BEFORE THE

REGIE DE L'ENERGIE

DIRECT TESTIMONY

OF

ROGER A. MORIN, PhD

ON BEHALF OF

GAZ METRO LIMITED PARTNERSHIP

April 2011

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I. INTRODUCTION AND PURPOSE

Q.1 PLEASE STATE YOUR NAME, ADDRESS, AND OCCUPATION.

A. My name is Dr. Roger A. Morin. My business address is Georgia State University, Robinson College of Business, University Plaza, Atlanta, Georgia 30303. I am Emeritus Professor of Finance at the College of Business, Georgia State University and Professor of Finance for Regulated Industry at the Center for the Study of Regulated Industry at Georgia State University. I am also a principal in Utility Research International, an enterprise engaged in regulatory finance and economics consulting to business and government.

Q.2 PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I hold a Bachelor of Engineering degree and an MBA in Finance from McGill University, Montreal, Canada. I received my Ph.D. in Finance and Econometrics at the Wharton School of Finance, University of Pennsylvania.

Q.3 PLEASE SUMMARIZE YOUR ACADEMIC AND BUSINESS CAREER.

A. I have taught at University of Montreal's Hautes Etudes Commerciales, McGill University, the Wharton School of Finance at the University of Pennsylvania, Amos Tuck School of Business at Dartmouth College, Drexel University, and Georgia State University. In addition, I have developed and conducted numerous executive development programs for the University of Montreal, Hydro-Québec, Canadian Institute of Marketing, Investment Dealers Association of Canada, Financial Research Foundation of Canada, and Georgia State University. I was a faculty member of Advanced Management Research International, Management Exchange Inc., and Exnet, Inc., where

I conducted frequent national executive-level education seminars throughout the United States and Canada. I am currently a faculty member of the SNL Center for Financial Education where I continue to conduct national seminars on the topic of regulatory finance. In the last thirty years, I have conducted numerous national seminars on "Utility Finance," "Utility Cost of Capital," "Alternative Regulatory Frameworks," and on "Utility Capital Allocation," which I have developed on behalf of The Management Exchange Inc. and Exnet in conjunction with Public Utilities Reports, Inc.

I have authored or co-authored several books, monographs, and articles in academic scientific journals on the subject of finance. They have appeared in a variety of journals, including The Journal of Finance, The Journal of Business Administration, International Management Review, and Public Utilities Fortnightly. I published a widely-used treatise on regulatory finance, Utilities' Cost of Capital, Public Utilities Reports, Inc., Arlington, Va. 1984. In late 1994, the same publisher released Regulatory Finance, a voluminous treatise on the application of finance to regulated utilities. A revised and expanded edition of this book entitled The New Regulatory Finance was published in August 2006.

I served for three years as a consultant in computer applications in finance and investments for the Financial Research Institute of Canada. I was co-founder and director of the Canadian Finance Research Foundation. I have engaged in extensive consulting activities on behalf of numerous corporations, legal firms, and regulatory bodies in matters of financial management and corporate litigation. Exhibit RAM-1 describes my professional credentials in more detail.

Q.4 HAVE YOU PREVIOUSLY TESTIFIED ON COST OF CAPITAL BEFORE UTILITY REGULATORY BOARDS?

A. Yes, I have been a cost of capital witness in over 200 rate proceedings before nearly fifty (50) regulatory bodies in North America, including the Regie de l'energie, the National Energy Board of Canada, The Canadian Radio-television Telecommunications Commission, the Federal Energy Regulatory Commission, and the Federal Communications Commission. I have testified before the following federal, state, provincial, and other local regulatory commissions:

Alabama	Florida	Missouri	Ontario
Alaska	Georgia	Montana	Oregon
Alberta	Hawaii	Nevada	Pennsylvania
Arizona	Illinois	New Brunswick	Quebec
Arkansas	Indiana	New Hampshire	South Carolina
British Columbia	Iowa	New Jersey	South Dakota
California	Kentucky	New Mexico	Tennessee
City of New Orleans	Louisiana	New York	Texas
Colorado	Maine	Newfoundland	Utah
CRTC	Manitoba	North Carolina	Vermont
Delaware	Maryland	North Dakota	Virginia
District of Columbia	Michigan	Nova Scotia	Washington
Fed CommunicComm	Minnesota	Ohio	West Virginia
Fed Energy RegComm	Mississippi	Oklahoma	

I was involved as an expert witness in several landmark proceedings involving the restructuring of the Canadian telecommunications industry on behalf of the CRTC, the natural gas pipeline industry on behalf of the National Energy Board, and the electric utility industry in the province of New Brunswick. I was also involved as an expert witness in several landmark proceedings involving the restructuring of the U.S. telecommunications industry, and U.S. electric utility industry, notably in California,

Pennsylvania, Mississippi, and Texas. Details of my participation in regulatory proceedings are provided in Exhibit RAM-1.

Q.5 WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony in this proceeding is to present an independent appraisal of: 1) the fair and reasonable rate of return on the common equity ("ROE") capital invested in the natural gas utility operations of Gaz Metro Limited Partnership ("GMLP" or the "Company"), 2) the appropriate capital structure for ratemaking purposes, and 3) the Regie's Formula ROE. Based upon this appraisal, I have formed my professional judgment as to a return on such capital that would: (i) allow the Company to attract capital on reasonable terms, (ii) maintain the Company's financial integrity, and (iii) be comparable to returns offered on comparable risk investments. I have also formed my professional judgment as to the appropriateness of the Company's requested capital structure consisting of 42.5% common equity capital for ratemaking purposes. Finally, I offer some comments on the Regie's Formula ROE.

This testimony and accompanying exhibits and appendices were prepared by me or under my direct supervision and control. The source documents for my testimony are Company records, public documents, commercial data sources, and my personal knowledge, experience, and informed judgment.

Q.6 PLEASE BRIEFLY IDENTIFY THE EXHIBITS AND APPENDICES ACCOMPANYING YOUR TESTIMONY.

A. I have attached to my testimony Exhibit RAM-1 through Exhibit RAM-15 and Appendices A and B. These Exhibits and Appendices listed below relate directly to

points in my testimony, and are described in further detail in connection with the discussion of those points in my testimony.

Exhibit RAM-1	Resume of Roger A. Morin
Exhibit RAM-2	Beta Estimates
Exhibit RAM-3	Energy Utility Industry Historical Risk Premium
Exhibit RAM-4	Natural Gas Utility Industry Historical Risk Premium
Exhibit RAM-5	Allowed Risk Premiums
Exhibit RAM-6	Natural Gas Utilities - DCF Analysis: Analysts' Growth Forecasts
Exhibit RAM-7	Natural Gas Utilities - DCF Analysis: Value Line Growth Forecasts
Exhibit RAM-8	Combination Gas & Electric Utilities - DCF Analysis: Value Line Growth Projections
Exhibit RAM-9	Combination Gas & Electric Utilities - DCF Analysis: Analysts' Growth Forecasts
Exhibit RAM-10	Deemed Common Equity Ratios Canadian Utilities
Exhibit RAM-11	Deemed Common Equity Ratios U.S. Natural Gas Utilities
Exhibit RAM-12	Actual Common Equity Ratios U.S. Natural Gas Utilities
Exhibit RAM-13	Actual Common Equity Ratios U.S. Combination Gas & Electric Utilities
Exhibit RAM-14	AUS Utility Reports: Actual Common Equity Ratios U.S. Natural Gas Utilities
Exhibit RAM-15	AUS Utility Reports: Actual Common Equity Ratios U.S. Combination Gas & Electric Utilities
Appendix A	CAPM and Empirical CAPM
Appendix B	Flotation Cost Allowance

Q.7 PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATION.

A. Based on the results of various methodologies, I recommend the adoption of a ROE of 10.2% assuming a deemed common equity ratio of 38.5% and 9.8% assuming adoption of the Company's proposed 42.5% common equity ratio for ratemaking purposes in 2012. A rate of return of this magnitude is required in order for the Company to: (i) attract capital on reasonable terms, (ii) maintain its financial integrity, and (iii) earn a return commensurate with returns on comparable risk investments. My ROE recommendation is derived from cost of capital studies that I performed using the financial models available to me and from the application of my professional judgment to the results obtained in light of GMLP's long-term investment risks and economic environment. I applied various cost of capital methodologies to several surrogates for GMLP, including: investment-grade Canadian energy utilities, natural gas distribution utilities, and combination gas and electric utilities. I have also surveyed and analyzed the historical risk premiums in the utility industry and risk premiums allowed by regulators on comparable risk companies as indicators of the appropriate risk premium for GMLP. My recommended rate of return reflects the application of my professional judgment to the results in light of the indicated returns from my Risk Premium, Capital Asset Pricing Model ("CAPM"), and Discounted Cash Flow ("DCF") analyses.

I have also concluded that the Company's requested capital structure consisting of 42.5% common equity capital is fair, reasonable, consistent with the capital structures of its peers, and reflective of the Company's business risks.

Q.8 WOULD IT BE IN THE BEST INTERESTS OF CUSTOMERS FOR THE REGIE TO ADOPT YOUR RECOMMENDED 9.8% ROE and 42.5% COMMON EQUITY RATIO FOR GMLP?

A. Yes. My analysis shows that a ROE of 9.8% combined with a common equity ratio of 42.5% are required to fairly compensate investors, and to strengthen the Company's credit position. Adopting a lower ROE and lower common equity ratio would increase costs for GMLP's ratepayers.

Q.9 PLEASE EXPLAIN HOW LOW AUTHORIZED ROEs CAN INCREASE BOTH THE FUTURE COST OF EQUITY AND DEBT FINANCING.

A. If a utility is authorized a ROE below the level required by equity investors, the utility will find it difficult to access the equity market through common stock issuance at its current market price. Investors will not provide equity capital at the current market price if the earnable ROE is below the level they require given the risks of an equity investment in the utility. The equity market corrects this by generating a stock price in equilibrium that reflects the valuation of the potential earnings stream from an equity investment at the risk-adjusted return equity investors require. In the case of a utility that has been authorized a return below the level that investors believe is appropriate for the risk they bear, the result is a decrease in the utility's market price per share of common stock. This reduces the financial viability of equity financing in two ways. First, because the utility's price per share of common stock decreases, the net proceeds from issuing common stock are reduced. Second, because the utility's market to book ratio decreases with the decrease in the share price of common stock, the potential risk from dilution of

equity investments reduces investors' inclination to purchase new issues of common stock. The ultimate effect is the utility will have to rely more on debt financing to meet its capital needs.

As the Company relies more on debt financing, its capital structure becomes more leveraged. Because debt payments are a fixed financial obligation to the utility, and income available to common equity is subordinate to fixed charges, this decreases the operating income available for dividend and earnings growth. Consequently, equity investors face even greater uncertainty about future dividends and earnings from the firm. As a result, the firm's equity becomes a riskier investment. The risk of default on the Company's bonds also increases, making the utility's debt a riskier investment. This increases the cost to the utility from both debt and equity financing and increases the possibility the Company will not have access to the capital markets for its outside financing needs. Ultimately, to ensure that GMLP has access to capital markets for its capital needs, a fair and reasonable authorized ROE of 9.8% and a capital structure consisting of 42.5% common equity capital are required.

It is imperative the Company have access to capital funds at reasonable terms and conditions. The Company must secure outside funds from capital markets to finance new infrastructure, irrespective of capital market conditions, interest rate conditions and the quality consciousness of market participants. Because the Company will need to rely on capital markets, rate relief requirements and a supportive regulatory environment - including approval of my recommended ROE and capital structure - are essential requirements.

Q.10 DR. MORIN, PLEASE DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.

A. The remainder of my testimony is divided into five more sections:

II. Regulatory Framework and Rate of Return;

III. Cost of Equity Estimates;

IV. Capital Structure:

V. Formula Return on Equity, and

VI. Summary and Recommendations.

The second section discusses the rudiments of rate of return regulation and the basic notions underlying rate of return. The third section contains the application of CAPM, Risk Premium, and DCF tests. The fourth section discusses the notion of a cost efficient capital structure. The fifth section offers some brief comments on the Formula ROE. The sixth section summarizes the results from the various approaches used in determining a fair return and capital structure.

II. REGULATORY FRAMEWORK AND RATE OF RETURN

Q.11 WHAT ECONOMIC AND FINANCIAL CONCEPTS HAVE GUIDED YOUR ASSESSMENT OF GMLP'S COST OF COMMON EQUITY?

A. Two fundamental economic principles underlie the appraisal of the Company's cost of equity, one relating to the supply side of capital markets, the other to the demand side. According to the first principle, a rational investor is maximizing the performance of his portfolio only if he expects the returns earned on investments of comparable risk to be the same. If not, the rational investor will switch out of those investments yielding lower

returns at a given risk level in favor of those investment activities offering higher returns for the same degree of risk. This principle implies that a company will be unable to attract the capital funds it needs to meet its service demands and to maintain financial integrity unless it can offer returns to capital suppliers that are comparable to those achieved on competing investments of similar risk. On the demand side, the second principle asserts that a company will continue to invest in real physical assets if the return on these investments exceeds or equals the company's cost of capital. This concept suggests that a regulatory authority should set rates at a level sufficient to create equality between the return on physical asset investments and the company's cost of capital.

Q.12 PLEASE EXPLAIN THE STAND-ALONE PRINCIPLE.

A. I am treating GMLP's natural gas delivery operations as a separate stand-alone entity because it is the cost of capital for GMLP's natural gas utility business that we are attempting to measure and not the cost of capital for the company's other activities or its parent's consolidated activities. The basic idea of the stand-alone principle is that the cost of capital incurred by ratepayers should be the same as what would be incurred by the Company raising capital on its own. The stand-alone principle is also consistent with financial theory. Financial theory establishes that the true cost of capital depends on the use to which the capital is put, in this case GMLP's natural gas delivery operations. The specific source of funding an investment and the cost of funds to the investor are irrelevant considerations.

For example, if an individual investor borrows money at the bank at an after-tax cost of 8% and invests the funds in a speculative oil extraction venture, the required

return on the investment is not the 8% cost but, rather, the return foregone in speculative projects of similar risk, say 20%. Similarly, the required return on GMLP is the return foregone in comparable risk energy delivery operations, and is unrelated to the parent's cost of capital. The cost of capital is governed by the risk to which the capital is exposed and not by the source of funds. The identity of the shareholders has no bearing on the cost of equity, be it either individual investors or a parent holding company.

Just as individual investors require different returns from different assets in managing their personal affairs, corporations behave in the same manner. A parent company normally invests money in many operating companies of varying sizes and varying risks. These operating subsidiaries pay different rates for the use of investor capital, such as for long-term debt capital, because investors recognize the differences in capital structure, risk, and prospects between subsidiaries. Thus, the cost of investing funds in an operating utility entity such as GMLP is the return foregone on investments of similar risk and is unrelated to the investor's identity.

Q.13 UNDER TRADITIONAL COST OF SERVICE REGULATION, PLEASE EXPLAIN HOW A REGULATED COMPANY'S RATES SHOULD BE SET.

A. Under the traditional regulatory process, a regulated company's rates should be set so that the company recovers its costs, including taxes and depreciation, plus a fair and reasonable return on its invested capital. The allowed rate of return must necessarily reflect the cost of the funds obtained, that is, investors' return requirements. In determining a company's rate of return, the starting point is investors' return requirements

in financial markets. A rate of return can then be set at a level sufficient to enable the company to earn a return commensurate with the cost of those funds.

Funds can be obtained in two general forms, debt capital and equity capital. The latter consists of both preferred and common equity capital. The cost of debt funds and preferred equity can be easily ascertained from an examination of the contractual interest payments and preferred dividend payments. The cost of common equity funds, that is, equity investors' required rate of return, is more difficult to estimate. It is the purpose of the next section of my testimony to estimate GMLP's cost of common equity capital.

Q.14 WHAT FUNDAMENTAL PRINCIPLES UNDERLIE THE DETERMINATION OF A FAIR AND REASONABLE ROE?

