 constant growth DCF analyses in this case. We believe that weighting
7 is appropriate under current economic conditions.¹¹⁰

8 District of Columbia

9 In its decisions, the Commission has relied primarily on the DCF
10 method to determine a utility's cost of common equity because the
11 Commission consistently has found that the DCF method produces
12 more reasonable results than those of other calculation methods.
13 Nevertheless, the Commissions' preference for the DCF method
14 does not preclude consideration of other methods for calculating the
15 cost of equity. The Commission has taken into account the results of
16 the various approaches (DCF, CAPM, and Risk Premium) in
17 estimating the ROE in this proceeding. The Commission, however,
18 will focus on the DCF model (relying primarily on forecasted growth
19 rates) to determine the appropriate ROE.¹¹¹

20 Illinois

21 Historically speaking, the Commission has relied heavily on the
22 constant growth DCF model; however, in recent years the
23 Commission has tended to favor the multi-stage DCF model over the
24 constant growth model due to concerns about the sustainability of
25 analysts' growth rate estimates . . . The Commission would not be
26 surprised if circumstances change such that, at some point in time, it
27 would be appropriate to rely on the constant growth DCF model.¹¹²

28 Maryland

29 None of the parties' recommendations for ROE were based purely
30 on the classic DCF analysis, which the Commission has historically
31 preferred and deemed the most reliable basis for estimating return on
32 equity. Consistent with our preference for DCF, we find that the
33 most appropriate estimate of ROE in this case is 9.60, which is the

¹¹⁰ Regulatory Commission of Alaska, Docket No. U-10-29, Order No. 15, September 2, 2011, at p. 26.

¹¹¹ Public Service Commission of the District of Columbia, Docket No. FC-1076, Order No. 15710, March 2, 2010, at p. 25.

¹¹² Illinois Commerce Commission, Docket No. 11-0282, January 10, 2012, at p. 121.

1 ROE calculated by Staff witness Alvarado using the classic DCF
2 analysis.¹¹³

3 New Mexico

4 The DCF model is the traditional method relied on by this
5 Commission to determine return on equity. It has been used by the
6 Commission in the past for many utilities, including PNM Gas
7 Services and its predecessor. See, Final Orders in Case Nos. 2662,
8 2147, 1787. The DCF methodology is used in a majority of the states
9 and its use by this Commission has been expressly approved by the
10 Supreme Court of New Mexico.¹¹⁴

11 Utah

12 We continue to place primary reliance upon DCF model results to
13 estimate the cost of common equity. The risk premium models also
14 provide information which can appropriately be considered in
15 determining the cost of common equity in this case.¹¹⁵

16 In contrast, I am not aware of any state regulatory commissions that rely primarily on the
17 CAPM model. Furthermore, Massachusetts, for example, has determined that the
18 CAPM model has limited or no value in estimating the ROE.

19 The Department has repeatedly found that a risk premium analysis
20 could overstate the amount of company-specific risk and, therefore,
21 overstate the cost of equity. The Department finds that Fitchburg's
22 risk premium model tends to overstate the required ROE for the
23 Company. Accordingly, we will place limited weight on the results of
24 the Company's risk premium model. The Department has previously
25 found that the traditional CAPM as a basis for determining a utility's
26 cost of equity has limited value and, in some cases no value, because
27 of a number of limitations including questionable assumptions that
28 underlie the model.¹¹⁶

¹¹³ Maryland Public Service Commission, Case No. 9267, Order No. 84475, November 14, 2011, at p. 49.

¹¹⁴ New Mexico Public Regulation Commission, Recommended Order in Case No. 06-00210-UT, at p. 19.

¹¹⁵ Utah Public Service Commission, Docket No. D-09-035-023, February 18, 2010, at p. 8-9.

¹¹⁶ Massachusetts Department of Public Utilities, Docket Nos. DPU 11-01 and 11-02, August 1, 2011, at p. 414-415.

1 **Q: 111 Have any public utility commissions in Canada given primary weight to the**
2 **DCF analysis?**

3 A: Yes, the BCUC has given weight to the DCF method in the past and recently adopted
4 the DCF analysis as its primary method for determining ROE in the Terasen Gas case.
5 When determining a fair rate of return, for example, in 2006, the BCUC gave weight to
6 both the Equity Risk Premium (“ERP”) and DCF approaches.¹¹⁷ Again in 2009, the
7 BCUC considered DCF, ERP, and CAPM approaches, but found that the DCF and
8 ERP are the most common approaches and determined “that the DCF approach has the
9 more appeal in that it is based on a sound theoretical base, it is forward looking and can
10 be utility specific.”¹¹⁸ Overall, the BCUC decided:

11 *Accordingly the Commission Panel determines that in determining a*
12 *suitable ROE for TGI, it will give the most weight to the DCF*
13 *approach, some lesser weight to the ERP and CAPM approaches and*
14 *a very small amount of weight to the CE approach.*¹¹⁹
15 For the DCF approach, the BCUC found that U.S. data can act as a proxy for Canadian
16 data and rejected suggestions of analyst bias, noting that no allegations of upward bias
17 have been leveled against utility analysts.

18 **5. The DCF Approach and the Régie**

19 **Q: 112 Has the Régie considered multiple different methods for determining the**
20 **rate of return?**

21 A: Yes. For example, in its Decision D-2011-182 the Régie stated:

¹¹⁷ British Columbia Utilities Commission, In the Matter of Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. Application to Determine the Appropriate Return on Equity and Capital Structure and to Review and Revise the Automatic Adjustment Mechanism, March 2, 2006, at p. 1.

¹¹⁸ British Columbia Utilities Commission, In the Matter of Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc., Terasen Gas (Whistler) Inc. and Return on Equity and Capital Structure, December 16, 2009, at p. 45.

¹¹⁹ Ibid.

1 ... as no single method can perfectly reproduce the expected return
2 for investors, the Régie takes into account, for the purposes of
3 assessing the rate of return on Gaz Métro's shareholders' equity, the
4 results from the DCF model ... [Para. 207]

5 Similarly, in Decision D-2009-156 the Régie stated:

6 ... as no one model can perfectly reproduce investors' return
7 expectations, the Régie is taking into consideration the results of the
8 ECAPM and the DCF model ... as well as the results of the multi-
9 factor model ... for its assessment of Gaz Métro's rate of return.
10 [Para. 240]

11 **Q: 113 Has the Régie provided any guidance on the use of the DCF methodology**
12 **for estimating the ROE?**

13 A: Yes. In the 2011 decision concerning Gaz Métro's rate of return, the Régie identified
14 one problem with using the DCF methodology:

15 ...it is difficult to obtain a reliable estimate for the growth rate
16 dividends given the financial analysts do not produce growth
17 forecasts for regulated Canadian utilities.¹²⁰

18 However, as discussed earlier in my testimony, since that time, both SNL Financial and
19 Yahoo! Finance now report long-term growth estimates for Canadian utilities, which
20 alleviates the concerns raised by the Régie in the 2011 decision.

21 **6. DCF Analysis and Results**

22 **a) Dividend Yield**

23 **Q: 114 What is the formula for the dividend yield term of the DCF model?**

24 A: As shown in equation [5] below, the dividend yield component of the DCF model is
25 calculated as follows:

¹²⁰ D-2011-182, 25 November 2011, para. 193.

$$[5] \quad Y = \frac{D_0(1+0.5g)^1}{P_0}$$

1 **Q: 115 Why is one half year of growth applied to the dividend in the dividend yield**
2 **calculation?**

3 A: Since utility companies tend to increase their quarterly dividends at different times
4 throughout the year, it is reasonable to assume that dividend increases will be evenly
5 distributed over calendar quarters. Given that assumption, it is reasonable to apply one-
6 half of the expected annual dividend growth for purposes of calculating the expected
7 dividend yield component of the DCF model. This adjustment ensures that the
8 expected dividend yield is, on average, representative of the coming twelve-month
9 period, and does not overstate the aggregated dividends to be paid during that time.

10 **Q: 116 How did you calculate the dividend yields for the companies in your**
11 **comparison groups?**

12 A: For the DCF analysis, the dividend yields were calculated for each company in the
13 Canadian and U.S. proxy groups by dividing the current annualized dividend by the
14 average of the stock prices for each company. The price component of the calculation is
15 based on the proxy companies' current annualized dividend, and average closing prices
16 for the 30-, 90-, and 180-trading days ended November 30, 2012. Those dividend yields
17 are multiplied by the DCF model factor $(1 + 0.5g)$ to reflect expected future dividend
18 increases, to arrive at the dividend yield component of the DCF model.

19 **Q: 117 Is the dividend yield a measure of risk in the DCF model?**

20 A: No, it is not. In fact, the dividend yield, by itself, does not provide any guidance on the
21 appropriate cost of equity. An analyst can only derive information about the cost of

1 equity from the dividend yield when it is coupled with an expected growth rate for the
2 company in the DCF model.

3 **b) Constant Growth Rate Analysis**

4 **Q: 118 Please describe the growth rates used in your Constant Growth DCF**
5 **analysis.**

6 A: My Constant Growth DCF analysis for the Canadian proxy group is based on a constant
7 growth model that relies on analysts' forecasts of earnings growth. That DCF analysis
8 recognizes that the consensus of analysts' forecasts reflects the most important
9 component of investors' growth rate expectations, and it assumes that the analysts'
10 forecasts incorporate all information required to estimate a long-term expected growth
11 rate for a company. As discussed earlier in my testimony, financial research and
12 empirical literature indicate that analyst forecasts are the best available estimates for
13 future growth rates. Available earnings growth estimates from SNL Financial, Value
14 Line and First Call for each company in the Canadian proxy group were used. Those
15 growth rates are shown on Exhibit JMC-7, Schedules 4-6. For the U.S. gas distribution
16 proxy group, I used a blended growth rate that combines the analysts' consensus growth
17 rate estimates from Zacks, SNL and First Call and Value Line forecasts. Those growth
18 rates are shown on Exhibit JMC-7, Schedules 1-3. Zacks growth rates are not available
19 for the Canadian proxy group companies.

20 **c) Retention Growth Rate Analysis**

21 **Q: 119 Did you also consider the retention growth rate in your DCF analysis?**

22 A: Yes. For the U.S. gas distribution proxy group, I developed a retention growth DCF
23 estimate. For that model, an average growth rate was developed by blending the average

1 of the Zacks, SNL Financial, First Call and Value Line growth rates and the Value Line
2 retention growth rates that each company will be able to maintain 3-5 years in the future.
3 A forecast of retention growth is generally a suitable indicator of the minimum level of
4 growth that a company can maintain in the future. The blended growth rate forecasts
5 that combine those two indicators for the sustainable DCF analysis is shown on Exhibit
6 JMC-7, Schedules 7-9. In the current weak economic environment, it is appropriate to
7 combine retention growth forecasts for the U.S. gas distribution proxy group with
8 analysts' forecasts to get a better indicator of the long-term growth rates that investors
9 reasonably expect.

10 **Q: 120 How is the retention growth rate calculated?**

11 A: The retention growth rate is based on the premise that future growth in dividends for a
12 stock results from a portion of the total return being reinvested into the company,
13 instead of being paid to investors in the form of a dividend. The retention growth rate is
14 estimated based on the following formula:

15 [6]
$$g = (b \times r)$$

16 Where:

17 b = the percent of earnings that is retained

18 r = the book equity of the company

19 In this formula the “b” and “r” terms should be forward-looking estimates.

20 Retention of earnings causes an increase in the book value per share and, other factors
21 being equal, increases the amount of earnings that is generated per share of common stock.

1 The retention growth rate can be estimated by multiplying the expected retention rate (b) by
2 the rate of return on common equity (r) that a company is expected to earn in the future.
3 For example, a company that is expected to earn a return of 15 percent and retain 80
4 percent of its earnings might be expected to have a growth rate of 12 percent, computed as
5 follows:

$$6 \quad .80 \times 15\% = 12\%$$

7 On the other hand, another company that is also expected to earn 15 percent but only
8 retains 20 percent of its earnings might be expected to have a growth rate of 3 percent,
9 computed as follows:

$$10 \quad .20 \times 15\% = 3\%$$

11 Thus, the rate of growth in a firm's book value per share is primarily determined by the
12 level of earnings and the proportion of earnings retained in the company.

13 The “br + sv” form of the sustainable growth estimate is meant to reflect growth from
14 both internally generated funds (i.e., the “br” term) and from issuances of equity (i.e., the
15 “sv” term), as shown in Equation [7] below. As noted above, the first term, which is the
16 product of the retention ratio (i.e., “b”) and the expected Return on Equity (i.e., “r”) represents the portion of net income that is “plowed back” into the company as a means
17 of funding growth. The “sv” term, which represents growth from external capital, often
18 is represented as:
19

$$20 \quad \left(\frac{m}{b} - 1\right) \times \text{Common Shares growth rate [7]}$$

21 where:

1 $\frac{m}{b}$ = the market to book ratio.

2 In this form, the “sv” term reflects an element of growth as the product of (1) the growth
3 in shares outstanding, and (2) that portion of the market-to-book ratio that exceeds unity.

4 Value Line publishes forecasts of data that can be used to estimate the retention rates that
5 its analysts expect individual companies to have three to five years in the future. Since these
6 retention rates are projected to occur several years in the future, they should be indicative of
7 a normal expectation for a primary underlying determinant of growth that would be
8 sustainable indefinitely beyond the period covered by analysts’ forecasts. While companies
9 may have either accelerating or decelerating growth rates for extended periods of time, the
10 retention growth rates expected to be in effect 3-5 years in the future generally represent a
11 minimum “cruising speed” that companies can be expected to maintain indefinitely.
12 Additionally, Value Line provides forecasts of the expansion in shares outstanding and
13 estimates of the U.S. gas distribution proxy group companies’ market-to-book ratios.

14 Although companies may experience extended periods of growth for other reasons, in the
15 long-run growth in earnings and dividends per share depends in part on the amount of
16 earnings that is being retained and reinvested in a company. Thus, the primary
17 determinants of growth for the proxy companies will be (i) their ability to find and develop
18 profitable opportunities; (ii) their ability to generate profits that can be reinvested in order
19 to sustain growth; and, (iii) their willingness and inclination to reinvest available profits.
20 Expected future retention rates provide a general measure of these determinants of
21 expected growth, particularly items (ii) and (iii).

1 The derivation of Value Line’s retention growth rate forecasts for the U.S. gas distribution
2 proxy group is shown on Exhibit JMC-7, Schedule 10. As shown in Schedule 10, the
3 mean sustainable growth rate estimate for the U.S. proxy group is 5.52 percent.

4 While it may be more difficult to estimate analysts’ expectations of the terms discussed
5 above (*b and r*) than to estimate “g” based on earnings growth rates, in certain
6 circumstances, it may be appropriate to rely on the sustainable growth rate in addition to
7 analyst projected earnings growth rates to develop an estimate of future growth that
8 fairly represents investors’ expectations of forward-looking growth.

9 **d) Multi-stage DCF Model**

10 **Q: 121 Please describe your Multi-stage DCF model.**

11 A: In order to address some of the limiting assumptions underlying the Constant Growth
12 form of the DCF model, I also considered the results of a multi-period (three-stage)
13 DCF Model. The Multi-stage DCF model tempers the assumption of constant growth
14 in perpetuity in the Constant Growth DCF model with a three-stage approach: near-
15 term, transitional, and long-term growth.

16 The Multi-stage model transitions from near-term growth, (i.e. the average of Value
17 Line, Zacks, SNL Financial and First Call forecasts used in the Constant Growth model)
18 for the first stage (years 1-5) of the analysis, to the long-term forecast of GDP growth
19 for the third stage of the analysis (years 11 and beyond). The second stage, or the
20 transitional stage, connects the near-term growth with the long-term growth for the
21 transitional period by changing the growth rate each year on a pro rata basis. In the
22 terminal stage, the dividend cash flow then grows at the same rate as GDP into

1 perpetuity (or a total of two hundred years in the model). The return on equity is the
 2 internal rate of return based on the stock price today and two hundred years of dividend
 3 payments.

4 The Multi-stage DCF model was applied to both the Canadian and U.S. proxy groups.
 5 The assumptions used with respect to the various model inputs are described in Table
 6 10.

7 **Table 10: Multi-stage DCF Model Assumptions**

Model Input		Stage 1	Stage 2	Stage3
Years	Start	1 – 5	6 – 10	>11
Stock Price and Dividend Yields	30, 90 and 180 day average			
Earnings Growth		EPS growth as average of Value Line and First Call, SNL and Zacks projected growth rates	Transition to Long-term GDP growth on arithmetic average basis	Long-term GDP growth

8 The nominal GDP growth rates for both proxy groups were developed using available
 9 data for each country from Consensus Economics, Inc. for the period from 2018-2022.
 10 These forecasts are based on real (constant dollar) growth rates and estimates for
 11 inflation. The inflation estimate was applied to the estimate of real GDP growth to
 12 develop the nominal (post-inflation) GDP growth rate. The estimates of nominal GDP
 13 growth that were utilized are summarized below:

1

Table 11: Estimates of Nominal GDP Growth ¹²¹

Source	Canada	U.S.
Real GDP Growth	2.0%	2.5%
Inflation	2.0%	2.4%
Nominal GDP Growth	4.04%	4.96%

2

3 **e) DCF Results**

4 **Q: 122 Please summarize your DCF results.**

5 A: The DCF results are shown Table 12 below and on Exhibit JMC-7, Schedules 1 through
6 16. In the Constant Growth and Sustainable Growth DCF analyses, the annual dividend
7 yield is multiplied by the quarterly dividend adjustment factor $(1 + 0.5 \times g)$, and this
8 product is added to the growth rate estimate to arrive at the investor-required return. As
9 shown on the table below, the DCF analyses across all methods indicate an average cost
10 of common equity of 10.0 percent for the Canadian proxy group and 9.3 percent for the
11 U.S. gas distribution proxy group, including an adjustment for flotation costs and
12 financial flexibility.

¹²¹ Consensus Forecasts, for 2018-2022, October 8, 2012.

1

Table 12: DCF Results (including flotation costs)

Market Data Averaging Period	Constant Growth DCF	Sustainable Growth DCF ¹²²	Multi-Stage DCF	Average
Canadian Utility Proxy Group				
30-day	11.3%	N/A	8.7%	10.0%
90-day	11.3%	N/A	8.7%	10.0%
180-day	11.3%	N/A	8.8%	10.0%
Average	11.3%		8.7%	10.0%
U.S. Gas Distribution Proxy Group				
30-day	9.3%	9.6%	9.3%	9.4%
90-day	9.2%	9.4%	9.2%	9.2%
180-day	9.2%	9.5%	9.3%	9.3%
Average	9.2%	9.5%	9.2%	9.3%

2

3

4

5 **7. Flotation Cost Adjustment**6 **Q: 123 What are flotation costs?**

7 A: Flotation costs are the costs associated with the sale of new issues of common equity.

8 These costs include out-of-pocket expenditures for the preparation, filing, underwriting,
9 and other costs of issuance of common equity.10 **Q: 124 Does the investor return requirement that is estimated by a CAPM or DCF**
11 **analysis need to be adjusted for flotation costs in order to estimate the cost of**
12 **capital?**13 A: Yes. Because the purpose of the allowed rate of return in a regulatory proceeding is to
14 estimate the cost of capital the regulated company would incur to raise money in the

¹²² Data for the Sustainable Growth model is unavailable from Value Line for Canadian companies.

1 “primary” markets, an estimate of the returns required by investors in the “secondary”
2 markets must be adjusted for flotation costs in order to provide an estimate of the cost
3 of capital that the regulated company requires.

4 **Q: 125 Has the Régie typically allowed an adjustment for flotation costs and**
5 **financial flexibility?**

6 A: Yes. The Régie has recently determined that an adjustment of between 30 and 50 basis
7 points constitutes a fair and reasonable adjustment to the results obtained from
8 secondary market information. Such an adjustment would also apply in this case, in
9 order for Gaz Métro’s authorized ROE to reflect the risks associated with issuers of
10 equity in the public markets. Therefore, I have adjusted the CAPM and DCF results by
11 30 basis points for flotation costs.

12

13 **IX. CAPITAL STRUCTURE**

14 **Q: 126 What capital structure is Gaz Métro proposing in this proceeding?**

15 A: Gaz Métro is proposing a deemed capital structure consisting of 38.50 percent common
16 equity, 7.50 percent preferred equity, and 54.00 percent long-term debt, which is the
17 capital structure that was approved by the Régie in the company’s last case rate
18 proceeding.

19 **Q: 127 In your view, is Gaz Métro’s proposed equity ratio reasonable?**

20 A: Yes. Gaz Métro’s proposed capital structure is consistent with the deemed equity ratios
21 for the companies in the Canadian proxy group, and is substantially lower than the

1 authorized equity ratios of the gas distribution companies in the U.S. proxy group. On
2 that basis, I believe that Gaz Métro's proposed equity ratio of 38.50 percent is
3 reasonable, if not conservative because of its higher risk. If the estimated cost of equity
4 for the U.S. gas distribution proxy group were adjusted to reflect the difference between
5 Gaz Métro's equity ratio and the average equity ratio for the U.S. proxy group, it would
6 result in an upward adjustment of more than 80 basis points to the authorized ROE.
7 Although I have not proposed an adjustment in this proceeding for the difference in
8 capital structure between Gaz Métro and the U.S. proxy group, my view is that the
9 higher financial risk of Gaz Métro should be considered relative to the U.S. gas
10 distribution companies.

11 **X. OVERALL CONCLUSIONS AND RECOMMENDATIONS**

12 **Q: 128 Please summarize the results of your analyses.**

13 A: The results of my analyses, including flotation costs, are provided in Table 13.

Table 13: Results (including flotation costs)

Capital Asset Pricing Model				
Inputs		CAPM Reconciled		
Risk Free Rate		3.75%		
Beta		0.65		
Market Risk Premium		6.94%		
Sub-Total		8.26%		
Flotation Cost		0.30%		
Sub-Total		8.56%		
Adjustment for Other Models		0.75%		
Total		9.3%		
Discounted Cash Flow				
Market Averaging Period	Constant Growth	Sustainable Growth	Multi-Stage	Average
Canadian Utility Proxy Group				
30-day	11.3%	N/A	8.7%	10.0%
90-day	11.3%	N/A	8.7%	10.0%
180-day	11.3%	N/A	8.8%	10.0%
Average	11.3%		8.7%	10.0%
U.S. Gas Distribution Proxy Group				
30-day	9.3%	9.6%	9.3%	9.4%
90-day	9.2%	9.4%	9.2%	9.2%
180-day	9.2%	9.5%	9.3%	9.3%
Average	9.2%	9.5%	9.3%	9.3%

1 **Q: 129 Considering the various ROE analyses presented in your testimony, what is**
2 **your recommendation with respect to the return on equity for Gaz Métro?**

3 A: Although the CAPM model has been used by experts in the past before the Régie, based
4 on the current capital market conditions and the effect of those conditions on the
5 CAPM model at this time, I believe it is now appropriate to place more weight on the
6 DCF model as the basis for the recommended ROE for Gaz Métro. The Régie has
7 previously recognized that the calculation of the ROE required the need to consider
8 alternative models. As discussed in greater detail in Section VII, I have analyzed the
9 risks of a carefully-selected proxy group of U.S. gas distribution companies and
10 compared those risks to the risks of Gaz Métro. The results of that comparison
11 demonstrate that the U.S. gas distribution proxy group is more comparable to Gaz
12 Métro than the Canadian proxy group. I, therefore, place greater weight on the U.S. gas
13 distribution proxy group in forming the basis of the recommended ROE range.

14 The results produced from the various methods and inputs cover a broad spectrum. This
15 is not surprising given the range of inputs and techniques employed and unprecedented
16 market conditions. All methods are not, however, providing a reasonable estimate for
17 Gaz Métro's cost of equity at this time. As the Régie has confirmed in the past,
18 consistent with the *Hope* decision, it is the end result and not the method that is
19 determinative of a fair return.

20 Based on the results of the analyses discussed above and throughout my testimony, I
21 have concerns with the ability of the CAPM model to produce reasonable results in light
22 of the factors affecting the inputs at this time. Bond yields in Canada and the U.S. have

1 been driven to all time lows, and most would agree below sustainable levels in the longer
2 term. As a result of the financial crisis and recession, utility betas have also been
3 impacted, and market risk premium estimates cover a broad spectrum. There is a
4 substantial gap between historic equity returns and the higher returns implied in current
5 stock market data. These are problems with the CAPM, and in general, in the current
6 market environment.

7 As contained in Table 15 and described in the CAPM section, I have attempted to
8 reconcile for these differences using logic employed by the Régie in the past. I begin
9 with a Canadian risk free rate. The Market Risk Premium I have employed is a
10 combination of both Canadian and U.S. market inputs, including both historic and
11 forward looking estimates. The beta is derived from the U.S. proxy group. I find that a
12 carefully selected U.S. proxy group is more representative of Gaz Métro than the
13 Canadian companies; therefore, the beta from the U.S. companies is more representative.
14 Floatation costs are included consistent with the Régie's past decisions, and finally, I
15 make a 75 basis point adjustment for differences between the CAPM results and the
16 DCF results. This reconciliation is consistent with the Régie's approach factoring in
17 "Adjustment for the Result of Other Models" in the 2012 Gaz Métro rate case. The
18 reconciled CAPM produces a 9.3 percent result, and offers a view into the required
19 adjustment to inputs to achieve a reasonable result in the current environment.

20 Under current market conditions, I believe more weight should be given to the DCF
21 model. The average of my DCF method for the U.S. proxy group produces a relatively
22 tight range of 9.2 percent to 9.5 percent. The Canadian DCF produces a range of 8.7
23 percent to 11.3 percent, which I believe specifies the outer limits of the range for Gaz

1 Métro. Placing principal reliance on the DCF model with U.S. proxy companies, and
2 supported by the results of the Reconciled CAPM, **the estimated cost of equity for**
3 **Gaz Métro is between 9.2 percent and 9.5 percent**, within the broader range of 8.7
4 percent to 11.3 percent.