A. The heart of utility regulation is the setting of just and reasonable rates by way of a fair and reasonable return. There are several landmark court cases that define the legal principles underlying the regulation of a public utility's rate of return and provide the foundations for the notion of a fair return. In the setting of rates it was stated by the Supreme Court of Canada in Northwestern Utilities vs. City of Edmonton [1929], 2 D.L.R. 4, p. 8 that rate levels should be just and reasonable to the utility and the earnings should yield a fair rate of return on money invested. The capital attraction principle was enunciated in British Columbia Electric Railway vs Public Utilities Commission of British Columbia, et. al., (1961), 25 D.L.R. (2d) 689, pp. 697-698 where it was stated that "*earnings must be sufficient....to enable [the utility] to...attract capital either by the sale of shares or securities*".

These pivotal concepts were also articulated in landmark statements of the United States' highest court in the well-known Federal Power Commission vs. Hope Natural Electric Company, 320 U.S. 591 (1944) and Bluefield Water Works & Improvements Company vs. Public Service Commission of West Virginia, 262 U.S. 679 (1923) cases. The United States Supreme Court reiterated the criteria set forth in Hope in Federal Power Commission v. Memphis Light, Gas & Water Division, 411 U.S. 458 (1973), in Permian Basin Rate Cases, 390 U.S. 747 (1968), and most recently in Duquesne Light Co. vs. Barasch, 488 U.S. 299 (1989).

In the U.S., the Bluefield case set the standard against which just and reasonable rates of return are measured:

> *"A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties ... The return should be reasonable, sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties." (Emphasis added)*

The Hope case expanded on the guidelines to be used to assess the reasonableness of the allowed return. The Court reemphasized its statements in the Bluefield case and recognized that revenues must cover "capital costs." The Court stated:

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

In the Permian cases, the Supreme Court stressed that a regulatory agency's rate of return order should:

"*...reasonably be expected to maintain financial integrity, attract necessary capital, and fairly compensate investors for the risks they have assumed...*"

Therefore, the "end result" of the Regie's decision should be to allow GMLP the opportunity to earn a return on equity that is: (1) commensurate with returns on investments in other firms having corresponding risks, (2) sufficient to assure confidence in the Company's financial integrity, and (3) sufficient to maintain the Company's creditworthiness and ability to attract capital on reasonable terms.

Q.15 DR. MORIN, WHAT MUST BE CONSIDERED IN ESTIMATING A FAIR ROE?

A. As seen from the aforementioned landmark court cases, the legal requirement is that the allowed ROE should be commensurate with returns on investments in other firms having corresponding risks. The allowed return should be sufficient to assure confidence in the financial integrity of the firm, in order to maintain creditworthiness, and ability to attract capital on reasonable terms. The attraction of capital standard focuses on investors' return requirements that are generally determined using market value methods, such as the Risk Premium, CAPM, or DCF methods. These market value tests define fair return as the return that investors anticipate when they purchase equity shares of comparable risk in the financial marketplace. This return is a market rate of return, defined in terms of anticipated dividends and capital gains as determined by expected changes in stock prices, and reflects the opportunity cost of capital. The economic basis for market value tests is that new capital will be attracted to a firm only if the return expected by the

suppliers of funds is commensurate with that available from alternative investments of comparable risk.

Q.16 HOW IS THE FAIR RATE OF RETURN DETERMINED?

A. The aggregate return required by investors is called the "cost of capital." The cost of capital is the opportunity cost, expressed in percentage terms, of the total pool of capital employed by the utility. It is the composite weighted cost of the various classes of capital (*i.e.*, bonds, preferred stock, common stock) used by the utility, with the weights reflecting the proportions of the total capital that each class of capital represents. The fair return in dollars is obtained by multiplying the rate of return set by the regulator by the utility's "rate base." The rate base is essentially the net book value of the utility's plant and other assets used to provide utility service in a particular jurisdiction.

While utilities like GMLP enjoy varying degrees of monopoly in the sale of public utility services, natural gas is an energy source of choice. Additionally, they must compete with everyone else in the free, open market for the input factors of production, whether they be labor, materials, machines, or capital. The prices of these inputs are set in the competitive marketplace by supply and demand, and it is these input prices that are incorporated in the cost of service computation. This item is just as true for capital as for any other factor of production. Since utilities and other investor-owned businesses must go to the open capital market and sell their securities in competition with every other issuer, there is obviously a market price to pay for the capital they require, for example, the interest on debt capital, or the expected market return on common and/or preferred equity.

Q.17 HOW DOES THE CONCEPT OF A FAIR RETURN RELATE TO THE CONCEPT OF OPPORTUNITY COST?

A. The concept of a fair return is intimately related to the economic concept of "opportunity cost." When investors supply funds to a utility by buying its stocks or bonds, they are not only postponing consumption, giving up the alternative of spending their dollars in some other way, they also are exposing their funds to risk and forgoing returns from investing their money in alternative comparable-risk investments. The compensation that they require is the price of capital. If there are differences in the risk of the investments, competition among firms for a limited supply of capital will bring different prices. These differences in risk are translated by the capital markets into price differences in much the same way that differences in the characteristics of commodities are reflected in different prices.

The important point is that the prices of debt capital and equity capital are set by supply and demand, and both are influenced by the relationship between the risk and return expected for the respective securities and the risks expected from the overall menu of available securities.

Q.18 HOW DOES THE COMPANY OBTAIN ITS CAPITAL AND HOW IS ITS OVERALL COST OF CAPITAL DETERMINED?

A. The funds employed by the Company are obtained in three general forms, debt capital, preferred equity capital, and common equity capital. The cost of debt funds and preferred stock funds can be ascertained easily from an examination of the contractual terms for the interest payments and preferred dividends. The cost of common equity funds, that is,

equity investors' required rate of return, is more difficult to estimate because the dividend payments received from common stock are not contractual or guaranteed in nature. They are uneven and risky, unlike interest payments. Once a cost of common equity estimate has been developed, it can then easily be combined with the embedded cost of debt and preferred stock, based on the utility's capital structure, in order to arrive at the overall cost of capital.

Q.19 WHAT IS THE MARKET REQUIRED RATE OF RETURN ON EQUITY CAPITAL?

A. The market required rate of return on common equity, or cost of equity, is the return demanded by the equity investor. Investors establish the price for equity capital through their buying and selling decisions. Investors set return requirements according to their perception of the risks inherent in the investment, recognizing the opportunity cost of forgone investments, and the returns available from other investments of comparable risk.

III. COST OF EQUITY ESTIMATES

Q.20 DR. MORIN, HOW DID YOU ESTIMATE THE FAIR ROE FOR GMLP?

A. I employed three methodologies: (1) the CAPM, (2) the Risk Premium, and (3) the DCF. All three items are market-based methodologies and are designed to estimate the return required by investors on the common equity capital committed to GMLP.

Q.21 WHY DID YOU USE MORE THAN ONE APPROACH FOR ESTIMATING THE COST OF EQUITY?

A. No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. Examples of such vagaries include dividend suspension, insufficient or unrepresentative historical data due to a recent merger, impending merger or acquisition, and a new corporate identity due to restructuring activities. The advantage of using several different approaches is that the results of each one can be used to check the others.

As a general proposition, it is extremely dangerous to rely on only one generic methodology to estimate equity costs. The difficulty is compounded when only one variant of that methodology is employed. It is compounded even further when that one methodology is applied to a single company. Hence, several methodologies applied to several comparable risk companies should be employed to estimate the cost of common equity.

As I have stated, there are three broad generic methodologies available to measure the cost of equity: DCF, Risk Premium, and CAPM. All three of these methodologies are accepted and used by the financial community and firmly supported in the financial literature. The weight accorded to any one methodology may very well vary depending on unusual circumstances in capital market conditions.

There is no single model that conclusively determines or estimates the expected return for an individual firm. Each methodology has its own way of examining investor behavior, its own premises, and its own set of simplifications of reality. Investors do not necessarily subscribe to any one method, nor does the stock price reflect the application of any one single method by the price-setting investor. There is no guarantee that a single DCF result is necessarily the ideal predictor of the stock price and of the cost of equity reflected in that price, just as there is no guarantee that a single CAPM or Risk Premium result constitutes the perfect explanation of a stock's price or the cost of equity.

Q.22 ARE THERE ANY PRACTICAL DIFFICULTIES IN APPLYING COST OF CAPITAL METHODS IN THE CURRENT INDUSTRY ENVIRONMENT?

A. Yes, there are, especially in the Canadian utility environment where there is only a handful of publicly-traded investor-owned pure-play Canadian energy utilities with adequate historical data.

Many utility companies are either government-owned or operating companies of larger diversified companies, and many have been restructured and/or disappeared through acquisitions and mergers. To illustrate, AltaGas Utilities is wholly owned by AltaGas Utility Group Inc., which was acquired by AltaGas Trust. BC Gas Utility is now owned by Fortis, which also owns Newfoundland Power, Maritime Electric, and Terasen. The latter has been renamed FortisBC. Centra Gas Manitoba is a division of Manitoba Hydro, a crown corporation. Consumers' Gas is wholly owned by Enbridge, a diversified energy company, initially incorporated as Interprovincial Pipe Line. Union Gas is now a Spectra Energy company which was in turn created in 2007 from the natural gas business of

Duke Energy which in turn had previously acquired Westcoast Energy.

CU Inc. is a wholly owned subsidiary of Canadian Utilities Ltd, a holding company whose principal subsidiaries at ATCO Electric Ltd. and ATCO Gas and Pipelines Limited. ENMAX Corporation is wholly owned subsidiary of the City of Calgary. Hydro One is wholly owned by Province of Ontario. SaskEnergy is a provincial Crown corporation. Fortis Inc recently acquired all the outstanding stock of the electric utility Aquila Networks Canada(AL) Limited from Aquila Inc.. EPCOR Utilities Inc.'s sole shareholder is the City of Edmonton. Great Lakes Power Transmission is wholly owned by Brookfield Infrastructure Partners which was established by Brookfield Asset Management, a global asset management company. Ontario Power Generation is a Crown corporation. TransAlta Utilities, formerly Calgary Power Company, is owned by TransAlta, a Canadian diversified energy company.

The major point of all this is that there is a severe paucity of investor-owned widely-traded energy utilities in Canada and even less publicly-traded natural gas distributors that can serve as proxies for GMLP. In addition, several energy utilities are thinly traded, Pacific Northern Gas and Fortis for example, endangering the reliability of market-based measures, such as the beta risk measure discussed later. Moreover, the historical data for several of the Canadian energy utilities are distorted by multiple changes in ownership and corporate restructuring. Because there are very few "degrees of freedom" and very few comparable risk pure-play natural gas utilities with clean homogeneous historical financial data in Canada, it is necessary to examine U.S. samples of comparable utility companies. Also, as discussed later, it is difficult to obtain a

meaningful proxy for the perpetual growth component of the DCF model due to the paucity of analysts' growth forecasts in Canada. These difficulties are not nearly so acute in the U.S. because of much larger sample size of natural gas and electric utilities compared to Canada and because of the wide availability of growth forecasts.

With respect to current capital market conditions, all the traditional cost of equity estimation methods are difficult to implement when you are dealing with the unprecedented conditions of instability and volatility in the capital markets. This is because stock prices are extremely volatile at this time. The timing and magnitude of the economic recovery remains uncertain, following the 2008-9 financial crisis and deep recession.

Q.23 DR. MORIN, PLEASE PROVIDE AN OVERVIEW OF YOUR RISK PREMIUM ANALYSES.

A. In order to quantify the risk premium for GMLP, I have performed four risk premium studies on proxies for the Company. The first two studies deal with aggregate stock market risk premium evidence using two versions of the CAPM method and the other two deal directly with the energy utility industry.

A. CAPM ESTIMATES

Q.24 PLEASE DESCRIBE YOUR APPLICATION OF THE CAPM RISK PREMIUM APPROACH.

A. My first two risk premium estimates are based on the CAPM and on an empirical approximation to the CAPM (ECAPM). The CAPM is a fundamental paradigm of

finance. Simply put, the fundamental idea underlying the CAPM is that risk-averse investors demand higher returns for assuming additional risk, and higher-risk securities are priced to yield higher expected returns than lower-risk securities. The CAPM quantifies the additional return, or risk premium, required for bearing incremental risk. It provides a formal risk-return relationship anchored on the basic idea that only market risk matters, as measured by beta. According to the CAPM, securities are priced such that their:

EXPECTED RETURN = RISK-FREE RATE + RISK PREMIUM

Denoting the risk-free rate by R_F and the return on the securities market as a whole by R_M, the CAPM is:

$$K = R_F + \beta (R_M - R_F)$$

This is the seminal CAPM expression, which states that the return required by investors is made up of a risk-free component, R_F, plus a risk premium determined by β $(R_M - R_F)$. To derive the CAPM risk premium estimate, three quantities are required: the risk-free rate (R_F), beta (β), and the market risk premium, $(R_M - R_F)$. For the risk-free rate, beta, and the market risk premium ("MRP"), I used 4.4%, 0.70, and 6.7%, respectively. These inputs to the CAPM are explained below.

Q.25 HOW DID YOU DERIVE THE RISK FREE RATE OF 4.4%?

A. To implement the CAPM and Risk Premium methods, an estimate of the risk-free return is required as a benchmark. As a proxy for the risk-free rate, I have relied on the one-year forecasts of long-term Canada bond yields contained in the March 2011 edition of Consensus Forecasts from Consensus Economics Inc.

The appropriate proxy for the risk-free rate in the CAPM is the return on the longest term Government bond possible, which is the 30-year Canada bond. This is because common stocks are very long-term instruments more akin to very long-term bonds rather than to short-term or intermediate-term Government notes. In a risk premium model, the ideal estimate for the risk-free rate has a term to maturity equal to the security being analyzed. Common stock is a very long-term investment because the cash flows to investors in the form of dividends last indefinitely. Accordingly, the yield on the longest-term possible government bonds, that is, the yield on 30-year Government bonds, is the best measure of the risk-free rate for use in the CAPM. The expected common stock return is based on very long-term cash flows, regardless of an individual's holding time period. Moreover, utility asset investments generally have very long-term useful lives and should correspondingly be matched with very long-term maturity financing instruments.

While long-term Government bonds are potentially subject to interest rate risk, this is only true if the bonds are sold prior to maturity. A substantial fraction of bond market participants, usually institutional investors with long-term liabilities (pension funds, insurance companies), in fact hold bonds until they mature, and therefore are not subject to interest rate risk. Moreover, institutional bondholders neutralize the impact of interest rate changes by matching the maturity of a bond portfolio with the investment planning period, or by engaging in hedging transactions in the financial futures markets. The merits and mechanics of such immunization strategies are well documented by both academicians and practitioners.

Another reason for utilizing the longest maturity Government bond possible is that common equity has an infinite life span, and the inflation expectations embodied in its market-required rate of return will therefore be equal to the inflation rate anticipated to prevail over the very long-term. The same expectation should be embodied in the risk free rate used in applying the CAPM model. It stands to reason that the actual yields on 30-year Canada bonds will more closely incorporate within their yield the inflation expectations that influence the prices of common stocks than do short-term or intermediate-term Government of Canada notes.

Q.26 DR. MORIN, ARE THERE OTHER REASONS WHY YOU REJECT SHORT-TERM INTEREST RATES AS A PROXIES FOR THE RISK-FREE RATE IN IMPLEMENTING THE CAPM?

A. Yes. Short-term rates are volatile, fluctuate widely, and are subject to more random disturbances than are long-term rates. Short-term rates are largely administered rates. For example, as was seen recently in an attempt to combat the weak economy, Government bills are used by both the Bank of Canada and the Federal Reserve in the U.S. as policy vehicles to stimulate the economy and to control the money supply, and are used by foreign governments, companies, and individuals as a temporary safe-house for money.

As a practical matter, it makes no sense to match the return on common stock to the yield on 90-day Treasury Bills. This is because short-term rates, such as the yield on 90-day Treasury Bills, fluctuate widely, leading to volatile and unreliable equity return estimates. Moreover, yields on 90-day Treasury Bills typically do not match the equity

investor's planning horizon. Equity investors generally have an investment horizon far in excess of 90 days.