5 Application of the Régie's formula would produce a 7.92 percent ROE. This would not
6 be within the reasonable range, and in my opinion would not meet the measures of a fair
7 return. It would be below any allowed rate of return for a gas utility in Canada outside
8 Quebec or the U.S., and in the long run would fail to attract equity capital if below the
9 investor's required return.

10 **Q: 130 Does this conclude your testimony?**

11 A: Yes, it does.

Canadian & U.S. Macroeconomic Factors

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[11]	[12]	[13]	[14]
	Total Return on:		Total Return on:		Real GDP Growth		CPI		10-year Gov't Bond		Exports		Unemployment		Currency
	S&P/TSX	S&P 500	S&P/TSX Utilities	S&P 500 Utilities	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada to U.S. / Canadian GDP	U.S. to Canada / U.S. GDP	Canada	U.S.	Exchange Rate (USD / CAD)
1987	5,88	5,25	--	--	4,3	3,2	4,4	3,6	9,50	8,39	17,85	2,32	8,4	6,2	1,33
1988	11,08	16,61	--	--	5,0	4,1	3,9	4,1	9,83	8,85	17,17	2,23	7,4	5,5	1,23
1989	21,37	31,69	--	--	2,6	3,6	5,1	4,8	9,80	8,49	16,42	2,1	7,1	5,3	1,18
1990	-14,8	-3,11	--	--	0,2	1,9	4,8	5,4	10,76	8,55	16,41	1,96	7,7	5,6	1,17
1991	12,02	30,47	--	--	-2,1	-0,2	5,6	4,2	9,42	7,86	15,85	1,87	9,8	6,9	1,15
1992	-1,43	7,62	--	--	0,9	3,4	1,4	3,0	8,05	7,01	17,61	2,10	10,7	7,5	1,21
1993	32,55	10,08	--	--	2,3	2,9	1,9	3,0	7,22	5,87	20,50	2,52	10,8	6,9	1,29
1994	-0,18	1,32	--	--	4,8	4,1	0,1	2,6	8,42	7,09	23,49	3,00	9,6	6,1	1,37
1995	14,53	37,58	--	--	2,8	2,5	2,2	2,8	8,08	6,57	25,38	3,19	8,6	5,6	1,37
1996	28,35	22,96	--	--	1,6	3,7	1,5	3,0	7,20	6,44	26,58	3,13	8,8	5,4	1,36
1997	14,98	33,36	--	--	4,2	4,5	1,7	2,3	6,11	6,35	27,48	3,51	8,4	4,9	1,38
1998	-1,58	28,58	--	--	4,1	4,4	1,0	1,6	5,30	5,26	29,43	3,94	7,7	4,5	1,48
1999	31,71	21,04	--	--	5,5	4,8	1,6	2,2	5,55	5,65	31,46	3,96	7,0	4,2	1,49
2000	7,41	-9,11	--	--	5,2	4,1	2,8	3,4	5,89	6,03	33,35	3,98	6,1	4,0	1,49
2001	-12,57	-11,89	--	--	1,8	1,1	2,5	2,8	5,47	5,02	31,78	3,83	6,5	4,7	1,55
2002	-12,44	-22,10	--	--	2,9	1,8	2,2	1,6	5,29	4,61	30,10	3,77	7,0	5,8	1,57
2003	26,72	28,68	24,96	26,27	1,9	2,5	2,8	2,3	4,79	4,01	27,12	3,02	6,9	6,0	1,40
2004	14,48	10,88	9,42	24,28	3,1	3,5	1,8	2,7	4,59	4,27	27,16	2,75	6,4	5,5	1,30
2005	24,13	4,91	38,30	16,83	3,0	3,1	2,2	3,4	4,05	4,29	26,81	2,49	6,0	5,1	1,21
2006	17,26	15,79	7,01	21,00	2,8	2,7	2,0	3,2	4,22	4,80	24,92	2,25	5,5	4,6	1,13
2007	9,83	5,49	11,80	19,38	2,2	1,9	2,1	2,8	4,28	4,63	23,26	2,07	5,3	4,6	1,07
2008	-33,00	-37,00	-20,46	-28,98	0,7	-0,3	2,4	3,8	3,61	3,66	23,08	2,10	5,3	5,8	1,07
2009	35,05	26,46	19,00	11,92	-2,8	-3,1	0,3	-0,4	3,23	3,26	17,73	1,93	7,4	9,3	1,14
2010	17,61	15,06	18,42	5,46	3,2	2,4	1,8	1,6	3,24	3,22	18,26	1,84	7,1	9,6	1,03
2011	-8,71	2,10	6,47	19,95	2,4	1,8	2,9	3,2	2,78	2,78	19,27	1,84	6,5	9,0	0,99
25-year Avg.	9,61	10,91	--	--	2,50	2,58	2,44	2,92	6,27	5,72	23,54	2,71	7,5	5,9	1,28
10-year Avg.	9,09	5,03	--	--	1,94	1,63	2,05	2,42	4,01	3,95	23,77	2,41	6,3	6,5	1,19
5-year Avg.	4,16	2,42	7,05	5,55	1,14	0,54	1,90	2,20	3,43	3,51	20,32	1,96	6,3	7,7	1,06
Correlation	0,73		0,68		0,85		0,77		0,98		0,89		0,29		--
Consensus Forecasts [15]															
2012					2,00	2,10	1,80	2,10	1,80	1,80			7,30	8,10	0,98
2013					2,00	2,00	1,90	2,00	2,20	2,20			7,20	7,90	0,99
2014					2,30	2,80	2,00	2,30	2,70	2,90					1,02

Notes:

- [1] Source: Bloomberg Professional; includes price appreciation and dividend yield
- [2] Source: Bloomberg Professional; includes price appreciation and dividend yield
- [3] Source: Bloomberg Professional; includes price appreciation and dividend yield, however dividend data for S&P/TSX Utilities not available prior to 2003
- [4] Source: Bloomberg Professional; includes price appreciation and dividend yield
- [5] Source: Statistics Canada; expenditure-based GDP at market prices, chained 2002 prices, seasonally adjusted
- [6] Source: Bloomberg Professional & U.S. Bureau of Economic Analysis; chained 2005 dollars
- [7] Source: Statistics Canada; not seasonally adjusted
- [8] Source: Bureau of Labor Statistics; not seasonally adjusted, U.S. city average, all items
- [9] Source: Bloomberg Professional; data not available prior to 1990
- [10] Source: Bloomberg Professional
- [11] Source: Statistics Canada (exports, merchandise only), U.S. Bureau of Economic Analysis (U.S. GDP), and U.S. Federal Reserve Bank of St. Louis (currency exchange rate)
- [12] Source: Statistics Canada
- [13] Source: U.S. Bureau of Labor Statistics, seasonally adjusted
- [14] Source: U.S. Federal Reserve
- [15] Source: Consensus Forecasts; Survey Date: October 8, 2012

Operating Statistics

U.S. Proxy Group		Utility	State	S&P Credit Rating	Regulated Revenues (million)	Retail Customers	% Industrial Sales	Notes	
AGL Resources Inc.	GAS	Atlanta Gas Light Company	GA	BBB+	561	1 512 949	1,49%		
		Northern Illinois Gas Company	IL	BBB+	2 064	1 932 591	4,42%		
		Elizabethtown Gas	NJ	BBB+	388	270 339	4,42%	[1]	
		Florida City Gas	FL	BBB+	75	101 180	N/A	[1]	
		Chattanooga Gas Company	TN	BBB+	79	61 747	10,70%	[2]	
	Atmos Energy Corporation	ATO	Virginia Natural Gas, Inc.	VA	BBB+	307	278 171	1,93%	[2]
			Atmos Energy Corporation	CO	BBB+	99	110 900	2,76%	[3]
			Atmos Energy Corporation	KS	BBB+	118	128 207	6,95%	[3]
			Atmos Energy Corporation	KY	BBB+	150	173 173	9,60%	[3]
			Atmos Energy Corporation	LA	BBB+	232	343 598	16,45%	[3]
Laclede Group, Inc.	LG	Atmos Energy Corporation	MS	BBB+	245	258 913	12,91%	[3]	
		Atmos Energy Corporation	TN	BBB+	133	130 395	11,64%	[3]	
		Atmos Energy Corporation	TX	BBB+	1 439	1 859 006	5,12%	[3]	
		Laclede Gas Company	MO	A	913	624 936	5,16%		
		New Jersey Resources, Inc.	NJR	NJ	A	886	495 383	0,74%	
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company	OR	A+	723	606 798	10,64%		
		Northwest Natural Gas Company	WA	A+	82	69 769	9,15%		
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc.	NC	A	783	671 041	7,42%		
		Piedmont Natural Gas Company, Inc.	SC	A	143	132 169	13,72%		
		Piedmont Natural Gas Company, Inc.	TN	A	191	166 073	3,42%		
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	BBB+	412	348 868	5,00%		
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	BBB+	748	1 001 108	4,86%		
		Southwest Gas Corporation	CA	BBB+	160	181 644	1,35%		
		Southwest Gas Corporation	NV	BBB+	483	662 249	1,46%		
WGL Holdings Inc.	WGL	Washington Gas Light Company	DC	A+	256	153 642	N/A		
		Washington Gas Light Company	MD	A+	507	439 371	N/A		
		Washington Gas Light Company	VA	A+	478	489 970	N/A		
Canadian Proxy Group		Utility	Province						
Canadian Utilities Limited	CU	ATCO Gas	Alberta	A	732	1 062 927	1,26%	[4]	
Emera Inc.	EMA	Nova Scotia Power Inc.	Nova Scotia	BBB+	1 233	490 000	15,67%		
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc.	Ontario	A-	2 232	1 997 481	4,13%		
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	A-	1 392	851 662	1,60%	[5]	
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.		A-	5 327	N/A	N/A		
Valener Inc.	VNR	Gaz Métro	Quebec	A-	1 501	189 000	30,92%		

Notes:

[1] Parent company S&P credit rating (Pivotal Utility Holdings Inc.)

[2] AGL Resources Inc. S&P credit rating

[3] Atmos Energy Corporation S&P credit rating

[4] Canadian Utilities Limited S&P credit rating

[5] Fortis Inc. S&P credit rating

2011 % Regulated Operating Income and Assets

Company	% Operating Income	% Assets
AGL Resources Inc.	92%	79%
Atmos Energy Corporation	76%	97%
Laclede Group, Inc.	78%	92%
New Jersey Resources Inc.	83%	73%
Northwest Natural Gas Company	94%	89%
Piedmont Natural Gas Company, Inc.	100%	97%
South Jersey Industries, Inc.	84%	72%
Southwest Gas Corporation	86%	95%
WGL Holdings Inc.	68%	89%
U.S. Proxy Group Average	85%	87%

Company	% Operating Income	% Assets
Canadian Utilities Limited	60%	68%
Emera Inc.	98%	82%
Enbridge Inc.	22%	22%
Fortis Inc.	91%	91%
TransCanada Corporation	NA	NA
Canadian Proxy Group Average	68%	66%

Gas Supply Risk

U.S. Proxy Group		Utility	State	PGA	Incentives	Margin		# of Customers
						Share		
AGL Resources Inc.	GAS	Atlanta Gas Light Company [1]	GA	N/A	N	N		1 512 949
		Northern Illinois Gas Company	IL	Monthly	N	N		1 932 591
		Elizabethtown Gas	NJ	Monthly	N	Y		270 339
		Florida City Gas	FL	Monthly	N	N		101 180
		Chattanooga Gas Company	TN	Monthly	N	Y		61 747
		Virginia Natural Gas, Inc.	VA	Quarterly	Y	N		278 171
Atmos Energy Corporation	ATO	Atmos Energy Corporation	CO	Annually	N	N		110 900
		Atmos Energy Corporation	KS	Monthly	N	N		128 207
		Atmos Energy Corporation	KY	Monthly	Y	N		173 173
		Atmos Energy Corporation	LA	Monthly	N	N		343 598
		Atmos Energy Corporation	MS	Monthly	N	N		258 913
		Atmos Energy Corporation	TN	Monthly	Y	N		130 395
		Atmos Energy Corporation	TX	Monthly	N	N		1 859 006
		Atmos Energy Corporation	MO	Quarterly	Y	Y		624 936
Laclede Group, Inc.	LG	Laclede Gas Company	MO	Quarterly	Y	Y		624 936
New Jersey Resources, Inc.	NJR	New Jersey Natural Gas	NJ	Monthly	N	Y		495 383
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company [2]	OR	Annually	Y	N		606 798
		Northwest Natural Gas Company	WA	Annually	N	N		69 769
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc. [3]	NC	Annually	N	Y		671 041
		Piedmont Natural Gas Company, Inc.	SC	Annually	N	N		132 169
		Piedmont Natural Gas Company, Inc.	TN	Annually	Y	N		166 073
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	Monthly	N	Y		348 868
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	Monthly	N	Y		1 001 108
		Southwest Gas Corporation	CA	Monthly	N	N		181 644
		Southwest Gas Corporation	NV	Quarterly	N	N		662 249
		Southwest Gas Corporation	DC	Quarterly	N	N		153 642
WGL Holdings Inc.	WGL	Washington Gas Light Company	DC	Quarterly	N	N		153 642
		Washington Gas Light Company	MD	Quarterly	N	Y		439 371
		Washington Gas Light Company	VA	Quarterly	N	N		489 970
Canadian Proxy Group								
		Utility	Province					
Canadian Utilities Limited	CU	ATCO Gas [1]	Alberta	N/A	N	N		1 062 927
Emera Inc.	EMA	Nova Scotia Power Inc. [4]	Nova Scotia	Annually	Y	N		490 000
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc.	Ontario	Quarterly	N	N		1 997 481
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	Quarterly	N	Y		851 662
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.						
Valener Inc.	VNR	Gaz M�tro	Quebec	Monthly	N	N		189 000

	U.S.	Canada
Total Number of Customers	11 691 241	3 339 143
Percent with Monthly PGA	62,32%	0,00%
Percent with Quarterly PGA	22,65%	85,33%
Percent with Annual PGA	15,03%	14,67%
Percent with Incentive	16,93%	14,67%
Percent with Margin Share	33,47%	25,51%

Notes:

[1] Not responsible for the provision of the natural gas commodity to customers

[2] Out of cycle adjustment permitted if cost of gas changes by more than 10%; Northwest Natural Gas Company filed three adjustments in 2011

[3] Piedmont Natural Gas Company, Inc. filed two out of cycle adjustments for purchased gas costs in 2011 in North Carolina

[4] Nova Scotia Power Inc. is an electric generation, transmission and distribution utility.