As a conceptual matter, short-term Treasury yields reflect the impact of factors different from those influencing the yields on long-term securities such as common stock. For example, the premium for expected inflation embedded into 90-day Treasury Bills is likely to be far different than the inflationary premium embedded into long-term securities yields. On grounds of stability and consistency, the yields on long-term Canada bonds match more closely with common stock returns.

Q.27 WHAT IS YOUR ESTIMATE OF THE RISK-FREE RATE IN APPLYING THE CAPM?

A. As a proxy for the risk-free rate, I examined the forecast level of long-term Canada (LTC) bond yields prevailing in March 2011. The March 2011 issue of Consensus Forecasts shows a LTC 10-year bond yield of 3.9% in twelve months time. Adding the 50 basis points between 10-year and 30-year LTC bond yields over the past twelve months, the risk-free rate forecast is 4.4%. Accordingly, I use 4.4% as estimate of the risk-free rate component of the CAPM. It is noteworthy that the yield on 30-year U.S. Government bonds prevailing in March 2011 is 5.0% and is expected to increase over the next year.

Q.28 HOW DID YOU SELECT THE BETA FOR YOUR CAPM ANALYSIS?

A. A major thrust of modern financial theory as embodied in the CAPM is that perfectly diversified investors can eliminate the company-specific component of risk, and that only market risk remains. The latter is technically known as "beta", or "systematic risk". The

beta coefficient measures the change in a security's return relative to that of the market. The beta coefficient states the extent and direction of movement in the rate of return on a stock relative to the movement in the rate of return on the market as a whole. The beta coefficient indicates the change in the rate of return on a stock associated with a one percentage point change in the rate of return on the market, and, thus, measures the degree to which a particular stock shares the risk of the market as a whole. Modern financial theory has established that beta incorporates several economic characteristics of a corporation that are reflected in investors' return requirements.

Technically, the beta of a stock is a measure of the covariance of the return on the stock with the return on the market as a whole. Accordingly, it measures dispersion in a stock's return that cannot be reduced through diversification. In abstract theory for a large diversified portfolio, dispersion in the rate of return on the entire portfolio is the weighted sum of the beta coefficients of its constituent stocks.

GMLP’s natural gas distribution operations are not publicly traded and, therefore, proxies must be used for GMLP. I reiterate my earlier caution that there is only a handful of undiversified pure-play natural gas utilities in Canada whose shares are publicly listed and actively traded, and are therefore subject to the opinions and actions of investors in a measurable way. In contrast, the U.S. utility industry is made up of nearly 100 investor-owned publicly-traded utilities. Given this situation, the need to extend the Lilliputian sample of Canadian utilities to include other utility companies of comparable risk is obvious. Moreover, the statistical reliability of U.S. studies vastly exceeds that of Canadian studies in view of the much larger sample sizes and the continuity in the data.

Q.29 WHAT BETA ESTIMATES DO INVESTORS CONSIDER WHEN MAKING INVESTMENT DECISIONS?

A. Three of the most highly visible and widely disseminated sources of investment information accessible to investors in North America include Value Line, Bloomberg, Morningstar, and Merill Lynch. Because of the high visibility of these information sources to investors, and because investors are likely to rely on the data provided by these sources, I have examined the beta estimates reported in both the March 2011 edition of the Value Line Investment Analyzer ("VLIA") software and Bloomberg for several proxies for GMLP's beta: investor-owned publicly-traded Canadian energy utilities, U.S. natural gas utilities, and U.S. combination gas and electric utilities. I also examined the risk of energy utilities relative to the aggregate equity market as measured by the standard deviation of returns.

As shown on page 1 of Exhibit RAM-2, the average Value Line beta for this small Canadian sample of energy utilities is 0.71 and the average Bloomberg beta for the same sample is 0.77. The truncated average, obtained by removing the high and low estimates and computing the average of the remaining companies, is 0.68 and 0.69 from Value Line and Bloomberg, respectively.

As a second proxy for the Company's beta, I have examined the betas of a sample of widely-traded, investment-grade, dividend-paying natural gas utilities covered by Value Line with at least 50% of their revenues from regulated operations. As displayed on page 2 of Exhibit RAM-2, the average beta for the natural gas group is 0.67.

As a third proxy, I examined the betas of a sample of widely-traded investment-grade combination gas and electric utilities with at least 50% of their revenues from regulated utility operations as a third proxy for the Company's natural gas business. These predominantly energy distribution utility companies possess economic characteristics similar to those of GMLP's natural gas delivery operations. They are both involved in the delivery of energy services at regulated rates in a cyclical and weather-sensitive market. They both employ a capital-intensive network with similar physical characteristics. They are both subject to rate of return regulation. These last two groups are examined in more detail later in my testimony, in connection with the DCF estimates of the cost of common equity. As shown on page 3 of Exhibit RAM-2, the average beta of the combination gas and electric group is 0.72. All three estimates are remarkably close. Based on these results, I shall use 0.70 as a beta estimate for GMLP's natural gas delivery operations.

Q.30 DID YOU CHECK YOUR BETA ESTIMATE WITH ANY OTHER REFERENCE POINTS?

A. Yes, I did. As a first check on my beta estimate, I examined the betas of the utility companies in the S&P Utility Index, which is comprised of both gas and electric utility companies. As shown on page 4 of Exhibit RAM-2, the average beta for the group is 0.74.

Q.31 IS YOUR BETA ESTIMATE CONSISTENT WITH REGULATORY DECISIONS?

A. As a second check on my beta estimate, I examined the beta estimates implicit in natural gas regulatory ROE awards. The CAPM framework can be used to quantify the beta

implicit in the allowed risk premiums for regulated utilities. According to the CAPM, the risk premium is equal to beta times the MRP:

$$\text{Risk Premium} = \beta \times \text{MRP}$$

Solving for beta, we obtain:

$$\beta = \text{Risk Premium} / \text{MRP}$$

I examined the betas implied in hundreds of regulatory decisions for natural gas utilities in the United States over the period 1986-2010[1]. This analysis could not be performed reliably because of the proliferation of formulaic approaches in setting allowed ROEs throughout Canada since the mid 1990's. I compiled regulators' allowed ROEs over that period and subtracted the contemporaneous level of government long-term yields so as to measure the allowed risk premium. I inserted the allowed risk premium inherent in these decisions in the above CAPM-based equation for beta. Using the allowed average risk premium of 5.2% in several hundred decisions over the last twenty years and a MRP of 6.7% (discussed below), the implied beta exceeds 0.70. Using a lower MRP estimate, the implied beta is even higher.

Q.32 DID YOU CONFIRM YOUR BETA ESTIMATE WITH ANY OTHER METHODOLOGY?

A. Yes, I did. To further confirm my beta estimate of 0.70, I have examined another measure of risk, namely, relative standard deviations of market returns, which measures total market risk (both diversifiable and non-diversifiable) rather than just non-diversifiable market risk. The upper panel of Exhibit RAM-2 page 5 reports the standard

[1] This study is described in more details later in my testimony.

deviation of returns for the overall U.S. equity market, natural gas utilities, and combination gas and electric utilities. The lower panel of Exhibit RAM-2 page 5 reports the standard deviation of returns of the utility groups relative to the standard deviation of the overall aggregate market. The average is 0.73. A similar exercise using the Canadian S&P/TSXUtility Index versus the S&P/TSE Index produces a 0.82 estimate. In other words, using the standard deviation as risk measure, North American utilities are approximately 0.73 to 0.82 as risky as the overall equity market, confirming the reasonableness and conservative nature of my beta estimate of 0.70.

Q.33 WHAT MRP DID YOU USE IN YOUR CAPM ANALYSIS?

A. For the MRP, I used 6.7%. This estimate was based on the results of both forward-looking and historical studies of long-term risk premiums, mainly the latter. I note from the start that as global capital markets have become highly integrated, I have adopted a more global perspective in the estimation of the cost of capital, as investors have.

First, the Morningstar (formerly Ibbotson Associates) study, *Stocks, Bonds, Bills, and Inflation, 2011 Yearbook*, compiling historical returns from 1926 to 2010 in the U.S., shows that a very broad market sample of common stocks outperformed long-term U.S. Government bonds by 6.0%. The historical MRP over the income component of long-term Government bonds rather than over the total return is 6.7%. Morningstar recommends the use of the latter as a more reliable estimate of the historical MRP, and I concur with this viewpoint. The historical MRP should be computed using the income component of bond returns because the intent, even using historical data, is to identify an expected MRP. This is because the income component of total bond return (*i.e.*, the

coupon rate) is a far better estimate of expected return than the total return (*i.e.,* the coupon rate + capital gain), as realized capital gains/losses are largely unanticipated by bond investors. The long-horizon (1926-2010) MRP (based on income returns, as required) is specifically calculated to be 6.7% rather than 6.0%.

As far as Canadian markets are concerned, the older Hatch-White compilation of historical returns on Canadian securities from 1950 to 1987 shows that a broad market sample of common stocks outperformed long-term Canada bonds by 6.9%, or close to 7%. For reference, see Canadian Stocks, Bonds, Bills and Inflation: 1950-1987, James E. Hatch and Robert W. White, The Financial Analyst Research Foundation, 1988. This study is somewhat dated and covers a relatively short period of time.

The Canadian Institute of Actuaries study, "Report on Canadian Economic Statistics, 1924-2005, March 2006, estimates a historical MRP of 5.1% over that period. An updated version of that study contained in the best-selling corporate finance textbook by Brealey, Myers, Marcus, and Mitra, "Fundamentals of Corporate Finance", 4th Canadian edition, reports a MRP of 5.2% over the 1924-2007 period. Based on income component of total bond return rather than the total bond return component, the MRP increases by 70 basis points to 5.9%, assuming the same spread between income return and total bond return as in the U.S. Morningstar study.

Dimson, Marsh, and Staunton[2] report on returns over the period 1900 to 2007 for twelve countries, representing 90% of the world's market capitalization. The authors report an average risk premium over long bond returns of 6.5% for the U.S. and 5.7% for

[2]Dimson, Elroy, Paul Marsh and Mike Staunton (2008) "Global Investment Returns Yearbook 2008,"London Business School.

Canada. Again, these MRP estimates are downward-biased by some 70 basis points to that extent that the MRPs are measured using total bond returns instead of the income component of bond return.

Q.34 IS CONSIDERATION OF U.S. AND WORLD MARKET RESULTS RELEVANT IN ESTIMATING THE COST OF CAPITAL?

A. Yes. The sheer quantity and quality of evidence and analysis of the US equities markets exceeds that of all other countries combined. In particular, the sheer size of the US equities markets dwarfs every other market in the world, with the US equities markets comprising some 50% of the Morgan Stanley Capital InternationaI ("MSCI") global stock index. Accordingly, the US equities market should be regarded as the most appropriate benchmark against which to measure risk premiums.

These days, capital markets know few national boundaries. Consideration of the U.S. and world market results is certainly justified, given the exponential increase in the degree of integration between the Canadian and U.S. capital markets in the last decades, as the barriers to entry in global capital markets have almost disappeared. Canada is an open and international economy. Investment funds move freely into and out of the country and the currency. Canadian investors and analysts do compare U.S. equities with Canadian equities when making investment decisions.

A dramatic development of the last few decades has been the integration of world financial markets into one global "supermarket". World financial markets are unifying.

Global corporations and global investors are well-positioned to access this global

market, and arbitrage short-run disparities in the cost of funds between markets. Their activity tends to drive national capital costs toward a single global standard. When capital flows freely from one location to another, competitive forces of supply and demand will quickly eliminate any price or rate of return disparities, other than those arising from differences in risk. Thus cost of capital differences cannot persist in an integrated capital market. The long-run tendency for real interest rates and exchange rates to revert to parity suggests an integrated capital market.

Capital markets are far more integrated now than in the 1980's and 1990's. Transactions, diversification, and taxation barriers to investment in foreign securities by Canadian investors have eroded considerably. It is now far easier to purchase and sell shares traded on foreign exchanges. More shares of foreign companies are now interlisted on Canadian and US exchanges. The purchase of American Depositary Receipts ("ADRs") provides access to equity investments in foreign companies. A wide range of mutual funds with an international focus exists in Canada and the U.S. To illustrate, low-cost foreign index funds called "WEBS", an acronym for World Equity Benchmark Shares, eliminate some of the guesswork and costs of investing internationally. Each WEBS Index Series seeks to match the performance of a specific Morgan Stanley Capital International (MSCI) index.

The arguments for international investments are more powerful than ever, including superior performance, diversification, and the improvement of the risk/return tradeoff. Diversification provides a substantial benefit of international investing. By spreading risks among different domestic equity markets, investors can achieve lower

risks and/or improve investment returns.

Foreign content restrictions in Canada have been largely eliminated. Cross-border access to capital by corporations is facilitated by the use of the multi-jurisdictional prospectus for new issues in North American capital markets, while international communications networks and equipment have facilitated the access to information on foreign securities. Global diversification is actively promoted by the investment community and by the investment academic literature.

In short, the integration and linkages between the U.S. and Canadian capital markets have greatly solidified in the last decade, and U.S. data are clearly relevant to both Canadian and U.S. investors. It is transparent that as global capital markets become more integrated, a more global perspective is required on the cost of capital.

Q.35 WHY DID YOU EXAMINE LONG TIME PERIODS IN ARRIVING AT YOUR HISTORICAL MRP ESTIMATE?

A. Because realized returns can be substantially different from prospective returns anticipated by investors when measured over short time periods, it is important to employ returns realized over long time periods rather than returns realized over more recent time periods when estimating the MRP with historical returns. Therefore, a risk premium study should consider the longest possible period for which data are available. Short-run periods during which investors earned a lower risk premium than they expected are offset by short-run periods during which investors earned a higher risk premium than they expected. Only over long time periods will investor return expectations and realizations converge.

I have therefore ignored realized risk premiums measured over short time periods. Instead, I relied on results over periods of enough length to smooth out short-term aberrations, and to encompass several business and interest rate cycles. The use of the entire study period in estimating the appropriate MRP minimizes subjective judgment and encompasses many diverse regimes of inflation, interest rate cycles, and economic cycles.

To the extent that the estimated historical equity risk premium follows what is known in statistics as a random walk, one should expect the equity risk premium to remain at its historical mean. Since I found no evidence that the MRP in common stocks has changed over time, at least prior to the onslaught of the financial crisis of 2008-2009, that is, no significant serial correlation in the Morningstar and CIA studies prior to that time, it is reasonable to assume that these quantities will remain stable in the future.

Q.36 SHOULD STUDIES OF HISTORICAL RISK PREMIUMS RELY ON ARITHMETIC AVERAGE RETURNS OR ON GEOMETRIC AVERAGE RETURNS?

A. Whenever relying on historical risk premiums, only arithmetic average returns are appropriate for forecasting and estimating the cost of capital, and geometric average returns are not.[3]Chapter 4 Appendix A of my book *The New Regulatory Finance* contains a detailed and rigorous discussion of the impropriety of using geometric averages in estimating the cost of capital. There is no theoretical or empirical justification for the use of geometric mean rates of returns when estimating the cost of capital.

[3]*See* Roger A. Morin, *Regulatory Finance: Utilities' Cost of Capital*, chapter 11 (1994); Roger A. Morin, *The NewRegulatory Finance: Utilities' Cost of Capital*, chapter 4 (2006); Richard A Brealey, *et al.*, *Principles of Corporate Finance* (8th ed. 2006).

Q.37 DID YOU BASE YOUR HISTORICAL MRP ESTIMATE ON ANY OTHER SOURCE?

A. Yes, I did. I applied a prospective DCF analysis to the aggregate U.S. equity market using Value Line's Value Line Investment Analyzer (VLIA) software. The dividend yield on the dividend-paying stocks that make up the Value Line Composite Index is currently 2.4% (VLIA 04/2011 edition), and the average projected long-term growth rate is 8.96%. Adding the dividend yield to the growth component produces an expected market return on aggregate equities of 11.36%. Following the tenets of the DCF model, the spot dividend yield must be converted into an expected dividend yield by multiplying it by one plus the growth rate. This brings the expected return on the aggregate equity market to 11.58%. Recognition of the quarterly timing of dividend payments rather than the annual timing of dividends assumed in the annual DCF model brings the MRP estimate to approximately 11.78%. Subtracting the risk-free rate of 5.0% from the latter, the implied risk premium is 6.8% over long-term U.S. Government bonds. This estimate is virtually identical to the historical estimate of 6.7%, corroborating its reasonableness.