Volume/Demand Risk

U.S. Proxy Group	Utility	State	Decoupling	SFV Rates	Weather		# of Customers	
					Norm			
AGL Resources Inc.	GAS	Atlanta Gas Light Company	GA	N	Y	N	1 512 949	
		Northern Illinois Gas Company	IL	N	Y	N	1 932 591	
		Elizabethtown Gas	NJ	N	N	Y	270 339	
		Florida City Gas	FL	Y	N	Y	101 180	
		Chattanooga Gas Company	TN	Y	N	Y	61 747	
Atmos Energy Corporation	ATO	Virginia Natural Gas, Inc.	VA	Y	N	Y	278 171	
		Atmos Energy Corporation	CO	N	N	N	110 900	
		Atmos Energy Corporation	KS	N	N	Y	128 207	
		Atmos Energy Corporation	KY	N	N	Y	173 173	
		Atmos Energy Corporation [1]	LA	Y	N	Y	343 598	
		Atmos Energy Corporation [1]	MS	Y	N	Y	258 913	
Laclede Group, Inc.	LG	Atmos Energy Corporation	TN	N	N	Y	130 395	
		Atmos Energy Corporation [1]	TX	Y	N	Y	1 859 006	
		Laclede Gas Company	MO	N	Y	N	624 936	
		New Jersey Resources, Inc.	NJR	NJ	Y	N	Y	495 383
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company	OR	Y	N	Y	606 798	
		Northwest Natural Gas Company	WA	N	N	N	69 769	
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc.	NC	Y	N	Y	671 041	
		Piedmont Natural Gas Company, Inc. [2]	SC	N	N	Y	132 169	
		Piedmont Natural Gas Company, Inc.	TN	N	N	Y	166 073	
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	Y	N	Y	348 868	
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	Y	N	Y	1 001 108	
		Southwest Gas Corporation	CA	Y	N	Y	181 644	
		Southwest Gas Corporation	NV	Y	N	Y	662 249	
WGL Holdings Inc.	WGL	Washington Gas Light Company	DC	N	N	N	153 642	
		Washington Gas Light Company	MD	Y	N	Y	439 371	
		Washington Gas Light Company	VA	Y	N	Y	489 970	
Canadian Proxy Group		Utility	Province					
Canadian Utilities Limited	CU	ATCO Gas	Alberta	N	N	Y	1 062 927	
Emera Inc.	EMA	Nova Scotia Power Inc.	Nova Scotia	N	N	N	490 000	
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc. [3]	Ontario	Y	N	N	1 997 481	
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	Y	N	Y	851 662	
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.						
Valener Inc.	VNR	Gaz Métro	Quebec	Y	N	Y	189 000	
							U.S.	Canada
Total Number of Customers							13 204 190	4 402 070
Percent with Decoupling							59,06%	64,72%
Percent with SFV Rates							30,83%	0,00%
Percent with Weather Normalization							66,64%	43,49%

Notes:

- [1] The company has a formula rate plan or revenue stabilization plan that includes protection against volumetric risk
[2] In South Carolina, Piedmont Natural Gas Company, Inc. operates under rate stabilization plan that achieves margin decoupling with one year lag
[3] Enbridge Gas Distribution Inc. has weather normalization as part of its earnings sharing mechanism, but it is not protected against weather variation in base rates

Capital Cost Recovery Risk

U.S. Proxy Group		Utility	State	CWIP	AFUDC	Pre-Approval	Cost Tracker	# of Customers
AGL Resources Inc.	GAS	Atlanta Gas Light Company	GA	N	Y	N	Y	1 512 949
		Northern Illinois Gas Company	IL	N	Y	N	N	1 932 591
		Elizabethtown Gas	NJ	N	Y	N	Y	270 339
		Florida City Gas	FL	N	Y	Y	Y	101 180
		Chattanooga Gas Company	TN	Y	Y	N	N	61 747
Atmos Energy Corporation	ATO	Virginia Natural Gas, Inc.	VA	N	Y	N	Y	278 171
		Atmos Energy Corporation	CO	N	Y	N	N	110 900
		Atmos Energy Corporation	KS	N	Y	N	Y	128 207
		Atmos Energy Corporation	KY	Y	N	N	Y	173 173
		Atmos Energy Corporation	LA	Y	Y	N	N	343 598
		Atmos Energy Corporation	MS	N	Y	N	N	258 913
		Atmos Energy Corporation	TN	Y	Y	N	N	130 395
		Atmos Energy Corporation	TX	N	Y	N	Y	1 859 006
Laclede Group, Inc.	LG	Laclede Gas Company	MO	N	Y	N	Y	624 936
New Jersey Resources, Inc.	NJR	New Jersey Natural Gas	NJ	N	Y	N	Y	495 383
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company	OR	N	Y	N	Y	606 798
		Northwest Natural Gas Company	WA	N	Y	N	N	69 769
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc.	NC	N	Y	Y	N	671 041
		Piedmont Natural Gas Company, Inc.	SC	Y	N	Y	N	132 169
		Piedmont Natural Gas Company, Inc.	TN	Y	Y	N	N	166 073
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	N	Y	N	Y	348 868
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	N	Y	N	Y	1 001 108
		Southwest Gas Corporation	CA	N	Y	N	N	181 644
		Southwest Gas Corporation	NV	N	Y	N	Y	662 249
		Southwest Gas Corporation	WGL	Washington Gas Light Company	DC	N	Y	N
WGL Holdings Inc.	WGL	Washington Gas Light Company	MD	N	Y	N	N	439 371
		Washington Gas Light Company	VA	N	Y	N	Y	489 970
		Washington Gas Light Company	VA	N	Y	N	Y	489 970
Canadian Proxy Group								
		Utility	Province					
Canadian Utilities Limited	CU	ATCO Gas	Alberta	N	Y	N	N	1 062 927
Emera Inc.	EMA	Nova Scotia Power Inc.	Nova Scotia	N	Y	Y	N	490 000
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc.	Ontario	N	Y	N/A	N	1 997 481
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	N	Y	Y	N	851 662
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.						
Valener Inc.	VNR	Gaz Métro	Quebec	N	Y	Y	N	189 000

	U.S.	Canada
Total Number of Customers	13 204 190	4 402 070
Percent with CWIP in Rate Base	7,63%	0,00%
Percent with AFUDC	97,69%	100,00%
Percent with Pre-Approval of Capital Projects	6,85%	30,48%
Percent with Cost Tracking Mechanism for Main Replacement	64,00%	0,00%

Rate Regulation and Earnings Sharing

U.S. Proxy Group		Utility	State	Cost of Svc	Incentive Reg	Formula Rate	ESM	# of Customers
AGL Resources Inc.	GAS	Atlanta Gas Light Company	GA	Y	N	N	N	1 512 949
		Northern Illinois Gas Company	IL	Y	N	N	N	1 932 591
		Elizabethtown Gas	NJ	Y	N	N	N	270 339
		Florida City Gas	FL	Y	N	N	N	101 180
		Chattanooga Gas Company	TN	Y	N	N	N	61 747
Atmos Energy Corporation	ATO	Virginia Natural Gas, Inc.	VA	Y	N	N	N	278 171
		Atmos Energy Corporation	CO	Y	N	N	N	110 900
		Atmos Energy Corporation	KS	Y	N	N	N	128 207
		Atmos Energy Corporation	KY	Y	N	N	N	173 173
		Atmos Energy Corporation	LA	N	N	Y	Y	343 598
		Atmos Energy Corporation	MS	N	N	Y	N	258 913
		Atmos Energy Corporation	TN	Y	N	N	N	130 395
		Atmos Energy Corporation	TX	N	N	Y	N	1 859 006
Laclede Group, Inc.	LG	Laclede Gas Company	MO	Y	N	N	N	624 936
New Jersey Resources, Inc.	NJR	New Jersey Natural Gas	NJ	Y	N	N	N	495 383
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company	OR	Y	N	N	N	606 798
		Northwest Natural Gas Company	WA	Y	N	N	N	69 769
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc.	NC	Y	N	N	N	671 041
		Piedmont Natural Gas Company, Inc.	SC	N	N	Y	N	132 169
		Piedmont Natural Gas Company, Inc.	TN	Y	N	N	N	166 073
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	Y	N	N	N	348 868
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	Y	N	N	N	1 001 108
		Southwest Gas Corporation	CA	Y	N	N	N	181 644
		Southwest Gas Corporation	NV	Y	N	N	N	662 249
		Southwest Gas Corporation	WGL	Washington Gas Light Company	DC	Y	N	N
WGL Holdings Inc.	WGL	Washington Gas Light Company	MD	Y	N	N	N	439 371
		Washington Gas Light Company	VA	Y	N	N	N	489 970
		Washington Gas Light Company	VA	Y	N	N	N	489 970
Canadian Proxy Group		Utility	Province					
Canadian Utilities Limited	CU	ATCO Gas	Alberta	N	Y	N	N	1 062 927
Emera Inc.	EMA	Nova Scotia Power Inc.	Nova Scotia	Y	N	N	N	490 000
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc.	Ontario	N	Y	N	Y	1 997 481
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	Y	N	N	N	851 662
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.						
Valener Inc.	VNR	Gaz Métro	Quebec	N	Y	N	Y	189 000

	U.S.	Canada
Total Number of Customers	13 204 190	4 402 070
Percent with Cost of Service Regulation	80,36%	30,48%
Percent with Incentive Regulation/PBR	0,00%	69,52%
Percent with Formula Rates	19,64%	0,00%
Percent with Earnings Sharing	2,60%	45,38%

Regulatory Lag

U.S. Proxy Group		Utility	State	Test Year	Interim Rates	Rate Case Lag	# of Customers
AGL Resources Inc.	GAS	Atlanta Gas Light Company	GA	Forecast	Emergency	6	1 512 949
		Northern Illinois Gas Company	IL	Forecast	Emergency	11	1 932 591
		Elizabethtown Gas	NJ	Partial	Emergency	9	270 339
		Florida City Gas	FL	Forecast	Y	6	101 180
		Chattanooga Gas Company	TN	Forecast	Emergency	6,5	61 747
Atmos Energy Corporation	ATO	Virginia Natural Gas, Inc.	VA	HKM	Y	10,5	278 171
		Atmos Energy Corporation	CO	HKM	Emergency	6	110 900
		Atmos Energy Corporation	KS	HKM	Emergency	7	128 207
		Atmos Energy Corporation	KY	HKM	Emergency	7	173 173
		Atmos Energy Corporation	LA	HKM	Emergency	N/A	343 598
		Atmos Energy Corporation	MS	Forecast	Emergency	N/A	258 913
		Atmos Energy Corporation	TN	Forecast	Emergency	5	130 395
		Atmos Energy Corporation	TX	HKM	Emergency	4	1 859 006
Laclede Group, Inc.	LG	Laclede Gas Company	MO	Partial	Emergency	8,5	624 936
New Jersey Resources, Inc.	NJR	New Jersey Natural Gas	NJ	Partial	Emergency	10,5	495 383
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company	OR	Forecast	N	10	606 798
		Northwest Natural Gas Company	WA	HKM	Emergency	9	69 769
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc.	NC	HKM	Emergency	7	671 041
		Piedmont Natural Gas Company, Inc.	SC	HKM	Y	6	132 169
		Piedmont Natural Gas Company, Inc.	TN	Forecast	Emergency	5	166 073
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	Partial	Emergency	8	348 868
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	HKM	Y	13	1 001 108
		Southwest Gas Corporation	CA	Forecast	Emergency	11	181 644
		Southwest Gas Corporation	NV	HKM	N	7	662 249
WGL Holdings Inc.	WGL	Washington Gas Light Company	DC	Partial	N	12	153 642
		Washington Gas Light Company	MD	HKM	Emergency	7	439 371
		Washington Gas Light Company	VA	HKM	Y	9,5	489 970
Canadian Proxy Group		Utility	Province				
Canadian Utilities Limited	CU	ATCO Gas	Alberta	Forecast	Y	12	1 062 927
Emera Inc.	EMA	Nova Scotia Power Inc.	Nova Scotia	Forecast	N	6,5	490 000
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc.	Ontario	Forecast	N/A	N/A	1 997 481
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	Forecast	Y	12	851 662
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.					
Valener Inc.	VNR	Gaz M�tro	Quebec	Forecast	Y	N/A	189 000