This forward-looking DCF style of analysis cannot be reliably applied to the Canadian equity market because there are too few dividend-paying companies in the S&P/TSE Index with readily available long-term growth forecasts for the companies in the index for a meaningful analysis. Analysts' long-term growth forecasts are widely available for U.S. companies in contrast to Canadian markets where such forecasts are very sparse.

As a further check on the prospective MRP estimate, I also examined a 2003

comprehensive article published in Financial Management (see Harris, R. S., Marston, F. C., Mishra, D. R., and O'Brien, T. J., "*Ex Ante* Cost of Equity Estimates of S&P 500 Firms: The Choice Between Global and Domestic CAPM," Financial Management, Fall 2003, pp. 51-66).

These authors provide estimates of the prospective expected market returns for S&P 500 companies over the period 1983-1998. They measure the expected market rate of return of each dividend-paying stock in the S&P 500 for each month from January 1983 to August 1998 by using the constant growth DCF model. The prevailing risk-free rate for each year was then subtracted from the expected rate of return for the overall market to arrive at the market risk premium for that year. The average MRP estimate from that study for the overall period is 7.2%, which is reasonably close to my own estimate of 6.7%.

Recapitulating, the MRP estimates range from 5.7% to 7.2%. I have adopted an estimate in the upper half of the range for several reasons. First, following the devastating impact of the 2008-2009 financial crisis which admittedly has abated somewhat, the continuing uncertainty concerning the timing and magnitude of the economic recovery, and the persistent volatility on equity markets, it stands to reason that investor aversion, hence the MRP, stand in the upper portion of a range of results. Second, the U.S. MRP benchmarks have become far more relevant since the ceiling on the proportion of foreign investments that could be held Canadian investors has been eliminated. The consequence is that Canadian historical MRP estimates are likely to understate the prospective MRP. Third, the disappearance of the historical positive

difference between Government of Canada and U.S. Treasury bond yields has further increased the relevance of U.S.MRP benchmarks. Finally, the U.S. equity market is far more diversified and liquid relative to the Canadian equity market which is heavily weighted toward natural resource and financial sectors, thereby accentuating the relevance of U.S. MRP benchmarks.

Q.38 COULD YOU ELABORATE ON THIS LAST POINT?

A. Yes. One significant difference between the US and Canadian equity market is that the latter has a larger representation of resource-based companies, which have high levels of systematic risk. But the empirical evidence most commonly used to estimate the US MRP is based upon the S&P 500 Index. This index is of a highly diverse set of companies that is not overrepresented by high-risk companies. A second significant difference is due to size. The small size effect is a well-known phenomenon in finance whereby small companies earn an average return that is greater than the return estimated using the CAPM. The average size of listed companies in Canada is less than in the US. Clearly, Canada's equity market is significantly smaller and, on that basis alone, would be expected to be higher risk.

The compositions of the two countries' equity markets are consistent with the MRP in Canada being higher than the US MRP. An intuitive way of quantifying the difference is to think of it in terms of systematic (beta) risk. If the companies in the Canadian market were listed on an exchange with the S&P 500 companies, the average beta of the Canadian firms would be in excess of 1.0, perhaps 1.10 -1.30. Assuming an MRP of 7% and applying the beta estimate in excess of 1.00 would translate into an

addition to the benchmark MRP of 0.70% to 2.1%.

Q.39 DR. MORIN, IS YOUR MRP ESTIMATE OF 6.7% CONSISTENT WITH THE ACADEMIC LITERATURE ON THE SUBJECT?

A. Yes, it is. In their widely-used authoritative textbook, following a comprehensive review of the rich and fertile MRP literature, Brealey& Myers & Allen state[4]:

> *Brealey, Myers, and Allen have no official position on the issue, but we believe that a range of 5 to 8 percent is reasonable for the risk premium in the United States.*

I certainly concur with this view, although the recent financial crisis and consequent repricing of risk by investors certainly suggests that the upper part of the MRP range identified by Brealey, Myers, and Allen is far more relevant. My own survey of the MRP literature, which appears in Chapter 5 of my latest textbook, The New Regulatory Finance, is also quite consistent with this range.

Q.40 WHAT IS YOUR RISK PREMIUM ESTIMATE OF THE COMPANY'S COST OF EQUITY USING THE CAPM APPROACH?

A. Inserting those input values in the CAPM equation, namely a risk-free rate of 4.4%, a beta of 0.70, and a MRP of 6.7%, the CAPM estimate of the cost of common equity is: 4.4% + 0.70 x 6.7% = 9.1%. This estimate becomes 9.4% with flotation costs, discussed later in my testimony.

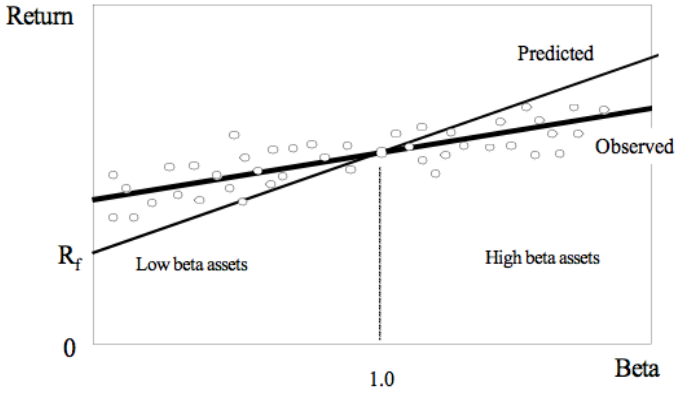
[4] (Richard A. Brealey, Stewart C. Myers, and Paul Allen, Principles of Corporate Finance, 8th Edition, Irwin McGraw-Hill, 2006.)

Q.41 WHAT IS YOUR RISK PREMIUM ESTIMATE USING THE EMPIRICAL VERSION OF THE CAPM?

A. With respect to the empirical validity of the plain vanilla CAPM, there have been countless empirical tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM. This literature is summarized in Chapter 6 of my latest book, The New Regulatory Finance, published by Public Utilities Report Inc., and is also discussed in the Canadian edition of Brealey, Myers, et. al. op.cit. The results of the tests support the idea that beta is related to security returns, that the risk-return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as the predicted CAPM. That is, empirical research has long shown that low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.

A CAPM-based estimate of cost of capital underestimates the return required from low-beta securities and overstates the return required from high-beta securities, based on the empirical evidence. This is one of the most well-known results in finance, and it is displayed graphically below.

CAPM: Predicted vs Observed Returns



A number of variations on the original CAPM theory have been proposed to explain this finding. The ECAPM makes use of these empirical findings. The ECAPM estimates the cost of capital with the equation:

$$K = R_F + \alpha + \beta \times (MRP - \alpha)$$

where the symbol alpha, α, represents the "constant" of the risk-return line, MRP is the market risk premium ($R_M - R_F$), and the other symbols are defined as usual.

Inserting the long-term risk-free rate as a proxy for the risk-free rate, an alpha in the range of 1% - 2%, and reasonable values of beta and the MRP in the above equation produces results that are indistinguishable from the following more tractable ECAPM expression:

$$K = R_F + 0.25 (R_M - R_F) + 0.75 \beta (R_M - R_F)$$

An alpha range of 1% - 2% is somewhat lower than that estimated empirically. The use of a lower value for alpha leads to a lower estimate of the cost of capital for

low-beta stocks such as regulated utilities. This is because the use of a long-term risk-free rate rather than a short-term risk-free rate already incorporates some of the desired effect of using the ECAPM. In other words, the long-term risk-free rate version of the CAPM has a higher intercept and a flatter slope than the short-term risk-free version which has been tested. Thus, it is reasonable to apply a conservative alpha adjustment.

As shown in Morin, The New Regulatory Finance Chapter 11, the following equation provides a viable approximation to the observed relationship between risk and return, and provides the following cost of equity capital estimate:

$$K = R_F + 0.25 (R_M - R_F) + 0.75 \beta (R_M - R_F)$$

Inserting 4.4% for the risk-free rate R_F, an MRP of 6.7% for the MRP, $(R_M - R_F)$, and a beta of 0.70 in the above equation, the return on common equity is 9.6%. This estimate becomes 9.9% with flotation costs, discussed later in my testimony.

Q.42 PLEASE SUMMARIZE YOUR CAPM ESTIMATES.

A. The table below summarizes the common equity estimates obtained from the CAPM studies.

CAPM Method	% ROE
Traditional CAPM	9.4%
Empirical CAPM	9.9%

B. HISTORICAL RISK PREMIUM

Q.43 CAN YOU DESCRIBE YOUR HISTORICAL RISK PREMIUM ANALYSIS OF THE ENERGY UTILITY INDUSTRY?

A. Yes. As a proxy for the risk premium applicable to the natural gas utility business, I estimated the historical risk premium for the utility industry with an annual time series analysis applied to the utility industry as a whole over the 1930-2010 period, using *Standard and Poor's UtilityIndex* as an industry proxy. The latter index includes both natural gas and electric utilities. The analysis is depicted on Exhibit RAM-3. The risk premium was estimated by computing the actual realized return on equity capital for the S&P Utility Index for each year, using the actual year-to-year changes in the index, and then subtracting the long-term government bond return for that year.

As shown on Exhibit RAM-3, the average risk premium over the period was 5.5% over historical long-term government bond returns and 5.7% over long-term government bond yields. Given that the risk-free rate is 4.4%, and using the historical estimate of 5.5%, the implied cost of equity for the average risk utility from this particular method is 4.4% + 5.5% = 9.9% without flotation costs and 10.2% with flotation costs. Using the risk premium over bond yields, the corresponding cost of equity estimate is 10.4%

There is no comparable comprehensive data over a sufficiently long period and with a sufficient number of pure play Canadian utilities required to perform a similar study using Canadian data.

Q.44 DID YOU PERFORM A SIMILAR ANALYSIS MORE SPECIFIC TO THE NATURAL GAS INDUSTRY?

A. Yes, I did. As a proxy for the risk premium applicable to the natural gas utility business, I estimated the historical risk premium for the utility industry with an annual time series analysis applied to the natural gas utility industry. An historical risk premium for GMLP was estimated with an annual time series analysis from 1955 to 2001 applied on the natural gas industry as a whole, using Moody's Natural Gas Utility Index as an industry proxy. This index includes natural gas transmission, distribution and integrated companies. Data for this particular index was unavailable for periods prior to 1955. The analysis stops in 2001 because following the acquisition of Moody's by Mergent in 2002, publication of the natural gas utility index was discontinued. The analysis is depicted on Exhibit RAM-4. The risk premium was estimated by computing the realized market return on equity capital for Moody's Natural Gas Index for each year from 1955 to 2001 using the actual stock prices and dividend yields of the index, and then subtracting the realized market return on long-term U.S. Government bonds for that year. The average risk premium over the period was 5.7% over long-term government bonds and 5.2% over bond yields, which are close to the 5.7% and 5.0% estimates obtained using the S&P Utility Index. Given that the risk-free rate is 4.4%, and using the historical estimate of 5.7%, the implied cost of equity for the average risk natural gas utility from this particular method is 4.4% + 5.7% = 10.1% without flotation costs and 10.4% with flotation costs. Using the risk premium of 5.2% over bond yields, the cost of equity estimate is 9.9%.

Q.45 DR. MORIN, ARE RISK PREMIUM STUDIES WIDELY USED?

A. Yes, they are. Risk Premium analyses are widely used by analysts, investors, economists, and expert witnesses. Most college-level corporate finance and/or investment management texts, including Investments by Bodie, Kane, and Marcus, McGraw-Hill Irwin, 2002, which is a recommended textbook for CFA (Chartered Financial Analyst) certification and examination, contain detailed conceptual and empirical discussion of the risk premium approach. The latter is typically recommended as one of the three leading methods of estimating the cost of capital. For example, Professor Brigham's Canadian edition (with co-authors Ehrhardt, Gessaroli and Nason) of his best-selling corporate finance textbook, ,Financial Management:Theory and Practice,1st ed., Nelson Edition, 2011, recommends the use of risk premium studies, among others. Techniques of risk premium analysis are widespread in investment community reports. Professional certified financial analysts are certainly well versed in the use of this method.

Q.46 ARE THE ASSUMPTIONS THAT UNDERLIE THE HISTORICAL RISK PREMIUM METHODOLOGY REALISTIC?

A. Yes, I believe they are. I also believe that they are no more restrictive than the assumptions that underlie the DCF model or the CAPM. While it is true that the method looks backward in time and assumes that the risk premium is constant over time, these assumptions are not necessarily restrictive. By employing returns realized over long time periods rather than returns realized over more recent time periods, investor return expectations and realizations converge. Realized returns can be substantially different from prospective returns anticipated by investors, especially when measured over short

time periods. By ensuring that the risk premium study encompasses the longest possible period for which data are available, short-run periods during which investors earned a lower risk premium than they expected are offset by short-run periods during which investors earned a higher risk premium than they expected. Only over long time periods will investor return expectations and realizations converge, or else, investors would never invest any money.

C. ALLOWED RISK PREMIUM

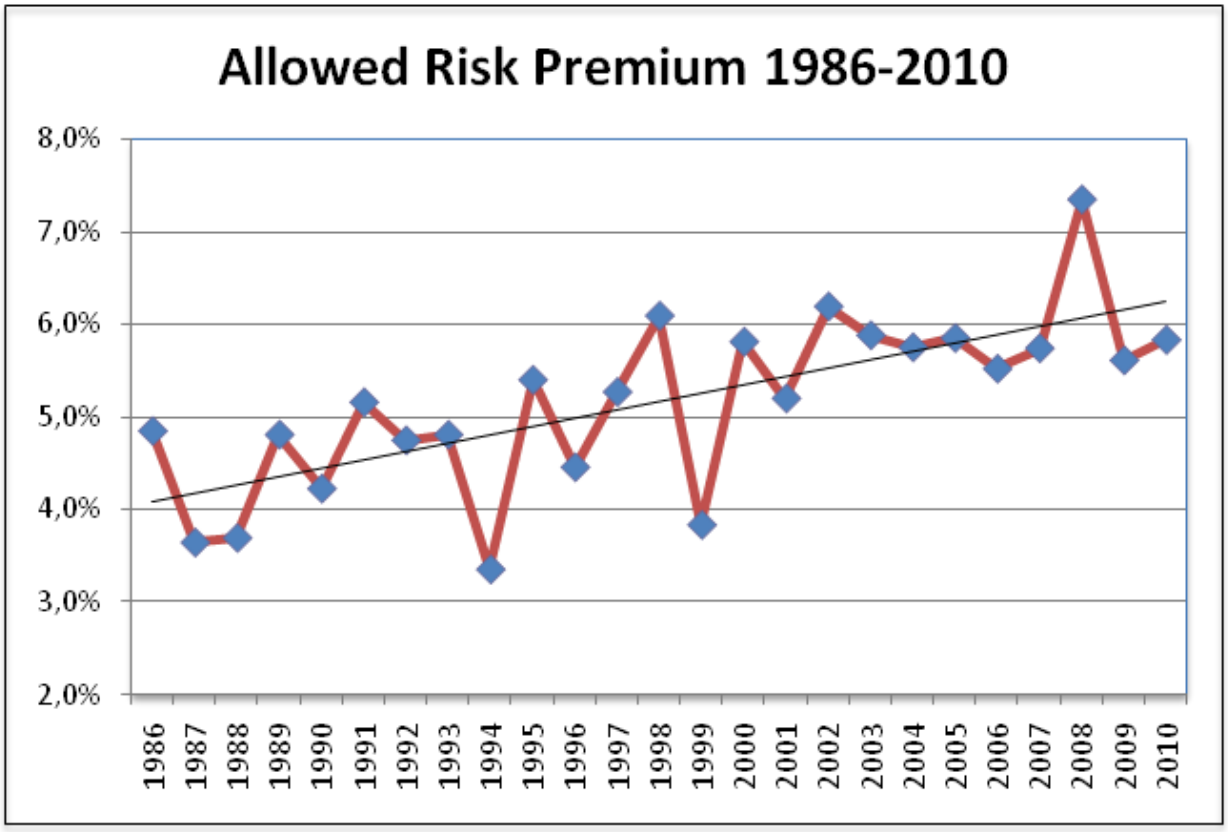
Q.47 CAN YOU DESCRIBE YOUR ANALYSIS OF ALLOWED RISK PREMIUMS IN THE U.S. NATURAL GAS INDUSTRY

A. Because allowed returns in the U.S. are set by regulators based on expert testimonies from various parties using a broad array of methodologies (CAPM, DCF, Comparable Earnings, Risk Premium, etc.) in contrast to the Canadian situation whereby allowed returns have been largely tied to adjustment formulas since the mid 1990's, it is instructive to examine the risk premiums allowed by regulators on companies comparable to GMLP.

Therefore, to estimate the U.S. natural gas industry's cost of common equity, I analyzed the historical risk premiums implied in the ROEs allowed by regulatory commissions in nearly 600 decisions for natural gas utilities over the 1986-2010 period, relative to the contemporaneous level of the long-term government bond yield. This variation of the risk premium approach is reasonable because allowed risk premiums are presumably based on the results of market-based methodologies (DCF, Risk Premium,

CAPM, *etc*.) presented to regulators in rate hearings and on the actions of objective unbiased investors in a competitive marketplace. Historical allowed ROE data are readily available over long periods on a quarterly basis from Regulatory Research Associates (now SNL) and easily verifiable from SNL publications and past commission decision archives. This analysis cannot be applied reliably to the Canadian natural gas industry because of the extreme paucity of pure-play natural gas utilities and because of the scarcity of available ROE decisions, since most regulated utilities in Canada have been under a regime of formulaic ROEs since the adoption of the formula approach by the National Energy Board in 1994.

As shown on Exhibit RAM-5, the average ROE spread over long-term Government yields was 5.2% over the entire 1986-2010period for which data were available from SNL. The graph below shows the year-by-year allowed risk premium. The escalating trend of the risk premium in response to lower interest rates and rising competition is noteworthy.



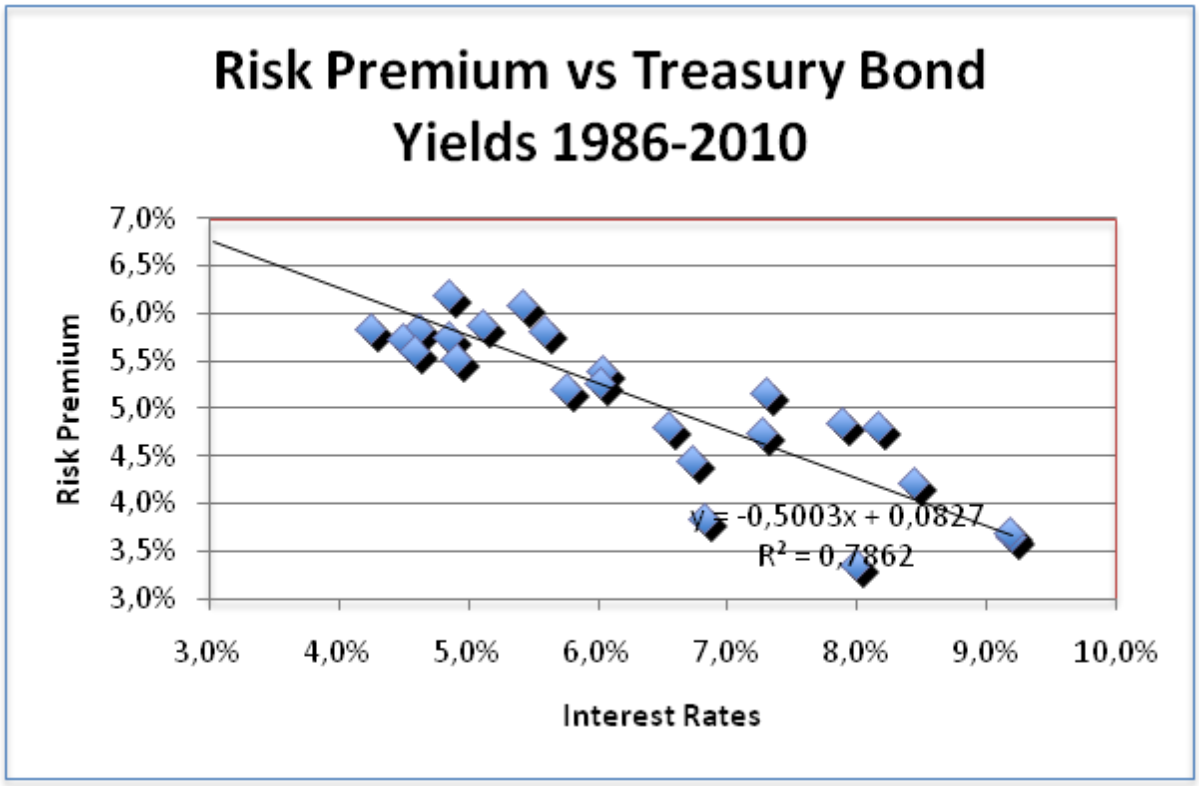
A careful review of these ROE decisions relative to interest rate trends reveals a narrowing of the risk premium in times of rising interest rates, and a widening of the premium as interest rates fall. The following statistical relationship between the risk premium (RP) and interest rates (YIELD) emerges over the last decade:

$$RP = 8.2700 - 0.5003\ YIELD \qquad R^2 = 0.79$$

The relationship is highly statistically significant[5] as indicated by the very high R^2. The graph below shows a clear inverse relationship between the allowed risk premium and interest rates as revealed in past ROE decisions. I note the elasticity coefficient of 0.50

[5] The coefficient of determination R^2, sometimes called the "goodness of fit measure" is a measure of the degree of explanatory power of a statistical relationship. It is simply the ratio of the explained portion to the total sum of squares. The higher R^2 the higher is the degree of the overall fit of the estimated regression equation to the sample data. The t-statistic is a standard measure of the statistical significance of an independent variable in a regression relationship. A t-value above 2.0 is considered highly significant.

in the above relationship to which I shall return later in my testimony in connection with the mechanics of the ROE formula.



Inserting the risk-free rate of 4.4% in the above equation suggests that a risk premium estimate of 6.2% should be allowed for the average risk natural gas, implying a cost of equity of 10.6% for the average risk utility. No flotation cost allowance is relevant here as the ROEs are allowed returns on book equity by regulators and not market-based returns.

Q.48 DO INVESTORS TAKE INTO ACCOUNT ALLOWED RETURNS IN FORMULATING THEIR RETURN EXPECTATIONS?

A. Yes, they certainly do. Investors take into account returns granted by various regulators

in formulating their risk and return expectations, as evidenced by the availability of commercial publications disseminating such data, including Value Line, Regulatory Research Associates (now SNL), and bond rating agencies. Allowed returns, while certainly not a precise indication of a particular company's cost of equity capital, are nevertheless an important determinant of investor growth perceptions and investor expected returns.

Q.49 PLEASE SUMMARIZE YOUR RISK PREMIUM ESTIMATES.

A. The table below summarizes the ROE estimates obtained from the three risk premium studies.

Risk Premium Method	**ROE**
Historical Risk Premium S&P Utility	10.2%
Historical Risk Premium Nat Gas	10.4%
Allowed Risk Premium Nat Gas	10.6%

D. DCF ESTIMATES

Q.50 PLEASE DESCRIBE THE DCF APPROACH TO ESTIMATING THE COST OF EQUITY CAPITAL.

A. According to DCF theory, the value of any security to an investor is the expected discounted value of the future stream of dividends or other benefits. One widely used method to measure these anticipated benefits in the case of a non-static company is to examine the current dividend plus the increases in future dividend payments expected by investors. This valuation process can be represented by the following formula, which is the standard DCF model:

$$K_e = D_1/P_o + g$$

where: K_e = investors' expected return on equity.

D_1 = expected dividend at the end of the coming year.

P_o = current stock price.

g = expected growth rate of dividends, earnings, stock price, book value.

The standard DCF formula states that under certain assumptions, which are described in the next paragraph, the equity investor's expected return, K_e, can be viewed as the sum of an expected dividend yield, D_1/P_o, plus the expected growth rate of future dividends and stock price, g. The returns anticipated at a given market price are not directly observable and must be estimated from statistical market information. The idea of the market value approach is to infer 'K_e' from the observed share price, the observed dividend, and an estimate of investors' expected future growth.

The assumptions underlying this valuation formulation are well known, and are discussed in detail in Chapter 4 of my reference book, Regulatory Finance, and Chapter 8 of my latest textbook, The New Regulatory Finance. The standard DCF model requires the following main assumptions: a constant average growth trend for both dividends and earnings, a stable dividend payout policy, a discount rate in excess of the expected growth rate, and a constant price-earnings multiple, which implies that growth in price is synonymous with growth in earnings and dividends. The standard DCF model also assumes

that dividends are paid at the end of each year when, in fact, dividend payments are normally made on a quarterly basis.

Q.51 WERE YOU ABLE TO APPLY THE DCF MODEL TO CANADIAN UTILITY COMPANIES?

A. No, I was not. As discussed earlier, there is a severe paucity of investor-owned widely-traded energy utilities in Canada. Moreover, the historical data for the few available Canadian energy utilities are distorted by multiple changes in ownership and corporate restructuring. In addition, some energy utilities are thinly traded, endangering the reliability of market-based measures, such as the beta risk measure discussed later. Because there are very few "degrees of freedom" and very few comparable risk pure-play utilities with clean homogeneous historical financial data in Canada, the DCF results are likely to prove unreliable. Also, it is very difficult to obtain a meaningful proxy for the perpetual growth component of the DCF model due to the shortage of analysts growth forecasts in Canada. These difficulties are not nearly so acute in the U.S. because of much larger sample size of utilities compared to Canada and because of the wide availability of growth forecasts.

Q.52 HOW DID YOU ESTIMATE GMLP'S COST OF EQUITY WITH THE DCF MODEL?

A. I applied the DCF model to two proxy groups of companies for GMLP's natural gas delivery operations: a group consisting of investment-grade dividend-paying natural gas utilities and a group consisting of investment-grade dividend-paying combination gas and

electric utilities. In the case of both groups, the companies had to derive at least 50% of their revenues from regulated energy operations.

In order to apply the DCF model, two components are required: the expected dividend yield (D_1/P_o) and the expected long-term growth (g). The expected dividend D_1 in the annual DCF model can be obtained by multiplying the current indicated annual dividend rate by the growth factor (1 + g).

From a conceptual viewpoint, the stock price to employ in calculating the dividend yield is the current price of the security at the time of estimating the cost of equity. The reason is that the current stock price provides a better indication of expected future prices than any other price in an efficient market. An efficient market implies that prices adjust rapidly to the arrival of new information. Therefore, the current price reflects the fundamental economic value of a security. A considerable body of empirical evidence indicates that capital markets are efficient with respect to a broad set of information. This evidence implies that observed current prices represent the fundamental value of a security, and that a cost of capital estimate should be based on current prices.

In implementing the DCF model, I have used the current dividend yields reported in the March 2011 edition of Value Line's VLIA software. Basing dividend yields on average results from a large group of companies reduces the concern that idiosyncrasies of individual company stock prices will result in an unrepresentative dividend yield.

Q.53 HOW DID YOU ESTIMATE THE GROWTH COMPONENT OF THE DCF MODEL?

A. The principal difficulty in calculating the required return by the DCF approach is in ascertaining the growth rate that investors currently expect. Since no explicit estimate of expected growth is observable, proxies must be employed.

As proxies for expected growth, I examined growth estimates developed by professional analysts employed by large investment brokerage institutions. Projected long-term growth rates actually used by institutional investors to determine the desirability of investing in different securities influence investors' growth anticipations. These forecasts are made by large reputable organizations, and the data are readily available to investors and are representative of the consensus view of investors. Because of the dominance of institutional investors in investment management and security selection, and their influence on individual investment decisions, analysts' growth forecasts influence investor growth expectations and provide a sound basis for estimating the cost of equity with the DCF model. Growth rate forecasts of analysts are available from published investment newsletters and from systematic compilations of analysts' forecasts, such as those tabulated by Zacks Investment Research Inc. ("Zacks"). I used analysts' long-term growth forecasts contained in Zacks as proxies for investors' growth expectations in applying the DCF model. I also used Value Line's growth forecast as a proxy.

Q.54 WHY DID YOU REJECT THE USE OF HISTORICAL GROWTH RATES IN APPLYING THE DCF MODEL TO UTILITIES?

A. I have rejected historical growth rates as proxies for expected growth in the DCF calculation because historical growth patterns are already incorporated in analysts' growth forecasts that should be used in the DCF model, and are therefore somewhat redundant.

Q.55 DID YOU CONSIDER ANY OTHER METHOD OF ESTIMATING EXPECTED GROWTH IN THE DCF MODEL?

A. Yes, I did. I considered using the so-called "sustainable growth" method, also referred to as the "retention growth" method. According to this method, future growth is estimated by multiplying the fraction of earnings expected to be retained by the company, 'b', by the expected return on book equity, 'ROE', as follows:

$$g = b \times ROE$$

where: g = expected growth rate in earnings/dividends

b = expected retention ratio

ROE = expected return on book equity

However, I do not generally subscribe to the growth results produced by this particular method for several reasons. First, the sustainable method of predicting growth is only accurate under the assumptions that the ROE is constant over time and that no new common stock is issued by the company, or if so, it is sold at book value. Second, and more importantly, the sustainable growth method contains a logic trap: the method requires an estimate of ROE to be implemented. But if the ROE input required by the

model differs from the recommended return on equity, a fundamental contradiction in logic follows. Third, the empirical finance literature demonstrates that the sustainable growth method of determining growth is not as significantly correlated to measures of value, such as stock prices and price/earnings ratios, as analysts' growth forecasts. I therefore placed no reliance on this method.

Q.56 IS THERE ANY EMPIRICAL EVIDENCE DOCUMENTING THE IMPORTANCE OF EARNINGS IN EVALUATING INVESTORS' EXPECTATIONS IN THE INVESTMENT COMMUNITY?

A. Yes, there is an abundance of evidence attesting to the importance of earnings in assessing investors' expectations. First, the sheer volume of earnings forecasts available from the investment community relative to the scarcity of dividend forecasts attests to their importance. To illustrate, Value Line, Zacks Investment, First Call Thompson, and Multex provide comprehensive compilations of investors' earnings forecasts, to name some. The fact that these investment information providers focus on growth in earnings rather than growth in dividends indicates that the investment community regards earnings growth as a superior indicator of future long-term growth. Second, Value Line's principal investment rating assigned to individual stocks, Timeliness Rank, is based primarily on earnings, which account for 65% of the ranking.

Q.57 WHAT DCF RESULTS DID YOU OBTAIN FOR THE NATURAL GAS UTILITIES GROUP USING ANALYSTS' GROWTH FORECASTS?

A. As a proxy for GMLP's natural gas business, I have examined the expected returns of investment-grade dividend-paying natural gas distribution utilities contained in Value

Line's natural gas distribution universe with a market value in excess of $500 million and with at least 50% of their revenues from regulated natural gas operations. The group was shown earlier in Exhibit RAM-2 page 2 in connection with beta estimates.

The DCF analyses for the natural gas utilities are shown on Exhibits RAM-6 and RAM-7. As shown on Column 2 of Exhibit RAM-6, the average long-term growth forecast obtained from the Zacks corporate earnings database is 4.7% for the natural gas distribution group. Combining this growth rate with the average expected dividend yield of 3.8% shown in Column 3 produces an estimate of equity costs of 8.4% shown in Column 4. Recognition of flotation costs brings the cost of equity estimate to 8.6%, shown in Column 5.

Repeating the exact same procedure, only this time using Value Line's long-term earnings growth forecast of 4.6% instead of the Zacks consensus growth forecast, the cost of equity for gas distribution group is 8.4%, unadjusted for flotation costs. Adding an allowance for flotation costs brings the cost of equity estimate to 8.6%. This analysis is displayed on Exhibit RAM-7.