	U.S.	Canada
Total Number of Customers	13 204 190	4 402 070
Percent with Forecasted Test Year	37,51%	100,00%
Percent with Partially Forecasted Test Year	14,34%	0,00%
Percent with Historical Adjusted Test Year	48,16%	0,00%
Percent with Interim Rates	15,17%	43,49%
Percent with Interim Rates in Financial Emergency	74,06%	0,00%
Rate Case Lag in Months	8,06	10,17

Other Cost Recovery

U.S. Proxy Group		Utility	State	Energy Efficiency	Environ. Compliance	Pipeline Safety & Integrity	Pension Expense	Bad Debt Expense	Interest Rate Tracker	# of Customers
AGL Resources Inc.	GAS	Atlanta Gas Light Company	GA	N	Y	N	N	N	N	1 512 949
		Northern Illinois Gas Company	IL	Y	Y	N	N	Y	N	1 932 591
		Elizabethtown Gas	NJ	Y	Y	N	N	N	N	270 339
		Florida City Gas	FL	Y	N	N	N	N	N	101 180
		Chattanooga Gas Company	TN	N	N	N	N	Y	N	61 747
		Virginia Natural Gas, Inc.	VA	Y	N	N	N	Y	N	278 171
Atmos Energy Corporation	ATO	Atmos Energy Corporation	CO	Y	N	N	N	Y	N	110 900
		Atmos Energy Corporation	KS	N	N	N	N	Y	N	128 207
		Atmos Energy Corporation	KY	Y	Y	Y	N	Y	N	173 173
		Atmos Energy Corporation	LA	N	N	N	Y	N	N	343 598
		Atmos Energy Corporation	MS	N	N	N	Y	N	N	258 913
		Atmos Energy Corporation	TN	N	Y	N	N	Y	N	130 395
		Atmos Energy Corporation	TX	Y	N	Y	N	Y	N	1 859 006
Laclede Group, Inc.	LG	Laclede Gas Company	MO	Y	N	N	Y	N	N	624 936
New Jersey Resources, Inc.	NJR	New Jersey Natural Gas	NJ	Y	Y	Y	N	N	N	495 383
Northwest Natural Gas Company	NWN	Northwest Natural Gas Company	OR	Y	Y	Y	Y	Y	N	606 798
		Northwest Natural Gas Company	WA	Y	Y	N	N	Y	N	69 769
Piedmont Natural Gas Company, Inc.	PNY	Piedmont Natural Gas Company, Inc.	NC	N	N	Y	N	Y	N	671 041
		Piedmont Natural Gas Company, Inc.	SC	Y	N	N	N	Y	N	132 169
		Piedmont Natural Gas Company, Inc.	TN	N	Y	N	Y	Y	N	166 073
South Jersey Industries, Inc.	SJI	South Jersey Gas Company	NJ	Y	Y	Y	N	N	N	348 868
Southwest Gas Corporation	SWX	Southwest Gas Corporation	AZ	N	N	N	N	N	N	1 001 108
		Southwest Gas Corporation	CA	Y	N	N	N	N	N	181 644
		Southwest Gas Corporation	NV	Y	N	N	N	Y	N	662 249
WGL Holdings Inc.	WGL	Washington Gas Light Company	DC	N	N	N	Y	Y	N	153 642
		Washington Gas Light Company	MD	Y	N	N	N	Y	N	439 371
		Washington Gas Light Company	VA	Y	N	N	N	Y	N	489 970
Canadian Proxy Group		Utility	Province							
Canadian Utilities Limited	CU	ATCO Gas	Alberta	N	N	Y	N	N	N	1 062 927
Emera Inc.	EMA	Nova Scotia Power Inc.	Nova Scotia	Y	Y	N	N	N	N	490 000
Enbridge Inc.	ENB	Enbridge Gas Distribution Inc.	Ontario	Y	Y	Y	Y	N	N	1 997 481
Fortis Inc.	FTS	FortisBC Energy Inc.	BC	Y	N	N	Y	N	Y	851 662
TransCanada Corporation	TRP	TransCanada PipeLines Ltd.								
Valener Inc.	VNR	Gaz Métro	Quebec	Y	N	N	N	Y	Y	189 000

	U.S.	Canada
Total Number of Customers	13 204 190	4 402 070
Percent with Energy Efficiency and DSM Cost Recovery	66,47%	75,85%
Percent with Environmental Compliance Cost Recovery	43,22%	56,51%
Percent with Pipeline Safety and Integrity Cost Recovery	31,46%	69,52%
Percent with Pension Expense Cost Recovery	16,31%	64,72%
Percent with Bad Debt Expense Cost Recovery	61,08%	0,00%
Percent with Interest Rate Tracker for Change in Interest Rates	0,00%	19,35%

U.S. Proxy Group Capital Structure

Company	Ticker	Most Recent Quarter				Last 4 Quarters				Last 8 Quarters			
		Preferred Equity	Common Equity	Current Term Debt	Long Term Debt	Preferred Equity	Common Equity	Current Term Debt	Long Term Debt	Preferred Equity	Common Equity	Current Term Debt	Long Term Debt
AGL Resources Inc.	GAS	0,00%	42,34%	15,95%	41,70%	0,00%	42,75%	13,66%	43,58%	0,00%	42,83%	11,32%	45,85%
Atmos Energy Corporation	ATO	0,00%	48,27%	11,69%	40,04%	0,00%	48,49%	9,60%	41,91%	0,00%	49,29%	7,99%	42,71%
Laclede Group, Inc.	LG	0,00%	59,79%	6,47%	33,73%	0,00%	60,00%	6,29%	33,71%	0,00%	59,33%	5,03%	35,64%
New Jersey Resources, Inc	NJR	0,00%	50,03%	17,68%	32,29%	0,00%	53,18%	17,87%	28,95%	0,00%	53,97%	16,37%	29,65%
Northwest Natural Gas Company	NWN	0,00%	46,74%	11,45%	41,80%	0,00%	48,05%	9,64%	42,31%	0,00%	47,29%	12,65%	40,06%
Piedmont Natural Gas Company, Inc.	PNY	0,00%	47,07%	9,01%	43,92%	0,00%	48,64%	12,56%	38,80%	0,00%	49,87%	14,84%	35,29%
South Jersey Industries, Inc.	SJI	0,00%	43,42%	21,24%	35,34%	0,00%	44,71%	22,38%	32,91%	0,00%	45,95%	21,70%	32,35%
Southwest Gas Corporation	SWX	0,00%	50,10%	0,20%	49,70%	0,00%	49,70%	5,41%	44,88%	0,00%	50,33%	5,34%	44,33%
WGL Holdings Inc.	WGL	0,00%	60,27%	11,76%	27,97%	0,00%	61,95%	9,43%	28,62%	0,00%	62,61%	7,50%	29,89%
Proxy Group Average		0,00%	49,78%	11,72%	38,50%	0,00%	50,83%	11,87%	37,30%	0,00%	51,27%	11,42%	37,31%

Notes:

Data downloaded from SNL Financial. Most recent quarter is Q3 2012.

2011 Credit Metrics

Company	Ticker	Debt to Capital Ratio	EBIT to Interest Coverage	FFO to Interest Coverage	FFO / Debt Ratio	Debt to EBITDA
Gaz Métro LP		63%	2,67	3,83	0,22	4,42
U.S. Proxy Group						
AGL Resources Inc.	GAS [1]	59%	3,29	5,30	0,19	6,01
Atmos Energy Corporation	ATO	52%	3,07	4,65	0,30	3,38
Laclede Group, Inc.	LG	42%	4,66	6,02	0,33	2,94
New Jersey Resources Inc.	NJR	43%	8,08	8,80	0,29	3,10
Northwest Natural Gas Company	NWN	54%	3,55	5,23	0,26	3,84
Piedmont Natural Gas Company, Inc.	PNY	50%	5,22	7,75	0,34	2,94
South Jersey Industries, Inc.	SJI	55%	5,67	7,67	0,25	3,94
Southwest Gas Corporation	SWX	51%	3,52	6,37	0,36	2,76
WGL Holdings Inc.	WGL	36%	6,07	7,60	0,43	2,11
U.S. Proxy Group		49%	4,79	6,60	0,31	3,45
Canadian Proxy Group						
Canadian Utilities Limited	CU	53%	4,07	5,23	0,29	3,14
Emera Inc.	EMA	66%	2,23	4,03	0,22	5,04
Enbridge Inc.	ENB	64%	3,19	4,22	0,20	4,80
Enbridge Gas Distribution Inc.		58%	2,37	3,85	0,20	4,54
Fortis Inc.	FTS	56%	2,24	3,34	0,19	5,22
FortisBC Energy Inc.		49%	1,82	2,41	0,21	4,67
TransCanada Corporation	TRP	54%	3,30	4,63	0,21	4,59
Canadian Proxy Group		57%	2,74	3,96	0,22	4,57

Notes:

Unless otherwise noted, all values are based on holding-company financial data downloaded from SNL Financial

[1] The merger of AGL Resources Inc. and Nicor Inc. was finalized December 9, 2011, and AGL Resources Inc.'s financials reflect their combined results only for the remainder of December 2011. See AGL Resources Inc. 2011 10-K, at 5.

**Capital Asset Pricing Model
Reconciled Approach**

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	
				Industry- Adjusted Value Beta	Industry Index Beta	Mean Market- Adjusted Beta	Average Beta	Risk Free Rate	Average Market Risk Premium	Straight CAPM Calculation	Flotation Cost	"Simple" CAPM	Adjustment for Other Models	Total CAPM	
US Proxy Group	Ticker	Raw Beta	Bloomberg	Line	Beta	Beta	Beta	Beta	Rate	Premium	Calculation	Cost	CAPM	Models	CAPM
AGL Resources Inc.	GAS	0,67	0,78	0,75	0,66	0,65	0,76	0,71	3,75%	6,94%	8,69%	0,30%	8,99%	0,75%	9,74%
Atmos Energy Corporation	ATO	0,63	0,75	0,70	0,63	0,65	0,73	0,68	3,75%	6,94%	8,47%	0,30%	8,77%	0,75%	9,52%
Laclede Group, Inc.	LG	0,50	0,67	0,60	0,55	0,65	0,63	0,59	3,75%	6,94%	7,85%	0,30%	8,15%	0,75%	8,90%
New Jersey Resources Corp.	NJR	0,56	0,71	0,65	0,59	0,65	0,68	0,64	3,75%	6,94%	8,16%	0,30%	8,46%	0,75%	9,21%
Northwest Natural Gas Company	NWN	0,50	0,67	0,55	0,55	0,65	0,61	0,58	3,75%	6,94%	7,76%	0,30%	8,06%	0,75%	8,81%
Piedmont Natural Gas Company, Ir	PNY	0,60	0,74	0,65	0,62	0,65	0,69	0,66	3,75%	6,94%	8,30%	0,30%	8,60%	0,75%	9,35%
South Jersey Industries, Inc.	SJI	0,54	0,69	0,65	0,57	0,65	0,67	0,62	3,75%	6,94%	8,07%	0,30%	8,37%	0,75%	9,12%
Southwest Gas Corporation	SWX	0,80	0,87	0,75	0,75	0,65	0,81	0,78	3,75%	6,94%	9,15%	0,30%	9,45%	0,75%	10,20%
WGL Holdings, Inc.	WGL	0,57	0,72	0,65	0,60	0,65	0,68	0,64	3,75%	6,94%	8,20%	0,30%	8,50%	0,75%	9,25%
MEAN		0,60	0,73	0,66	0,61	0,65	0,70	0,65			8,29%		8,59%		9,34%

Notes:

[1] Source: Bloomberg Professional; average of five years of weekly raw betas as of November 30, 2012

[2] Source: Bloomberg Professional; average of five years of weekly market-adjusted betas

[3] Source: Value Line; dated September 7, 2012

[4] Equals $(2/3) \times [1] + (1/3) \times [5]$

[5] Source: Bloomberg Professional; average of five years of weekly betas for S&P utilities index