Q.58 PLEASE DESCRIBE YOUR SECOND PROXY GROUP FOR THE COMPANY'S NATURAL GAS DISTRIBUTION BUSINESS?

A. It is reasonable to postulate that the Company's natural gas utility operations possess an investment risk profile similar to the combination gas and electric utility business. Combination gas and electric utilities are reasonable proxies for natural gas distribution utilities, for they possess economic characteristics very similar to those of natural gas utilities. They are both involved in the transmission-distribution of energy services

products at regulated rates in a cyclical and weather-sensitive market. They both employ a capital-intensive network with similar physical characteristics. They are both subject to rate of return regulation and have enjoyed virtually identical allowed rates of return, attesting to their risk comparability.

For my second proxy group of companies, I have therefore examined a group of investment-grade, dividend-paying utilities designated as "combination gas and electric utilities" by AUS Utility Reports and covered in Value Line. Companies with less than 50% of their revenues from regulated operations were eliminated. The same group utilized earlier in connection with beta estimates was retained for the DCF analysis.

Q.59 WHAT DCF RESULTS DID YOU OBTAIN FOR THE COMBINATION GAS & ELECTRIC UTILITIES GROUP USING VALUE LINE GROWTH PROJECTIONS?

A. The DCF analyses for the combination gas and electric utilities are shown on Exhibits RAM-8 and RAM-9. As shown on Column 2 of Exhibit RAM-8, the average long-term growth forecast obtained from Value Line is 6.9% for this group. Combining this growth rate with the average expected dividend yield of 4.64% shown in Column 3 produces an estimate of equity costs of 11.53% for the group, unadjusted for flotation costs. Adding an allowance for flotation costs to the results of Column 4 brings the cost of equity estimate to 11.8%, shown in Column 5. Removing the two outlying estimates of 19.76% and 19.04%, the average cost of equity estimate becomes 10.8%.

Q.60 WHAT DCF RESULTS DID YOU OBTAIN FOR THE COMBINATION GAS & ELECTRIC UTILITIES GROUP USING THE ANALYST'S CONSENSUS GROWTH FORECAST?

A. Using the consensus analysts' earnings growth forecast published by Zacks of 5.8% instead of the Value Line forecast, the cost of equity for the group is 10.4%. Allowance for flotation costs brings the cost of equity estimate to 10.7%. Removing the outlying estimate for NV Energy, the cost of equity estimate becomes 10.3%. This analysis is shown on Exhibit RAM-9.

Q.61 PLEASE SUMMARIZE YOUR DCF ESTIMATES.

A. The table below summarizes my DCF estimates for GMLP. It is clear from this table that the DCF estimates of 8.6% are outliers.

DCF STUDY	ROE
DCF Natural Gas Utilities Value Line Growth	8.6%
DCF Natural Gas Utilities Zacks Growth	8.6%
DCF Combination Gas &Elec Utilities Value Line Growth	10.8%
DCF Combination Gas &Elec Utilities Zacks Growth	10.3%

E. FLOTATION COST ALLOWANCE

Q.62 DR. MORIN, PLEASE NOW TURN TO THE NEED FOR A FLOTATION COST ALLOWANCE.

A. All the market-based estimates reported above include an adjustment for flotation costs. The simple fact of the matter is that common equity capital is not free. Flotation costs associated with stock issues are exactly like the flotation costs associated with bonds and preferred stocks. Flotation costs are incurred; they are not expensed at the time of issue

and, therefore, must be recovered via a rate of return adjustment. This treatment is done routinely for bond and preferred stock issues by most regulatory bodies, including the Regie. Clearly, the common equity capital accumulated by the Company is not cost-free. The flotation cost allowance to the cost of common equity capital is discussed and applied in most corporate finance textbooks; it is unreasonable to ignore the need for such an adjustment.

Flotation costs are very similar to the closing costs on a home mortgage. In the case of issues of new equity, flotation costs represent the discounts that must be provided to place the new securities. Flotation costs have a direct and an indirect component. The direct component is the compensation to the security underwriter for his marketing/consulting services, for the risks involved in distributing the issue, and for any operating expenses associated with the issue (printing, legal, prospectus, *etc.*). The indirect component represents the downward pressure on the stock price as a result of the increased supply of stock from the new issue. The latter component is frequently referred to as "market pressure."

Investors must be compensated for flotation costs on an ongoing basis to the extent that such costs have not been expensed in the past, and therefore the adjustment must continue for the entire time that these initial funds are retained in the firm. Appendix B to my testimony discusses flotation costs in detail, and shows: (1) why it is necessary to apply an allowance of 5% to the dividend yield component of equity cost by dividing that yield by 0.95 (100% - 5%) to obtain the fair return on equity capital; (2) why the flotation adjustment is permanently required to avoid confiscation even if no

further stock issues are contemplated; and (3) that flotation costs are only recovered if the rate of return is applied to total equity, including retained earnings, in all future years.

By analogy, in the case of a bond issue, flotation costs are not expensed but are amortized over the life of the bond, and the annual amortization charge is embedded in the cost of service. The flotation adjustment is also analogous to the process of depreciation, which allows the recovery of funds invested in utility plant. The recovery of bond flotation expense continues year after year, irrespective of whether the Company issues new debt capital in the future, until recovery is complete, in the same way that the recovery of past investments in plant and equipment through depreciation allowances continues in the future even if no new construction is contemplated. In the case of common stock that has no finite life, flotation costs are not amortized. Thus, the recovery of flotation cost requires an upward adjustment to the allowed return on equity.

A simple example will illustrate the concept. A stock is sold for $100, and investors require a 10% return, that is, $10 of earnings. But if flotation costs are 5%, the Company nets $95 from the issue, and its common equity account is credited by $95. In order to generate the same $10 of earnings to the shareholders, from a reduced equity base, it is clear that a return in excess of 10% must be allowed on this reduced equity base, here 10.52%.

According to the empirical finance literature discussed in Appendix B, total flotation costs amount to 4% for the direct component and 1% for the market pressure component, for a total of 5% of gross proceeds. This in turn amounts to approximately 30 basis points, depending on the magnitude of the dividend yield component. To

illustrate, dividing the average expected dividend yield of approximately 5.0% for utility stocks by 0.95 yields 5.3%, which is 30 basis points higher.

GMLP's own experience in past common stock issues is quite consistent with the empirical evidence. The Company has issued approximately $455M since 1993, incurring approximately $26M of issue costs, most of which are tax deductible at a 30% rate. Assuming a five-year amortization period and a tax rate of 30%, the annual tax savings amount to $1.6M, for a net cost of slightly more than $23M. Dividing the latter by the amount of issues, the flotation cost allowance is $23/$455 = 5%, the same figure obtained from the empirical literature.

I note that the Regie has typically allowed 50 basis points for flotation costs in contrast to my 30 basis points.

Q.63 DOES YOUR 5% FLOTATION COST ALLOWANCE (30 BASIS POINTS) INCLUDE AN ALLOWANCE FOR MARKET BREAK?

A. No, it does not. The potential market price decline related to external market variables is often referred to as the allowance for "market break." In the interest of conservatism, I did not make an allowance for market break, although I agree with the merits of such an allowance, as does the Regie.

F. SUMMARY OF RESULTS

Q.64 PLEASE SUMMARIZE YOUR RESULTS AND RECOMMENDATION.

A. To arrive at my final recommendation, I performed four risk premium analyses. For the first two risk premium studies, I applied the CAPM and an empirical approximation of

the CAPM using current market data. The third and fourth risk premium analyses were performed on historical risk premium data from utility industry aggregate data. I also performed DCF analyses on two surrogates for the Company's natural gas delivery business. They are: a group of investment-grade natural gas distribution utilities and a group of investment-grade combination gas and electric utilities. The results from all the various tests are summarized in the table below.

METHODOLOGY	ROE
CAPM	9.4%
Empirical CAPM	9.9%
Historical Risk Premium S&P Utilities	10.2%
Historical Risk Premium Nat Gas	10.4%
Allowed Risk Premium	10.6%
DCF Natural Gas Utilities Value Line Growth	8.6%
DCF Natural Gas Utilities Zacks Growth	8.6%
DCF Combination Gas &Elec Utilities Value Line Growth	10.8%
DCF Combination Gas &Elec Utilities Zacks Growth	10.3%

The results range from 8.6% to 10.8% with a midpoint of 9.7%. The average result from all the tests is 9.9% as well as the truncated average. Based on these results, I believe that 9.8% is a reasonable estimate of the cost of common equity for an average risk natural gas utility.

Q.65 SHOULD THESE RESULTS BE ADJUSTED TO ACCOUNT FOR THE FACT THAT GMLP IS RISKIER THAN THE AVERAGE NATURAL GAS DISTRIBUTION UTILITY?

A. Yes, they should. The cost of equity estimates derived from the comparable groups reflect the risk for that particular group. There are two ways to adjust the results to

account for GMLP's higher relative risk: 1) adjust the ROE upward, or 2) impute a higher common equity ratio.

Q.66 BY HOW MUCH SHOULD THE ROE BE ADJUSTED UPWARD TO ACCOUNT FOR GMLP'S HIGHER RELATIVE RISK?

A. To the extent that the estimates from the above summary table are drawn from a group of less risky companies, the expected equity return applicable to the riskier GMLP is downward-biased. GMLP's particular investment risks are discussed below. I estimate the bias to be 40 basis points. Therefore, one way to account for GMLP's higher relative business risk is to increase the ROE estimate of 9.8% for the average risk natural gas distribution utility to 10.2%.

Q.67 HOW DID YOU ARRIVE AT THE 40 BASIS POINTS RISK ADJUSTMENT?

A. The 40 basis points adjustment is based on: 1) observed beta differentials, 2) differential common equity ratio requirements for S&P Business Risk Score, and 3) application of informed judgment.

The CAPM formula was referenced to approximate the return (cost of equity) differences implied by the differences in the betas between the average gas utility company and GMLP. The basic form of the CAPM, as discussed in my direct testimony, states that the return differential is given by the differential in beta times the MRP. Given the spreads in the beta estimates reported on Exhibit RAM-2, it is not unreasonable to assume that GMLP's beta would be 0.05 higher than its peers on account of its higher risks. To the extent that GMLP's beta would be approximately 0.05 higher than that of its peers, the return differential implied by the difference of 0.05 in beta is given by 0.05

times MRP. Using an estimate of 6.7% for the MRP, the return adjustment is close to 40basis points. I also note that in 2008 and 2009 at the height of the financial crisis, the yield required by bond investors exceeded the A-Rated Utility average by a similar amount. GMLP's salient distinguishing risk factors are addressed below.

Assuming that GMLP would be assigned a lower Business Risk Score relative to the average risk integrated utility, according to S&P utility-specific guidelines, the difference in required debt ratio between adjacent Business Risk categories is 3-4%. In other words, a utility with a business risk score of 3 would require a 3-4% lower common equity component of capital structure than a utility with a higher business risk score of 4 in order to offset the lower business risk. The 3%-4% higher common equity requirement translates into approximately a 30-40 basis points adjustment. The magnitude of this adjustment is discussed below in the capital structure section.

Based on all these considerations and professional judgment, I estimated the risk premium to be 40 basis points, raising the ROE from 9.8% to 10.2%.

Q.68 PLEASE DESCRIBE GMLP'S RELATIVE INVESTMENT RISK.

A. As has been consistently recognized by the Regie in several past rate decisions, GMLP possesses higher than average business risk, slightly higher than average financial risk, and below average regulatory risk. The net result is that GMLP is perceived by investors as a slightly above average risk energy utility.

Q.69 TO WHAT DO YOU ATTRIBUTE GMLP'S HIGHER BUSINESS RISK?

A. Intensity of competition in the Canadian energy industry is high, especially under current slow and uncertain macroeconomic conditions. Customers have become extremely

energy cost-conscious. Industrial customers have the option of relocating, should energy costs become prohibitive, and may also pursue alternative means of filling their energy needs. Consequently, forecasting demand, market behavior, financing requirements, earnings, and cash flows in this environment have become more difficult with time. Potential deviations from expected revenues can arise from price competition from alternate fuels. This competition is more acute for GMLP relative to other utilities, given the nature of its service territory, the composition of its revenue base, and competition from alternate fuels.

Relative to the industry, GMLP's revenue sources display a high degree of concentration among and within the various customer classes. Investors and bond rating agencies are quite aware GMLP has a large industrial customer load and is vulnerable because of its dependence on a concentrated industrial customer base. Within a given class, such as industrial, the concentration of revenues from say the top five, ten, or twenty business users is an additional measure of a company's vulnerability and exposure.

Approximately 50% of GMLP's load is generated from industrial customers. This proportion is much larger for GMLP than for other Canadian gas distributors, such as Enbridge Gas and Terasen Gas, and for other U.S. LDCs. Given the preponderance of highly cyclical industrial customers ("high-beta" customers) and the fact that large volume industrial users represent such an important proportion of GMLP's total revenues, the loss of these customers, actual or potential, has serious financial consequences for GMLP.

GMLP operates in a service territory whose economic fortunes are closely linked to the natural resource and commodity economy (metals, pulp and paper, chemical, manufacturing). GMLP's competitive position and profitability are very sensitive to changes in the prices of alternate fuels, as demonstrated dramatically in the recent past. This double-barreled effect on GMLP's revenues increases its business risks relative to other gas distributors. Compounding this risk, the long-term perspectives for GMLP are questionable, given the very low penetration ratio of natural gas in its territory, the aggressive competition from Hydro-Quebec, and the Green Fund levy on natural gas versus electricity which hampers the competitiveness of natural gas.

A recent development with serious long-term ramifications for business risk is the emergence of Hydro-Quebec as a formidable competitor who has focused its attention on GMLP’s industrial customers as a result of the cancellation of large electric power export contracts with the U.S..Given that electricity rates are lower in Quebec than in most other LDC territories, electricity possesses a significant competitive advantage in Quebec than in other LDC territories.

Potential deviations from expected revenues can also arise from customers switching from firm natural gas to another source of supply. Unanticipated switches impose additional risks of incurring take-or-pay liabilities with respect to transportation contracts and to a lesser extent with respect to gas supply contracting. Such switches are more probable for GMLP than other gas distributors with a smaller industrial customer base.

With respect to regulatory risk, the Regie's supportive regulatory apparatus

(normalization and deferral accounts, forward test years, and reduced regulatory lag) and its recognition of GMLP's unique risks have helped to partially offset the fundamental volatility inherent in GMLP's operations and improve the quality of regulation.

Q.70 PLEASE COMMENT ON THE COMPANY'S FINANCIAL RISKS.

A. With respect to financial risk, GMLP's capital structure for ratemaking purposes has not shifted significantly and its deemed common equity capitalization has not deviated much from 38.5% in recent years and is not reflective of its business risk. Given GMLP's higher than average business risks, it stands to reason that its financial risk should be lower, and its balance sheet stronger than its peers. Hence, my recommendation to boost GMLP's common equity ratio, as discussed below.

In summary, GMLP possesses higher than average demand and supply risks, a higher than average financial risk, and a favorable regulatory risk relative to other Canadian utilities. The net result of this medley of risk factors is that GMLP's total investment risk remains slightly above average relative to other energy utilities, hence my upward adjustment of 40 basis points to the ROE estimate obtained from the two company samples.

Q.71 IS THERE ANOTHER WAY OF ALLOWING FOR GMLP'S HIGHER RELATIVE RISK?

A. Yes, there is. Another way of recognizing GMLP's higher risk is to impute a higher amount of common capital to its capital structure while retaining the average ROE estimate of 9.8% obtained from the reference groups. I discuss this below.

IV. GMLP'S CAPITAL STRUCTURE

Q.72 WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this part of my testimony, I show that a capital structure target in a range of 40%-45% common equity is beneficial to both GMLP's investors and its ratepayers. Specifically, I show that this target capital structure is consistent with: 1) deemed capital structures for Canadian utilities, 2) the deemed and actual capital structures of U.S. energy utilities, 3) an optimal bond rating, 4) credit rating agencies' financial benchmarks consistent with an optimal bond rating, and 5) the business risk profile of GMLP.