[6] Equals mean of [2] and [3]

[7] Equals Average of [4],[6]

[8] Source: Equals average long-term forecast of 10-year Canadian government bond yield for the period 2012-2017 plus the 30-day average spread between 10- and 30-year Canadian bond ending November 30, 2012

[9] Source: Average of the Ibbotson Canada historical risk premium (1936-2012),
Bloomberg; TSX total return less [8] as of December 5, 2012,
Ibbotson US historical risk premium (1926-2012),
Bloomberg; S&P 500 total return less the U.S. Risk Free Rate (4.53%)

[10] Equals [8] + [7] x [9]

[11] Flotation Costs Allowed by the Regie in Past Rate Cases

[12] Equals [10] + [11]

[13] Adjustment for Results of Other Models as Noted by Regie in 2012 Rate Case

[14] Equals [12] + [13]

30-DAY CONSTANT GROWTH DCF -- U.S. PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Zacks EPS Growth	SNL EPS Growth	Value Line EPS Growth	First Call Growth	Average Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
AGL Resources Inc.	GAS	\$1,84	\$39,07	4,71%	4,84%	4,40%	4,00%	8,00%	NA	5,47%	8,80%	10,31%	12,90%
Atmos Energy Corporation	ATO	\$1,40	\$34,97	4,00%	4,11%	6,00%	6,00%	4,00%	5,75%	5,44%	8,08%	9,55%	10,12%
Laclede Group, Inc.	LG	\$1,66	\$40,36	4,11%	4,19%	3,00%	4,00%	2,00%	5,30%	3,58%	6,15%	7,76%	9,52%
New Jersey Resources Corporation	NJR	\$1,60	\$42,20	3,79%	3,86%	3,35%	3,00%	5,50%	2,70%	3,64%	6,54%	7,50%	9,40%
Northwest Natural Gas Company	NWN	\$1,82	\$44,63	4,08%	4,17%	4,17%	4,50%	4,50%	4,50%	4,42%	8,33%	8,59%	8,67%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$30,64	3,92%	4,01%	5,23%	5,80%	2,50%	5,35%	4,72%	6,47%	8,73%	9,83%
South Jersey Industries, Inc.	SJI	\$1,61	\$49,39	3,26%	3,38%	6,00%	8,00%	9,00%	6,00%	7,25%	9,36%	10,63%	12,41%
Southwest Gas Corporation	SWX	\$1,18	\$42,15	2,80%	2,88%	4,97%	6,00%	9,00%	4,05%	6,01%	6,91%	8,89%	11,93%
WGL Holdings, Inc.	WGL	\$1,60	\$38,47	4,16%	4,26%	5,37%	5,00%	3,50%	5,60%	4,87%	7,73%	9,13%	9,88%
MEAN		\$1,55	\$40,21	3,87%	3,97%	4,72%	5,14%	5,33%	4,91%	5,04%	7,60%	9,01%	10,52%
MEDIAN		\$1,60	\$40,36	4,00%	4,11%	4,97%	5,00%	4,50%	5,33%	4,87%	7,73%	8,89%	9,88%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 30-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at November 30, 2012

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

90-DAY CONSTANT GROWTH DCF -- U.S. PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Zacks EPS Growth	SNL EPS Growth	Value Line EPS Growth	First Call Growth	Average Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
AGL Resources Inc.	GAS	\$1,84	\$40,06	4,59%	4,72%	4,40%	4,00%	8,00%	NA	5,47%	8,69%	10,19%	12,78%
Atmos Energy Corporation	ATO	\$1,40	\$35,54	3,94%	4,05%	6,00%	6,00%	4,00%	5,75%	5,44%	8,02%	9,48%	10,06%
Laclede Group, Inc.	LG	\$1,66	\$41,72	3,98%	4,05%	3,00%	4,00%	2,00%	5,30%	3,58%	6,02%	7,63%	9,38%
New Jersey Resources Corporation	NJR	\$1,60	\$44,49	3,60%	3,66%	3,35%	3,00%	5,50%	2,70%	3,64%	6,34%	7,30%	9,19%
Northwest Natural Gas Company	NWN	\$1,82	\$47,64	3,82%	3,90%	4,17%	4,50%	4,50%	4,50%	4,42%	8,07%	8,32%	8,41%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$31,50	3,81%	3,90%	5,23%	5,80%	2,50%	5,35%	4,72%	6,36%	8,62%	9,72%
South Jersey Industries, Inc.	SJI	\$1,61	\$51,17	3,15%	3,26%	6,00%	8,00%	9,00%	6,00%	7,25%	9,24%	10,51%	12,29%
Southwest Gas Corporation	SWX	\$1,18	\$43,27	2,73%	2,81%	4,97%	6,00%	9,00%	4,05%	6,01%	6,83%	8,81%	11,85%
WGL Holdings, Inc.	WGL	\$1,60	\$39,54	4,05%	4,14%	5,37%	5,00%	3,50%	5,60%	4,87%	7,62%	9,01%	9,76%
MEAN		\$1,55	\$41,66	3,74%	3,83%	4,72%	5,14%	5,33%	4,91%	5,04%	7,46%	8,87%	10,38%
MEDIAN		\$1,60	\$41,72	3,82%	3,90%	4,97%	5,00%	4,50%	5,33%	4,87%	7,62%	8,81%	9,76%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 90-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at November 30, 2012

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

180-DAY CONSTANT GROWTH DCF -- U.S. PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Zacks EPS Growth	SNL EPS Growth	Value Line EPS Growth	First Call Growth	Average Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
AGL Resources Inc.	GAS	\$1,84	\$39,25	4,69%	4,82%	4,40%	4,00%	8,00%	NA	5,47%	8,78%	10,28%	12,88%
Atmos Energy Corporation	ATO	\$1,40	\$34,33	4,08%	4,19%	6,00%	6,00%	4,00%	5,75%	5,44%	8,16%	9,63%	10,20%
Laclede Group, Inc.	LG	\$1,66	\$40,44	4,10%	4,18%	3,00%	4,00%	2,00%	5,30%	3,58%	6,15%	7,75%	9,51%
New Jersey Resources Corporation	NJR	\$1,60	\$44,03	3,63%	3,70%	3,35%	3,00%	5,50%	2,70%	3,64%	6,38%	7,34%	9,23%
Northwest Natural Gas Company	NWN	\$1,82	\$46,93	3,88%	3,96%	4,17%	4,50%	4,50%	4,50%	4,42%	8,13%	8,38%	8,46%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$31,21	3,84%	3,94%	5,23%	5,80%	2,50%	5,35%	4,72%	6,39%	8,66%	9,76%
South Jersey Industries, Inc.	SJI	\$1,61	\$50,46	3,19%	3,31%	6,00%	8,00%	9,00%	6,00%	7,25%	9,29%	10,56%	12,33%
Southwest Gas Corporation	SWX	\$1,18	\$43,11	2,74%	2,82%	4,97%	6,00%	9,00%	4,05%	6,01%	6,84%	8,82%	11,86%
WGL Holdings, Inc.	WGL	\$1,60	\$39,63	4,04%	4,14%	5,37%	5,00%	3,50%	5,60%	4,87%	7,61%	9,00%	9,75%
MEAN		\$1,55	\$41,04	3,80%	3,89%	4,72%	5,14%	5,33%	4,91%	5,04%	7,53%	8,94%	10,44%
MEDIAN		\$1,60	\$40,44	3,88%	3,96%	4,97%	5,00%	4,50%	5,33%	4,87%	7,61%	8,82%	9,76%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 180-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at November 30, 2012

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

30-DAY CONSTANT GROWTH DCF -- CANADIAN PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualize			Expected			Value Line		Average			
Company	Ticker	Dividend	Stock Price	Dividend Yield	Dividend Yield	Zacks EPS Growth	SNL EPS Growth	EPS Growth	First Call Growth	Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
Canadian Utilities Limited	CU	\$1,77	\$66,09	2,68%	2,78%	--	7,80%	--	7,80%	7,80%	10,58%	10,58%	10,58%
Emera Inc.	EMA	\$1,40	\$34,47	4,06%	4,18%	--	5,90%	--	6,15%	6,03%	10,08%	10,21%	10,34%
Enbridge Inc.	ENB	\$1,13	\$39,28	2,88%	3,03%	--	10,60%	9,00%	12,00%	10,53%	12,01%	13,56%	15,05%
Fortis Inc.	FTS	\$1,20	\$33,42	3,59%	3,66%	--	3,80%	--	4,35%	4,08%	7,46%	7,74%	8,02%
TransCanada Corporation	TRP	\$1,76	\$44,88	3,92%	4,10%	--	--	10,50%	7,30%	8,90%	11,36%	13,00%	14,63%
MEAN		\$1,45	\$43,63	3,43%	3,55%	--	7,03%	9,75%	7,52%	7,47%	10,30%	11,02%	11,72%
MEDIAN		\$1,40	\$39,28	3,59%	3,66%	--	6,85%	9,75%	7,30%	7,80%	10,58%	10,58%	10,58%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 30-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at December 5, 2012

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

90-DAY CONSTANT GROWTH DCF -- CANADIAN PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualize		Expected		Value Line			Average				
Company	Ticker	Dividend	Stock Price	Dividend Yield	Dividend Yield	Zacks EPS Growth	SNL EPS Growth	EPS Growth	First Call Growth	Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
Canadian Utilities Limited	CU	\$1,77	\$67,69	2,61%	2,72%	--	7,80%	--	7,80%	7,80%	10,52%	10,52%	10,52%
Emera Inc.	EMA	\$1,40	\$34,67	4,04%	4,16%	--	5,90%	--	6,15%	6,03%	10,06%	10,18%	10,31%
Enbridge Inc.	ENB	\$1,13	\$39,32	2,87%	3,03%	--	10,60%	9,00%	12,00%	10,53%	12,00%	13,56%	15,05%
Fortis Inc.	FTS	\$1,20	\$33,35	3,60%	3,67%	--	3,80%	--	4,35%	4,08%	7,47%	7,75%	8,03%
TransCanada Corporation	TRP	\$1,76	\$44,95	3,92%	4,09%	--	--	10,50%	7,30%	8,90%	11,36%	12,99%	14,62%
MEAN		\$1,45	\$44,00	3,41%	3,53%	--	7,03%	9,75%	7,52%	7,47%	10,28%	11,00%	11,70%
MEDIAN		\$1,40	\$39,32	3,60%	3,67%	--	6,85%	9,75%	7,30%	7,80%	10,52%	10,52%	10,52%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 90-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at December 5, 2012

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

180-DAY CONSTANT GROWTH DCF -- CANADIAN PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualize		Expected		Value Line			Average				
Company	Ticker	Dividend	Stock Price	Dividend Yield	Dividend Yield	Zacks EPS Growth	SNL EPS Growth	EPS Growth	First Call Growth	Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
Canadian Utilities Limited	CU	\$1,77	\$67,62	2,62%	2,72%	--	7,80%	--	7,80%	7,80%	10,52%	10,52%	10,52%
Emera Inc.	EMA	\$1,40	\$34,27	4,09%	4,21%	--	5,90%	--	6,15%	6,03%	10,11%	10,23%	10,36%
Enbridge Inc.	ENB	\$1,13	\$39,56	2,86%	3,01%	--	10,60%	9,00%	12,00%	10,53%	11,98%	13,54%	15,03%
Fortis Inc.	FTS	\$1,20	\$33,16	3,62%	3,69%	--	3,80%	--	4,35%	4,08%	7,49%	7,77%	8,05%
TransCanada Corporation	TRP	\$1,76	\$43,94	4,01%	4,18%	--	--	10,50%	7,30%	8,90%	11,45%	13,08%	14,72%
MEAN		\$1,45	\$43,71	3,44%	3,56%	--	7,03%	9,75%	7,52%	7,47%	10,31%	11,03%	11,73%
MEDIAN		\$1,40	\$39,56	3,62%	3,69%	--	6,85%	9,75%	7,30%	7,80%	10,52%	10,52%	10,52%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 180-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at December 5, 2012