I consider a common equity ratio target of 40%-45% to be more beneficial to both the company and its ratepayers. It is only normal and prudent management practice to lower financial risk when facing higher business risks as is the case with GMLP. It is important that GMLP's common equity ratio be increased to a level consistent with its business risk profile and in order to preserve flexibility in accessing capital markets on favorable terms, especially during periods of tight credit and adversity as was the case during the 2008-2009 financial crisis. Moreover, all else remaining constant, an enhanced equity base increases the probability of maintaining and GMLP's current bond rating, by placing the company closer to the guidelines stipulated by bond rating agencies for a strong A status, which I consider optimal for both the company and its ratepayers. An improved bond rating for GMLP not only would result in lower coupons on its debt issues but would also provide GMLP access to the debt markets during periods of instability in the capital markets on reasonable financial terms. I believe that a higher equity component in GMLP's capital structure would impact positively on GMLP's effort

to preserve and possibly improve its bond rating and maintain access to funds on reasonable terms.

Q.73 PLEASE DESCRIBE THE DEEMED CAPITAL STRUCTURES OF CANADIAN UTILITY COMPANIES.

A. As shown on Exhibit RAM-10 page 1, the median common equity ratio deemed by Canadian regulatory boards as of 12/2010 is 40%, with a standard deviation of 3.3%. Canadian utility deemed common equity ratios range from 30% to 47% with a midpoint of 38.5%. If we exclude the outlying estimate of 29.9% for the crown corporation Manitoba Hydro (Centra Gas Manitoba), the range is 36% to 47% with a midpoint of 42%, with GMLP located in the lower half of the range despite its higher business risk. Given its higher than average business risk, it stands to reason that GMLP's common equity ratio should lie in the upper half of the range rather than below the industry average.

Q.74 PLEASE DESCRIBE THE DEEMED CAPITAL STRUCTURES OF COMPARABLE U.S. UTILITY COMPANIES.

A. Exhibit RAM-11 displays the deemed common equity ratios for both natural gas and electric utility companies in the U.S. in nearly 600 decisions, as reported by Regulatory Research Associates (now SNL). The average deemed equity ratio is 48% for both gas and electric utilities, with little variation over the 1997-2010 period.

Q.75 WHAT ABOUT THE ACTUAL CAPITAL STRUCTURES OF THE U.S. ENERGY UTILITIES?

A. Exhibits RAM-12 and RAM-13 display the actual capital structures of the natural gas

group and the combination gas and electric group of companies. The average common equity ratio is close to 60% for the gas group and 45% for the combination gas and electric group. I note that these ratios do not include short-term debt.

I did examine another data source that reports utility capital structure ratios inclusive of short-term debt. Exhibits RAM-14 and RAM-15 display the common equity ratios of a large sample of natural gas utilities and combination gas and electric utilities, inclusive of short-term debt. The average common equity ratios are 50% and 45% for the two groups, respectively.

The two exhibits also show the average currently allowed ROE for these two large groups of energy utilities with which GMLP must compete with for capital. The average allowed ROE is 10.6% and 10.5% for the two groups.

Q.76 PLEASE DESCRIBE THE NOTION OF AN OPTIMAL BOND RATING

A. Yes. I have performed several studies and I have frequently testified on the optimal capital structure for various utilities[6]. One common theme in these studies is the desirability of a strong "A" bond rating from both the ratepayers' and investors' standpoint. This is especially true under adverse economic conditions, as was the case in 2008-2009.

The case for a strong A bond rating is not simply a question of lower yield, and, hence, lower cost of capital. There are several intangible costs and distress costs associated with a lower bond rating. Several examples of such costs follow.

[6] An optimal capital structure simulation model is presented in Chapter 18 of Dr. Morin's text, The NewRegulatory Finance, Public Utilities Reports Inc., Arlington, Va., 2006. This study shows the desirability of a strong A bond rating for ratepayers and investors. Chapters 16 and 17 present a comprehensive conceptual treatment of utility capital structures.

The need to maintain borrowing capacity is well known. During normal times, a utility company should conserve enough unused borrowing capacity so that during adversity periods it can use this capacity to avoid foregoing investment opportunities, selling stock at confiscatory prices, or jeopardizing its mandated obligation to serve. The yield advantage of a higher bond rating increases dramatically in adverse capital market conditions as witnessed during the 2008-2009 financial crisis.

Bond flotation costs, which must be borne by ratepayers, increase also as bond ratings decline, particularly in years of difficult financial markets. Not only is lower bond quality associated with higher yields, but lower-rated utility bonds also carry shorter maturities, especially in poor years. Finally, as bond ratings decline, the probability that a company will reduce the dollar amount or shorten the maturity of their bond issues increases dramatically; this in turn reduces the marketability of a bond issue, and hence increases its yield. Any reasonable quantification of such implicit costs reinforces the case for a strong A bond rating

The implication for GMLP is clear. Long-term achievement and maintenance of a strong A rating is in investors' and ratepayers' best interests. Capital structure targets should be therefore set so as to achieve such ratings.

Q.77 WHAT DO RATING AGENCIES CONSIDER IN EVALUATING FINANCIAL RISK?

A. Financial risk considerations include: accounting characteristics; financial governance/policies and risk tolerance; cash flow adequacy; capital structure and leverage; and liquidity/short-term factors.

Q.78 HOW DO RATING AGENCIES MEASURE FINANCIAL RISK?

A. To assess the financial risk of a company, the rating agencies examine a number of measures, including the following:

1. Funds from operations/interest coverage – measure of ability to pay interest from operational revenues;
2. Funds from operations/total debt – measure of ability to pay total debt from operational revenues;
3. Debt to EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization) – measure of debt repayment capacity; and
4. Total debt to total capital – measure of the financial leverage used by the company.

Q.79 HOW DOES S&P USE THESE RATIOS IN DETERMINING THE COMPANY'S CREDIT RATING?

A. Financial ratios are used, along with qualitative analyses, to determine a financial risk profile[7]:

[7] Standard & Poor's "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded," May 27, 2009.

Financial Risk Indicative Ratios			
	(FFO/Debt)(%)	**(Debt/EBITDA)(x)**	**(Debt/Capital)(%)**
Minimal	Greater than 60	Less than 1.5	Less than 25
Modest	45-60	1.5-2	25-35
Intermediate	30-45	2-3	**35-45**
Significant	20-30	3-4	45-50
Aggressive	12-20	4-5	50-60
Highly Leveraged	Less than 12	Greater than 5	Greater than 60

The financial risk profile evaluated in combination with the business risk profile is indicative of a given rating[8]:

[8] See footnote 7.

Business And Financial Risk Profile Matrix						
	Financial Risk Profile					
Business Risk Profile	**Minimal**	**Modest**	**Intermediate**	**Significant**	**Aggressive**	**Highly Leveraged**
Excellent	AAA	AA	A	A-	BBB	--
Strong	AA	A	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	--	BBB-	BB+	BB	BB-	B
Weak	--	--	BB	BB-	B+	B-
Vulnerable	--	--	--	B+	B	CCC+

S&P further notes that the rating matrix outcomes are indicative of what they typically observe, but are not meant to be precise indications or guarantees of future rating opinions. S&P goes on to state that positive and negative nuances in their analysis may lead to a notch higher or lower than the outcomes indicated in the various cells of the matrix.[9]

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

A. S&P classifies GMLP as having "excellent" business risk and "significant" financial risk. This profile indicates an implied rating of A-, that is, low single A, based on the table

[9] See S&P's Ratings Direct *Criteria Methodology: Business Risk/Financial Risk Matrix Expanded*, dated May 27, 2009.

above. Based on this profile, the debt ratio guideline is 45%-50%, that is, an equity ratio of 50%-55%. GMLP's equity ratio of 46% (common 38.5% plus preferred 7.5%) places the company outside those guidelines. My recommended common equity ratio in the range of 40%-45%, or 47.5% - 52.5% inclusive of preferred equity, would place the Company close to the bottom end of the S&P debt targets.

Q.81 DID YOU CONSIDER MOODY'S FINANCIAL GUIDELINES?

A. Yes, I did. Moody's has established debt/capital ratio guidelines of 35%-45%, that is, corresponding equity ratios of 55%-65% for an A rating[10]. My proposed 40%-45% equity ratio range, or 47.5%-52.5% inclusive of preferred equity, again would place the Company close but still below the required guidelines for an optimal bond rating.

In short, the bond rating agency guidelines support the conclusion that the Company's proposed common equity ratio of 40%-45% is conservative based on the level of business risk of GMLP. I reiterate that, relative to the U.S. gas distribution industry with which it must compete for capital, GMLP's financial position is far less advantageous, and its financial risks are higher as evidenced by its common equity ratio that is well below its U.S. peers.

For the myriad reasons discussed in this section of my testimony, I highly recommend that the Regie approve a common equity ratio in the range of 40% - 45% for GMLP, with a midpoint of 42.5% for ratemaking purposes.

Q.82 WHAT HAPPENS TO YOUR ROE RECOMMENDATION IF THE REGIE ADOPTS YOUR RECOMMENDED CAPITAL STRUCTURE?

A. My recommended ROE declines by 40 basis points from 10.2% to 9.8% in order to

[10] Moody's "Regulated Electric and Gas Utilities," August 2009.

reflect the lower relative financial risk associated with GMLP's less leveraged capital structure. It is a rudimentary tenet of basic finance that the smaller (greater) the amount of financial risk borne by common shareholders, the smaller (greater) the return required by shareholders in order to be compensated for the (diminished) added financial risk imparted by the smaller (greater) use of senior debt financing. In other words, the smaller (greater) the debt ratio, the smaller (greater) is the return required by equity investors. Low risk means low return, and high risk means high return!

Q.83 WHAT IS THE MAGNITUDE OF THE REQUIRED ADJUSTMENT TO ACCOUNT FOR GMLP'S LESS LEVERAGED CAPITAL STRUCTURE IF THE REGIE APPROVES THE COMPANY'S REQUESTED 42.5% COMMON EQUITY RATIO?

A. The differential between the actual deemed common equity component of GMLP and the proposed deemed common equity component is 4%, that is, 42.5% - 38.5% = 4.0%.

Several researchers have studied the empirical relationship between the cost of capital, capital-structure changes, and the value of the firm's securities.[11] The empirical studies suggest an average decrease (increase) of 76 basis points, or 7.6 basis points per one percentage point decrease (increase) in the debt ratio. The theoretical studies suggest an average decrease (increase) of 138 basis points, or 13.8 basis points per one percentage point decrease (increase) in the debt ratio. In other words, equity return requirements decrease (increase) between 7.6 and 13.8 basis points (midpoint about 10 basis points) for each decrease (increase) in the debt ratio by one percentage point, and

[11] *See* Roger A. Morin, *The New Regulatory Finance* (2006) Chapter 16 section 16-4 for a summary of the empirical studies of the relationship between cost of capital and leverage for public utilities.

more recent studies indicate that the upper end of that range is more indicative of the repercussions on required equity returns.

Therefore, the above-described research suggests that the recommended ROE of 10.2% be adjusted downward by 40 basis points (4 x 10) to reflect GMLP's less risky capital structure. The initial recommended ROE of 10.2% becomes 9.8% as a result of the adjustment for financial risk.

Q.84 DOES YOUR RECOMMENDED CAPITAL STRUCTURE INCREASE REVENUE REQUIREMENTS?

A. No, I do not believe it does. The increase in revenue requirements due to the lost interest tax shields from imputing less debt and more common equity ratio to the capital structure is more than offset by the decrease in overall capital cost, hence reducing revenue requirements.

Q.85 DR. MORIN, WHAT IS YOUR FINAL CONCLUSION REGARDING GMLP'S COST OF COMMON EQUITY CAPITAL?

A. Based on the results of all my analyses, the application of my professional judgment, and the risk circumstances of GMLP, it is my opinion that a just and reasonable return on the common equity capital of GMLP's natural gas utility operations is 10.2%, assuming the Company's existing capital structure and 9.8% assuming the adoption of a test year capital structure consisting of 42.5% common equity capital, the midpoint of my recommended long-term target of 40% - 45%.

V. ROE FORMULA

Q.86 DO YOU HAVE ANY COMMENTS ON THE REGIE'S AUTOMATIC ROE FORMULA?

A. Yes, I have three comments and recommendations on: 1) the risk premium proportionality factor, 2) the uni-dimensionality of the formula, and 3) the need to periodically recalibrate the formula.

Q.87 PLEASE COMMENT ON THE PROPORTIONALITY FACTOR.

A. Earlier in my testimony and in Exhibit RAM-5, I presented a comprehensive review of 600 ROE decisions relative to interest rate trends in the U.S. This analysis revealed a narrowing of the risk premium in times of high and volatile interest rates, and a widening of the premium as interest rates fall. The following statistical relationship between the risk premium (RP) and interest rates (YIELD) emerged over the 1986-2010 period decade:

$$RP = 8.2700 - \mathbf{0.5003}\ YIELD \qquad R^2 = 0.79$$

The relationship is highly statistically significant[12] as indicated by the very high R^2. The slope coefficient is negative and equals 0.50. Yet, the Regie's formula employs a proportionality factor of 0.75 instead of 0.50. In Canada, an almost identical relationship was found between 31 NEB ROE decisions and the contemporaneous level of Long Canada bond yields over the 1980-1994 period prior to the proliferation of ROE formulas in Canada. This evidence was presented in my expert testimony filed before the

[12] The coefficient of determination R^2, sometimes called the "goodness of fit measure" is a measure of the degree of explanatory power of a statistical relationship. It is simply the ratio of the explained portion to the total sum of squares. The higher R^2 the higher is the degree of the overall fit of the estimated regression equation to the sample data. The t-statistic is a standard measure of the statistical significance of an independent variable in a regression relationship. A t-value above 2.0 is considered highly significant.

Regie in 1998. The relationship was:

$$RP = 0.085 - \mathbf{0.49}\ YIELD \qquad R^2 = 0.75$$

In short, the level of the long-term Canada bond yield and the level of the risk premium should be consistent with the view that the risk premium changes 50 basis points for each 1% change in the bond yield in the opposite direction, and not 75 basis points. The published academic empirical evidence demonstrates that, beginning in 1980, risk premiums varied inversely with the level of interest rates - rising when rates fall and declining when interest rates rise, with a proportionality factor of about one-half.

Q.88 DOES THE ROE FORMULA ALLOW FOR CHANGES IN RISK?

A. No, it does not. The ROE single-factor formula, whereby only interest rates influence the cost of common equity, essentially transforms common stocks into bonds. The formula makes the ROE purely a function of interest rates, which in turn are influenced by fiscal and monetary policy, rather than business risks and management performance. By indexing ROE to long-term bonds, utility common stocks are essentially transformed into bonds.

Changes in risk are not reflected in the formula, despite the influence of risk on investor return, and the formula runs the risk of being insensitive to changes in market conditions and changes in risk perceptions. At an even more fundamental level, were it not for the Regie's incentive mechanism, the formula would remove any kind of incentive for management to be efficient and innovative.

One way to remedy the insensitivity to risk, is to index ROE to a utility bond yield index instead of long-term government bonds. Trends in utility cost of capital are

directly reflected in their cost of debt and are not directly captured by a ROE formula tied to government bond yields. This was especially germane in the 2008-2009 financial crisis where corporate spreads reached record levels. Because a utility's cost of capital is determined by its business and financial risks, it is reasonable to surmise that its cost of equity will track its cost of debt more closely than it will track the government bond yield. The Public Utilities Commission of California relies on such a formula to set the ROEs for the utilities it regulates[13]. The California mechanism adjusts the ROE by 50% of the change in utility bond yields, the latter measured by the relevant long-term utility bond yield matching the utility's bond rating. The Ontario Energy Board has a similar ROE formula relying on the change on long-term A rated utility bond yields[14].