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

30-DAY SUSTAINABLE GROWTH DCF -- U.S. PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Zacks EPS Growth	SNL EPS Growth	Value Line EPS Growth	First Call	Sustainable Growth Estimate	Average Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
AGL Resources Inc.	GAS	\$1,84	\$39,07	4,71%	4,84%	4,40%	4,00%	8,00%	NA	5,16%	5,31%	8,80%	10,15%	12,90%
Atmos Energy Corporation	ATO	\$1,40	\$34,97	4,00%	4,09%	6,00%	6,00%	4,00%	5,75%	3,39%	4,41%	7,46%	8,50%	10,12%
Laclede Group, Inc.	LG	\$1,66	\$40,36	4,11%	4,21%	3,00%	4,00%	2,00%	5,30%	5,74%	4,66%	6,15%	8,87%	9,97%
New Jersey Resources Corporation	NJR	\$1,60	\$42,20	3,79%	3,89%	3,35%	3,00%	5,50%	2,70%	7,02%	5,33%	6,54%	9,22%	10,94%
Northwest Natural Gas Company	NWN	\$1,82	\$44,63	4,08%	4,19%	4,17%	4,50%	4,50%	4,50%	6,37%	5,39%	8,33%	9,58%	10,58%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$30,64	3,92%	3,98%	5,23%	5,80%	2,50%	5,35%	1,50%	3,11%	5,45%	7,09%	9,83%
South Jersey Industries, Inc.	SJI	\$1,61	\$49,39	3,26%	3,40%	6,00%	8,00%	9,00%	6,00%	9,88%	8,57%	9,36%	11,97%	13,31%
Southwest Gas Corporation	SWX	\$1,18	\$42,15	2,80%	2,89%	4,97%	6,00%	9,00%	4,05%	6,61%	6,31%	6,91%	9,20%	11,93%
WGL Holdings, Inc.	WGL	\$1,60	\$38,47	4,16%	4,25%	5,37%	5,00%	3,50%	5,60%	4,01%	4,44%	7,73%	8,69%	9,88%
MEAN		\$1,55	\$40,21	3,87%	3,97%	4,72%	5,14%	5,33%	4,91%	5,52%	5,28%	7,42%	9,25%	11,05%
MEDIAN		\$1,60	\$40,36	4,00%	4,09%	4,97%	5,00%	4,50%	5,33%	5,74%	5,31%	7,46%	9,20%	10,58%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 30-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1+(0.5 x [10]))

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at November 30, 2012

[9] Source: Exhibit JMC-7, Schedule 10

[10] Equals 0.5 x Average ([5], [6], [7], [8]) + 0.5 x [9]

[11] Equals [3] x (1 + (0.5 x Minimum ([5], [6], [7], [8], [9]))) + Minimum ([5], [6], [7], [8], [9])

[12] Equals [4] + [10]

[13] Equals [3] x (1 + (0.5 x Maximum ([5], [6], [7], [8], [9]))) + Maximum ([5], [6], [7], [8], [9])

90-DAY SUSTAINABLE GROWTH DCF -- U.S. PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Annualized		Dividend	Expected	Zacks EPS	SNL EPS	Value Line		Sustainable	Average			
Company		Dividend	Stock Price	Yield	Dividend	Growth	Growth	EPS	First Call	Growth	Growth	Low DCF	Mean DCF	High DCF
					Yield			Growth		Estimate	Rate	ROE	ROE	ROE
AGL Resources Inc.	GAS	\$1,84	\$40,06	4,59%	4,72%	4,40%	4,00%	8,00%	NA	5,16%	5,31%	8,69%	10,03%	12,78%
Atmos Energy Corporation	ATO	\$1,40	\$35,54	3,94%	4,03%	6,00%	6,00%	4,00%	5,75%	3,39%	4,41%	7,39%	8,44%	10,06%
Laclede Group, Inc.	LG	\$1,66	\$41,72	3,98%	4,07%	3,00%	4,00%	2,00%	5,30%	5,74%	4,66%	6,02%	8,73%	9,83%
New Jersey Resources Corporation	NJR	\$1,60	\$44,49	3,60%	3,69%	3,35%	3,00%	5,50%	2,70%	7,02%	5,33%	6,34%	9,02%	10,74%
Northwest Natural Gas Company	NWN	\$1,82	\$47,64	3,82%	3,92%	4,17%	4,50%	4,50%	4,50%	6,37%	5,39%	8,07%	9,32%	10,31%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$31,50	3,81%	3,87%	5,23%	5,80%	2,50%	5,35%	1,50%	3,11%	5,34%	6,98%	9,72%
South Jersey Industries, Inc.	SJI	\$1,61	\$51,17	3,15%	3,28%	6,00%	8,00%	9,00%	6,00%	9,88%	8,57%	9,24%	11,85%	13,19%
Southwest Gas Corporation	SWX	\$1,18	\$43,27	2,73%	2,81%	4,97%	6,00%	9,00%	4,05%	6,61%	6,31%	6,83%	9,12%	11,85%
WGL Holdings, Inc.	WGL	\$1,60	\$39,54	4,05%	4,14%	5,37%	5,00%	3,50%	5,60%	4,01%	4,44%	7,62%	8,58%	9,76%
MEAN		\$1,55	\$41,66	3,74%	3,84%	4,72%	5,14%	5,33%	4,91%	5,52%	5,28%	7,28%	9,12%	10,91%
MEDIAN		\$1,60	\$41,72	3,82%	3,92%	4,97%	5,00%	4,50%	5,33%	5,74%	5,31%	7,39%	9,02%	10,31%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 90-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1+(0.5 x [10]))

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at November 30, 2012

[9] Source: Exhibit JMC-7, Schedule 10

[10] Equals 0.5 x Average ([5], [6], [7], [8]) + 0.5 x [9]

[11] Equals [3] x (1 + (0.5 x Minimum ([5], [6], [7], [8], [9]))) + Minimum ([5], [6], [7], [8], [9])

[12] Equals [4] + [10]

[13] Equals [3] x (1 + (0.5 x Maximum ([5], [6], [7], [8], [9]))) + Maximum ([5], [6], [7], [8], [9])

180-DAY SUSTAINABLE GROWTH DCF -- U.S. PROXY GROUP

Company		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Zacks EPS Growth	SNL EPS Growth	Value Line EPS Growth	First Call	Sustainable Growth Estimate	Average Growth Rate	Low DCF ROE	Mean DCF ROE	High DCF ROE
AGL Resources Inc.	GAS	\$1,84	\$39,25	4,69%	4,81%	4,40%	4,00%	8,00%	NA	5,16%	5,31%	8,78%	10,13%	12,88%
Atmos Energy Corporation	ATO	\$1,40	\$34,33	4,08%	4,17%	6,00%	6,00%	4,00%	5,75%	3,39%	4,41%	7,53%	8,58%	10,20%
Laclede Group, Inc.	LG	\$1,66	\$40,44	4,10%	4,20%	3,00%	4,00%	2,00%	5,30%	5,74%	4,66%	6,15%	8,86%	9,96%
New Jersey Resources Corporation	NJR	\$1,60	\$44,03	3,63%	3,73%	3,35%	3,00%	5,50%	2,70%	7,02%	5,33%	6,38%	9,06%	10,78%
Northwest Natural Gas Company	NWN	\$1,82	\$46,93	3,88%	3,98%	4,17%	4,50%	4,50%	4,50%	6,37%	5,39%	8,13%	9,38%	10,37%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$31,21	3,84%	3,90%	5,23%	5,80%	2,50%	5,35%	1,50%	3,11%	5,38%	7,02%	9,76%
South Jersey Industries, Inc.	SJI	\$1,61	\$50,46	3,19%	3,33%	6,00%	8,00%	9,00%	6,00%	9,88%	8,57%	9,29%	11,89%	13,23%
Southwest Gas Corporation	SWX	\$1,18	\$43,11	2,74%	2,82%	4,97%	6,00%	9,00%	4,05%	6,61%	6,31%	6,84%	9,13%	11,86%
WGL Holdings, Inc.	WGL	\$1,60	\$39,63	4,04%	4,13%	5,37%	5,00%	3,50%	5,60%	4,01%	4,44%	7,61%	8,57%	9,75%
MEAN		\$1,55	\$41,04	3,80%	3,90%	4,72%	5,14%	5,33%	4,91%	5,52%	5,28%	7,34%	9,18%	10,98%
MEDIAN		\$1,60	\$40,44	3,88%	3,98%	4,97%	5,00%	4,50%	5,33%	5,74%	5,31%	7,53%	9,06%	10,37%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 90-day average as of November 30, 2012

[3] Equals [1] / [2]

[4] Equals [3] x (1+(0.5 x [10]))

[5] Source: Zacks at November 30, 2012

[6] Source: SNL Financial at November 30, 2012

[7] Source: Value Line

[8] Source: Yahoo! Finance at November 30, 2012

[9] Source: Exhibit JMC-7, Schedule 10

[10] Equals 0.5 x Average ([5], [6], [7], [8]) + 0.5 x [9]

[11] Equals [3] x (1 + (0.5 x Minimum ([5], [6], [7], [8], [9]))) + Minimum ([5], [6], [7], [8], [9])

[12] Equals [4] + [10]

[13] Equals [3] x (1 + (0.5 x Maximum ([5], [6], [7], [8], [9]))) + Maximum ([5], [6], [7], [8], [9])

SUSTAINABLE GROWTH RATE CALCULATION -- U.S. PROXY GROUP

Company	Ticker	Payout Ratio			Average Retention			Return on Common Equity			Average Return on Common Equity		Common Shares Outstanding			Price (2015-17)			Book Value per Share	Market/Book	"S"	"V"	S x V	BR + SV	
		2012	2013	2015-17	Ratio	2012	2013	2015-17	Equity	B*R	2011	2015-17	Growth	High	Low	Mid	2015-17	Ratio							
AGL Resources Inc.	GAS	66,00%	59,00%	48,00%	42,33%	9,00%	10,00%	12,50%	10,50%	4,45%	117,00	122,00	0,84%	70,00	55,00	62,5	33,75	1,85	1,56%	46,00%	0,72%	5,16%			
Atmos Energy Corporation	ATO	61,00%	59,00%	54,00%	42,00%	8,00%	8,00%	8,00%	8,00%	3,36%	90,30	103,00	2,67%	40,00	30,00	35	34,65	1,01	2,69%	1,00%	0,03%	3,39%			
Laclede Group, Inc.	LG	62,00%	63,00%	58,00%	39,00%	10,00%	10,00%	11,50%	10,50%	4,10%	22,43	25,00	2,19%	55,00	40,00	47,5	27,15	1,75	3,84%	42,84%	1,64%	5,74%			
New Jersey Resources Corporation	NJR	53,00%	49,00%	48,00%	50,00%	16,00%	16,50%	14,00%	15,50%	7,75%	41,45	40,00	-0,71%	55,00	45,00	50	24,60	2,03	-1,44%	50,80%	-0,73%	7,02%			
Northwest Natural Gas Company	NWN	73,00%	69,00%	56,00%	34,00%	9,00%	9,50%	12,00%	10,17%	3,46%	26,76	31,00	2,99%	65,00	50,00	57,5	29,10	1,98	5,90%	49,39%	2,91%	6,37%			
Piedmont Natural Gas Company, Inc.	PNY	77,00%	72,00%	72,00%	26,33%	11,50%	12,00%	13,00%	12,17%	3,20%	72,32	68,00	-1,22%	40,00	30,00	35	14,65	2,39	-2,92%	58,14%	-1,70%	1,50%			
South Jersey Industries, Inc.	SJI	54,00%	54,00%	53,00%	46,33%	13,00%	13,00%	15,00%	13,67%	6,33%	30,21	35,00	2,99%	70,00	55,00	62,5	28,55	2,19	6,54%	54,32%	3,55%	9,88%			
Southwest Gas Corporation	SWX	46,00%	45,00%	42,00%	55,67%	9,00%	9,50%	10,50%	9,67%	5,38%	45,96	51,00	2,10%	70,00	45,00	57,5	36,25	1,59	3,34%	36,96%	1,23%	6,61%			
WGL Holdings, Inc.	WGL	62,00%	63,00%	61,00%	38,00%	10,50%	10,00%	10,00%	10,17%	3,86%	51,20	52,00	0,31%	45,00	40,00	42,5	28,85	1,47	0,46%	32,12%	0,15%	4,01%			
MEAN																								5,52%	
MEDIAN																								5,74%	

Notes:

- [1] Source: Value Line; "All Div'ds to Net Prof"
- [2] Source: Value Line; "All Div'ds to Net Prof"
- [3] Source: Value Line; "All Div'ds to Net Prof"
- [4] Equals 1 - Average ([1];[3])
- [5] Source: Value Line; "Return on Com Eq"
- [6] Source: Value Line; "Return on Com Eq"
- [7] Source: Value Line; "Return on Com Eq"
- [8] Equals Average ([5];[7])
- [9] Equals [4] x [6]
- [10] Source: Value Line; "Common Shs Outst'g"
- [11] Source: Value Line; "Common Shs Outst'g"
- [12] Equals ([10] / [11]) ^ 0.2 - 1
- [13] Source: Value Line
- [14] Source: Value Line
- [15] Average ([13], [14])
- [16] Source: Value Line; "Book Value per sh"
- [17] Equals [15] / [16]
- [18] Equals [12] x [17]
- [19] Equals 1 - (1 / [17])
- [20] Equals [18] x [19]
- [21] Equals [9] + [20]

30-DAY MULTI-STAGE DCF -- U.S. PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Annualized		Growth						GDP	
Company	Ticker	Dividend	Stock Price	Rate, Years	Year 6	Year 7	Year 8	Year 9	Year 10	Growth	ROE
				1-5						(perpetuity)	
AGL Resources Inc.	GAS	\$1,84	\$39,07	5,47%	5,38%	5,30%	5,21%	5,13%	5,04%	4,96%	10,06%
Atmos Energy Corporation	ATO	\$1,40	\$34,97	5,44%	5,36%	5,28%	5,20%	5,12%	5,04%	4,96%	9,29%
Laclede Group, Inc.	LG	\$1,66	\$40,36	3,58%	3,81%	4,04%	4,27%	4,50%	4,73%	4,96%	8,91%
New Jersey Resources Corporation	NJR	\$1,60	\$42,20	3,64%	3,86%	4,08%	4,30%	4,52%	4,74%	4,96%	8,61%
Northwest Natural Gas Company	NWN	\$1,82	\$44,63	4,42%	4,51%	4,60%	4,69%	4,78%	4,87%	4,96%	9,09%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$30,64	4,72%	4,76%	4,80%	4,84%	4,88%	4,92%	4,96%	9,01%
South Jersey Industries, Inc.	SJI	\$1,61	\$49,39	7,25%	6,87%	6,49%	6,11%	5,72%	5,34%	4,96%	8,91%
Southwest Gas Corporation	SWX	\$1,18	\$42,15	6,01%	5,83%	5,66%	5,48%	5,31%	5,13%	4,96%	8,09%
WGL Holdings, Inc.	WGL	\$1,60	\$38,47	4,87%	4,88%	4,90%	4,91%	4,93%	4,94%	4,96%	9,30%
MEAN		\$1,55	\$40,21	5,04%	5,03%	5,01%	5,00%	4,99%	4,97%	4,96%	9,03%
MEDIAN		\$1,60	\$40,36	4,87%	4,88%	4,90%	4,91%	4,93%	4,94%	4,96%	9,01%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 30-day average as of November 30, 2012

[3] Source: Exhibit JMC-7, Schedule 1

[4] Equals $[3] - ([3] - [9]) / 6$

[5] Equals $[4] - ([3] - [9]) / 6$

[6] Equals $[5] - ([3] - [9]) / 6$

[7] Equals $[6] - ([3] - [9]) / 6$

[8] Equals $[7] - ([3] - [9]) / 6$

[9] Blue Chip Financial Forecast, Vol. 31, No. 6, June 1, 2012, page 14; <http://www.federalreserve.gov/datadownload/Choose.aspx?rel=h15>.

[10] Internal rate of return

90-DAY MULTI-STAGE DCF -- U.S. PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Annualized Dividend	Stock Price	Growth Rate, Years 1-5	Year 6	Year 7	Year 8	Year 9	Year 10	GDP Growth (perpetuity)	ROE
AGL Resources Inc.	GAS	\$1,84	\$40,06	5,47%	5,38%	5,30%	5,21%	5,13%	5,04%	4,96%	9,93%
Atmos Energy Corporation	ATO	\$1,40	\$35,54	5,44%	5,36%	5,28%	5,20%	5,12%	5,04%	4,96%	9,22%
Laclede Group, Inc.	LG	\$1,66	\$41,72	3,58%	3,81%	4,04%	4,27%	4,50%	4,73%	4,96%	8,78%
New Jersey Resources Corporation	NJR	\$1,60	\$44,49	3,64%	3,86%	4,08%	4,30%	4,52%	4,74%	4,96%	8,42%
Northwest Natural Gas Company	NWN	\$1,82	\$47,64	4,42%	4,51%	4,60%	4,69%	4,78%	4,87%	4,96%	8,83%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$31,50	4,72%	4,76%	4,80%	4,84%	4,88%	4,92%	4,96%	8,90%
South Jersey Industries, Inc.	SJI	\$1,61	\$51,17	7,25%	6,87%	6,49%	6,11%	5,72%	5,34%	4,96%	8,77%
Southwest Gas Corporation	SWX	\$1,18	\$43,27	6,01%	5,83%	5,66%	5,48%	5,31%	5,13%	4,96%	8,01%
WGL Holdings, Inc.	WGL	\$1,60	\$39,54	4,87%	4,88%	4,90%	4,91%	4,93%	4,94%	4,96%	9,18%
MEAN		\$1,55	\$41,66	5,04%	5,03%	5,01%	5,00%	4,99%	4,97%	4,96%	8,89%
MEDIAN		\$1,60	\$41,72	4,87%	4,88%	4,90%	4,91%	4,93%	4,94%	4,96%	8,83%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 90-day average as of November 30, 2012

[3] Source: Exhibit JMC-7, Schedule 1

[4] Equals $[3] - ([3] - [9]) / 6$

[5] Equals $[4] - ([3] - [9]) / 6$

[6] Equals $[5] - ([3] - [9]) / 6$

[7] Equals $[6] - ([3] - [9]) / 6$

[8] Equals $[7] - ([3] - [9]) / 6$

[9] Blue Chip Financial Forecast, Vol. 31, No. 6, June 1, 2012, page 14; <http://www.federalreserve.gov/datadownload/Choose.aspx?rel=h15>.

[10] Internal rate of return

180-DAY MULTI-STAGE DCF -- U.S. PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Annualized		Growth						GDP	
Company	Ticker	Dividend	Stock Price	Rate, Years	Year 6	Year 7	Year 8	Year 9	Year 10	Growth	ROE
				1-5						(perpetuity)	
AGL Resources Inc.	GAS	\$1,84	\$39,25	5,47%	5,38%	5,30%	5,21%	5,13%	5,04%	4,96%	10,03%
Atmos Energy Corporation	ATO	\$1,40	\$34,33	5,44%	5,36%	5,28%	5,20%	5,12%	5,04%	4,96%	9,37%
Laclede Group, Inc.	LG	\$1,66	\$40,44	3,58%	3,81%	4,04%	4,27%	4,50%	4,73%	4,96%	8,90%
New Jersey Resources Corporation	NJR	\$1,60	\$44,03	3,64%	3,86%	4,08%	4,30%	4,52%	4,74%	4,96%	8,46%
Northwest Natural Gas Company	NWN	\$1,82	\$46,93	4,42%	4,51%	4,60%	4,69%	4,78%	4,87%	4,96%	8,89%
Piedmont Natural Gas Company, Inc.	PNY	\$1,20	\$31,21	4,72%	4,76%	4,80%	4,84%	4,88%	4,92%	4,96%	8,93%
South Jersey Industries, Inc.	SJI	\$1,61	\$50,46	7,25%	6,87%	6,49%	6,11%	5,72%	5,34%	4,96%	8,83%
Southwest Gas Corporation	SWX	\$1,18	\$43,11	6,01%	5,83%	5,66%	5,48%	5,31%	5,13%	4,96%	8,02%
WGL Holdings, Inc.	WGL	\$1,60	\$39,63	4,87%	4,88%	4,90%	4,91%	4,93%	4,94%	4,96%	9,17%
MEAN		\$1,55	\$41,04	5,04%	5,03%	5,01%	5,00%	4,99%	4,97%	4,96%	8,96%
MEDIAN		\$1,60	\$40,44	4,87%	4,88%	4,90%	4,91%	4,93%	4,94%	4,96%	8,90%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 180-day average as of November 30, 2012

[3] Source: Exhibit JMC-7, Schedule 1

[4] Equals $[3] - ([3] - [9]) / 6$

[5] Equals $[4] - ([3] - [9]) / 6$

[6] Equals $[5] - ([3] - [9]) / 6$

[7] Equals $[6] - ([3] - [9]) / 6$

[8] Equals $[7] - ([3] - [9]) / 6$

[9] Blue Chip Financial Forecast, Vol. 31, No. 6, June 1, 2012, page 14; <http://www.federalreserve.gov/datadownload/Choose.aspx?rel=h15>.

[10] Internal rate of return

30-DAY MULTI-STAGE DCF -- CANADIAN PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Annualized Dividend	Stock Price	Growth Rate, Years 1-5	Year 6	Year 7	Year 8	Year 9	Year 10	GDP Growth (perpetuity)	ROE
Canadian Utilities Limited	CU	\$1,77	\$66,09	7,80%	7,17%	6,55%	5,92%	5,29%	4,67%	4,04%	7,58%
Emera Inc.	EMA	\$1,40	\$34,47	6,03%	5,69%	5,36%	5,03%	4,70%	4,37%	4,04%	8,82%
Enbridge Inc.	ENB	\$1,13	\$39,28	10,53%	9,45%	8,37%	7,29%	6,20%	5,12%	4,04%	8,51%
Fortis Inc.	FTS	\$1,20	\$33,42	4,08%	4,07%	4,06%	4,06%	4,05%	4,05%	4,04%	7,78%
TransCanada Corporation	TRP	\$1,76	\$44,88	8,90%	8,09%	7,28%	6,47%	5,66%	4,85%	4,04%	9,51%
MEAN		\$1,45	\$43,63	7,47%	6,90%	6,32%	5,75%	5,18%	4,61%	4,04%	8,44%
MEDIAN		\$1,40	\$39,28	7,80%	7,17%	6,55%	5,92%	5,29%	4,67%	4,04%	8,51%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 30-day average as of November 30, 2012

[3] Source: Exhibit JMC-7, Schedule 1

[4] Equals $[3] - ([3] - [9]) / 6$

[5] Equals $[4] - ([3] - [9]) / 6$

[6] Equals $[5] - ([3] - [9]) / 6$

[7] Equals $[6] - ([3] - [9]) / 6$

[8] Equals $[7] - ([3] - [9]) / 6$

[9] Consensus Economics Inc., Consensus Forecasts, October 8, 2012

[10] Internal rate of return

90-DAY MULTI-STAGE DCF -- CANADIAN PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Annualized		Growth						GDP	
Company	Ticker	Dividend	Stock Price	Rate, Years	Year 6	Year 7	Year 8	Year 9	Year 10	(perpetuity)	ROE
Canadian Utilities Limited	CU	\$1,77	\$67,69	7,80%	7,17%	6,55%	5,92%	5,29%	4,67%	4,04%	7,50%
Emera Inc.	EMA	\$1,40	\$34,67	6,03%	5,69%	5,36%	5,03%	4,70%	4,37%	4,04%	8,79%
Enbridge Inc.	ENB	\$1,13	\$39,32	10,53%	9,45%	8,37%	7,29%	6,20%	5,12%	4,04%	8,51%
Fortis Inc.	FTS	\$1,20	\$33,35	4,08%	4,07%	4,06%	4,06%	4,05%	4,05%	4,04%	7,79%
TransCanada Corporation	TRP	\$1,76	\$44,95	8,90%	8,09%	7,28%	6,47%	5,66%	4,85%	4,04%	9,51%
MEAN		\$1,45	\$44,00	7,47%	6,90%	6,32%	5,75%	5,18%	4,61%	4,04%	8,42%
MEDIAN		\$1,40	\$39,32	7,80%	7,17%	6,55%	5,92%	5,29%	4,67%	4,04%	8,51%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 90-day average as of November 30, 2012

[3] Source: Exhibit JMC-7, Schedule 1

[4] Equals $[3] - ([3] - [9]) / 6$

[5] Equals $[4] - ([3] - [9]) / 6$

[6] Equals $[5] - ([3] - [9]) / 6$

[7] Equals $[6] - ([3] - [9]) / 6$

[8] Equals $[7] - ([3] - [9]) / 6$

[9] Consensus Economics Inc., Consensus Forecasts, October 8, 2012

[10] Internal rate of return

180-DAY MULTI-STAGE DCF -- CANADIAN PROXY GROUP

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Annualized Dividend	Stock Price	Growth Rate, Years 1-5	Year 6	Year 7	Year 8	Year 9	Year 10	GDP Growth (perpetuity)	ROE
Canadian Utilities Limited	CU	\$1,77	\$67,62	7,80%	7,17%	6,55%	5,92%	5,29%	4,67%	4,04%	7,50%
Emera Inc.	EMA	\$1,40	\$34,27	6,03%	5,69%	5,36%	5,03%	4,70%	4,37%	4,04%	8,85%
Enbridge Inc.	ENB	\$1,13	\$39,56	10,53%	9,45%	8,37%	7,29%	6,20%	5,12%	4,04%	8,48%
Fortis Inc.	FTS	\$1,20	\$33,16	4,08%	4,07%	4,06%	4,06%	4,05%	4,05%	4,04%	7,81%
TransCanada Corporation	TRP	\$1,76	\$43,94	8,90%	8,09%	7,28%	6,47%	5,66%	4,85%	4,04%	9,63%
MEAN		\$1,45	\$43,71	7,47%	6,90%	6,32%	5,75%	5,18%	4,61%	4,04%	8,45%
MEDIAN		\$1,40	\$39,56	7,80%	7,17%	6,55%	5,92%	5,29%	4,67%	4,04%	8,48%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, 180-day average as of November 30, 2012

[3] Source: Exhibit JMC-7, Schedule 1

[4] Equals $[3] - ([3] - [9]) / 6$

[5] Equals $[4] - ([3] - [9]) / 6$

[6] Equals $[5] - ([3] - [9]) / 6$

[7] Equals $[6] - ([3] - [9]) / 6$

[8] Equals $[7] - ([3] - [9]) / 6$

[9] Consensus Economics Inc., Consensus Forecasts, October 8, 2012

[10] Internal rate of return