Another alternative to make the formula responsive to risk changes is to add a second explanatory variable to the ROE formula, namely, the such as the spread between the yield on long-term Canada (LTC) bonds and the yield on long-term utility (LTU) bonds prevailing at the time of the forecast. The amended formula would become:

$$ROE_{t+1} = ROE_t + 0.50\,\Delta \text{LTC Yield Forecast} + 0.50\,\Delta \text{ LTU Bond Yield Spread}$$

Finally, I would recommend that the Regie revisit the formula every three years. The initial risk premium is a function of one particular set of circumstances prevailing in capital markets and in the economy at one period of time. It is important to revisit the formula periodically and recalibrate the formula should changes in economic/industry conditions over a full business and interest rate cycle warrant changes.

[13] See Public Utilities Commission of the State of California, *Decision Establishing a Multi-Year Cost of Capital Mechanism for the Major Energy Utilities*, May 29, 2008.
[14] See Ontario Energy Board Decision EB-2009-0084

Q.89 IF THE REGIE WERE TO ADOPT YOUR RECOMMENDED CHANGES TO THE FORMULA, SHOULD THE ALLOWED ROE BE RESET ACCORDINGLY?

A. Yes, it should. The formula adopted has to be internally consistent with the premises underlying the initial ("going-in") allowed ROE. It would be quite illogical to adopt the proposed revisions to the formula without resetting the allowed ROE at a level such that the past allowed ROEs since the inception of the formula account for the increase in sensitivity to changes in interest rates.

Q.90 FINALLY, DR. MORIN, IF CAPITAL MARKET CONDITIONS CHANGE SIGNIFICANTLY BETWEEN THE DATE OF FILING YOUR PREPARED TESTIMONY AND THE DATE YOUR ORAL TESTIMONY IS PRESENTED, WOULD THIS CAUSE YOU TO REVISE YOUR ESTIMATED COST OF EQUITY?

A. Yes. Interest rates and security prices do change over time, and risk premiums change also, although much more sluggishly. This is especially true in the current capital market environment of turbulence, volatility, and unpredictability. If substantial changes were to occur between the filing date and the time my oral testimony is presented, I will update my testimony accordingly.

Q.91 DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

APPENDIX A
CAPM, EMPIRICAL CAPM

The Capital Asset Pricing Model (CAPM) is a fundamental paradigm of finance. Simply put, the fundamental idea underlying the CAPM is that risk-averse investors demand higher returns for assuming additional risk, and higher-risk securities are priced to yield higher expected returns than lower-risk securities. The CAPM quantifies the additional return, or risk premium, required for bearing incremental risk. It provides a formal risk-return relationship anchored on the basic idea that only market risk matters, as measured by beta. According to the CAPM, securities are priced such that their:

EXPECTED RETURN = RISK-FREE RATE + RISK PREMIUM

Denoting the risk-free rate by R_F and the return on the market as a whole by R_M, the CAPM is:

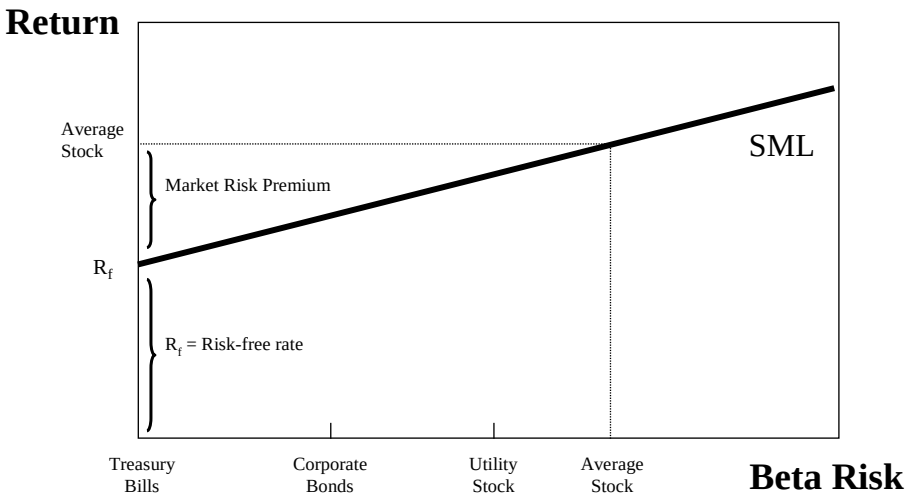
$$K = R_F + \beta(R_M - R_F) \quad (1)$$

Equation 1 is the CAPM expression which asserts that an investor expects to earn a return, K, that could be gained on a risk-free investment, R_F, plus a risk premium for assuming risk, proportional to the security's market risk, also known as beta, β, and the market risk premium, $(R_M - R_F)$, where R_M is the market return . The market risk premium $(R_M - R_F)$ can be abbreviated MRP so that the CAPM becomes:

$$K = R_F + \beta \times MRP \quad (2)$$

The CAPM risk-return relationship is depicted in the figure below and is typically labeled as the Security Market Line (SML) by the investment community.

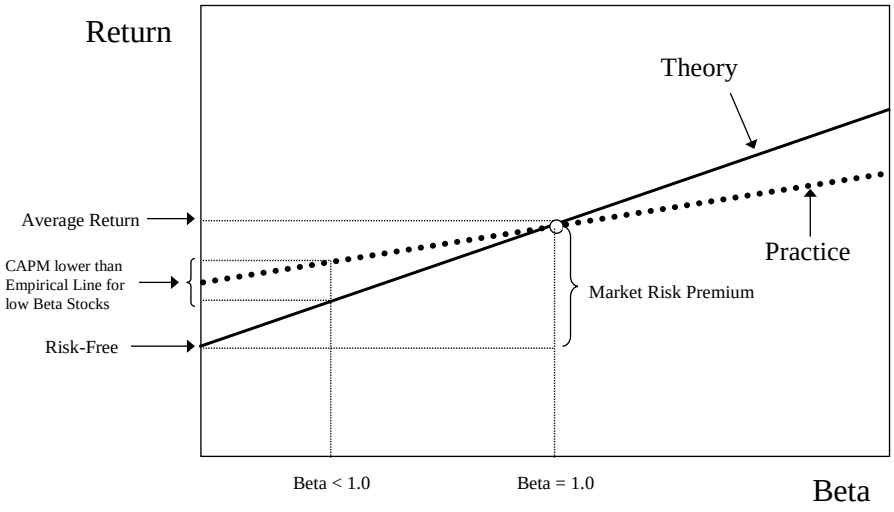
CAPM and Risk - Return in Capital Markets



A myriad empirical tests of the CAPM have shown that the risk-return tradeoff is not as steeply sloped as that predicted by the CAPM, however. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta: low-beta stocks tend to have higher returns and high-beta stocks tend to have lower risk returns than predicted by the CAPM. The difference between the CAPM and the type of relationship observed in the empirical studies is depicted in the figure below. This is one of the most widely known empirical findings of the finance literature. This extensive literature is summarized in Chapter 13 of Dr. Morin's book [Regulatory Finance, Public Utilities Report Inc., Arlington, VA, 1994].

Risk vs Return

Theory vs. Practice



A number of refinements and expanded versions of the original CAPM theory have been proposed to explain the empirical findings. These revised CAPMs typically produce a risk-return relationship that is flatter than the standard CAPM prediction. The following equation makes use of these empirical findings by flattening the slope of the risk-return relationship and increasing the intercept:

$$K = R_F + \alpha + \beta (MRP - \alpha) \quad (3)$$

where α is the "alpha" of the risk-return line, a constant determined empirically, and the other symbols are defined as before. Alternatively, Equation 3 can be written as follows:

$$K = R_F + a\,MRP + (1-a)\,\beta\,MRP \quad (4)$$

where a is a fraction to be determined empirically. Comparing Equations 3 and 4, it is easy to see that alpha equals ‘a’ times MRP, that is, $\alpha = a \times MRP$

Theoretical Underpinnings

The obvious question becomes what would produce a risk return relationship which is flatter than the CAPM prediction, or in other words, how do you explain the presence of "alpha" in the above equation. The exclusion of variables aside from beta would produce this result. Three such variables are noteworthy: dividend yield, skewness, and hedging potential.

The dividend yield effects stem from the differential taxation on corporate dividends and capital gains. The standard CAPM does not consider the regularity of dividends received by investors. Utilities generally maintain high dividend payout ratios relative to the market, and by ignoring dividend yield, the CAPM provides biased cost of capital estimates. To the extent that dividend income is taxed at a higher rate than capital gains, investors will require higher pre-tax returns in order to equalize the after-tax returns provided by high-yielding stocks (e.g. utility stocks) with those of low-yielding stocks. In other words, high-yielding stocks must offer investors higher pre-tax returns. Even if dividends and capital gains are undifferentiated for tax purposes, there is still a tax bias in favor of earnings retention (lower dividend payout), as capital gains taxes are paid only when gains are realized.

Empirical studies by Litzenberger and Ramaswamy (1979), Litzenberger et al. (1980) and Rosenberg and Marathe (1975) find that security returns are positively related to dividend yield as well as to beta. These results are consistent with after-tax extensions of the CAPM developed by Breenan (1973) and Litzenberger and Ramaswamy (1979) and suggest that the relationship between return, beta, and dividend yield should be estimated and employed to calculate the cost of equity capital.

As far as skewness is concerned, investors are more concerned with losing money than with total variability of return. If risk is defined as the probability of loss, it appears more logical to measure risk as the probability of achieving a return which is below the expected return. The traditional CAPM provides downward-biased estimates of cost of capital to the extent that these skewness effects are significant. As shown by Kraus and Litzenberger (1976), expected return depends on both on a stock's systematic risk (beta) and the systematic skewness. Empirical studies by Kraus and Litzenberger (1976),

Friend, Westerfield, and Granito (1978), and Morin (1981) found that, in addition to beta, skewness of returns has a significant negative relationship with security returns. This result is consistent with the skewness version of the CAPM developed by Rubinstein (1973) and Kraus and Litzenberger (1976).

This is particularly relevant for public utilities whose future profitability is constrained by the regulatory process on the upside and relatively unconstrained on the downside in the face of socio-political realities of public utility regulation. The process of regulation, by restricting the upward potential for returns and responding sluggishly on the downward side, may impart some asymmetry to the distribution of returns, and is more likely to result in utilities earning less, rather than more, than their cost of capital. The traditional CAPM provides downward-biased estimates of cost of capital to the extent that these skewness effects are significant.

As far as hedging potential is concerned, investors are exposed to another kind of risk, namely, the risk of unfavorable shifts in the investment opportunity set. Merton (1973) shows that investors will hold portfolios consisting of three funds: the risk-free asset, the market portfolio, and a portfolio whose returns are perfectly negatively correlated with the riskless asset so as to hedge against unforeseen changes in the future risk-free rate. The higher the degree of protection offered by an asset against unforeseen changes in interest rates, the lower the required return, and conversely. Merton argues that low beta assets, like utility stocks, offer little protection against changes in interest rates, and require higher returns than suggested by the standard CAPM.

Another explanation for the CAPM's inability to fully explain the process determining security returns involves the use of an inadequate or incomplete market index. Empirical studies to validate the CAPM invariably rely on some stock market index as a proxy for the true market portfolio. The exclusion of several asset categories from the definition of market index mis-specifies the CAPM and biases the results found using only stock market data. Kolbe and Read (1983) illustrate the biases in beta estimates which result from applying the CAPM to public utilities. Unfortunately, no comprehensive and easily accessible data exist for several classes of assets, such as mortgages and business investments, so that the exact relation between return and stock betas predicted by the CAPM does not exist. This suggests that the empirical relationship

between returns and stock betas is best estimated empirically (ECAPM) rather than by relying on theoretical and elegant CAPM models expanded to include missing assets effects. In any event, stock betas may be highly correlated with the true beta measured with the true market index.

Yet another explanation for the CAPM's inability to fully explain the observed risk-return tradeoff involves the possibility of constraints on investor borrowing that run counter to the assumptions of the CAPM. In response to this inadequacy, several versions of the CAPM have been developed by researchers. One of these versions is the so-called zero-beta, or two-factor, CAPM which provides for a risk-free return in a market where borrowing and lending rates are divergent. If borrowing rates and lending rates differ, or there is no risk-free borrowing or lending, or there is risk-free lending but no risk-free borrowing, then the CAPM has the following form:

$$K = R_Z + \beta(R_m - R_F)$$

The model, christened the zero-beta model, is analogous to the standard CAPM, but with the return on a minimum risk portfolio which is unrelated to market returns, R_Z, replacing the risk-free rate, R_F. The model has been empirically tested by Black, Jensen, and Scholes (1972), who found a flatter than predicted CAPM, consistent with the model and other researchers' findings.

The zero-beta CAPM cannot be literally employed in cost of capital projections, since the zero-beta portfolio is a statistical construct difficult to replicate.

Empirical Evidence

A summary of the empirical evidence on the magnitude of alpha is provided in the table below.

Empirical Evidence on the Alpha Factor		
Author	**Range of alpha**	**Period relied upon**
Fischer (1993)	-3.6% to 3.6%	1931-1991
Fischer, Jensen and Scholes (1972)	-9.61% to 12.24%	1931-1965
Fama and McBeth (1972)	4.08% to 9.36%	1935-1968
Fama and French (1992)	10.08% to 13.56%	1941-1990
Litzenberger and Ramaswamy (1979)	5.32% to 8.17%	
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 5.04%	1926-1978
Pettengill, Sundaram and Mathur (1995)	4.6%	
Morin (1994)	2.0%	1926-1984
Harris, Marston, Mishra, and O'Brien	2.0%	1983-1998

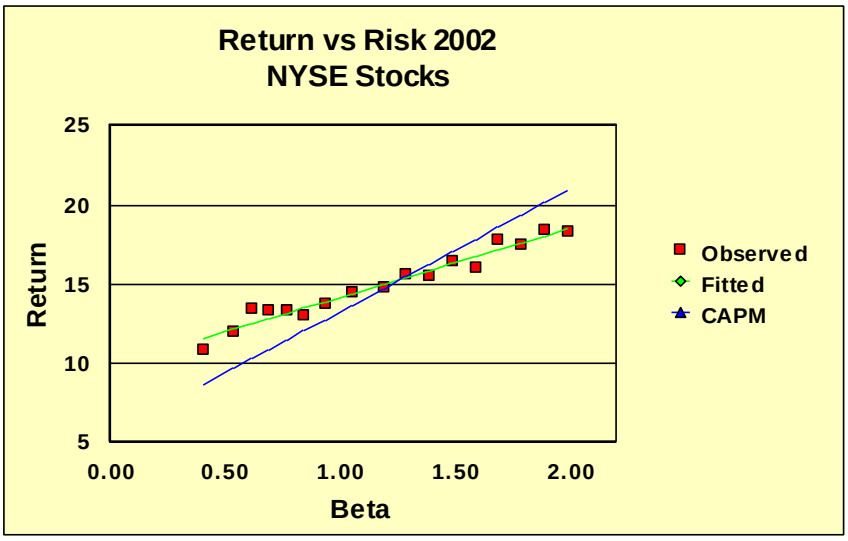
Given the observed magnitude of alpha, the empirical evidence indicates that the risk-return relationship is flatter than that predicted by the CAPM. Typical of the empirical evidence is the findings cited in Morin (1994) over the period 1926-1984 indicating that the observed expected return on a security is related to its risk by the following equation:

$$K = .0829 + .0520\,\beta$$

Given that the risk-free rate over the estimation period was approximately 6%, this relationship implies that the intercept of the risk-return relationship is higher than the 6% risk-free rate, contrary to the CAPM's prediction. Given that the average return on an average risk stock exceeded the risk-free rate by about 8.0% in that period, that is, the market risk premium ($R_M - R_F$) = 8%, the intercept of the observed relationship between return and beta exceeds the risk-free rate by about 2%, suggesting an alpha factor of 2%.

Most of the empirical studies cited in the above table utilize raw betas rather than Value Line adjusted betas because the latter were not available over most of the time periods covered in these studies. A study of the relationship between return and adjusted beta is reported on Table 6-7 in Ibbotson Associates Valuation Yearbook 2001. If we exclude the portfolio of very small cap stocks from the relationship due to significant size effects, the relationship between the arithmetic mean return and beta for the remaining portfolios is flatter than predicted and the intercept slightly higher than predicted by the CAPM, as shown on the graph below. It is noteworthy that the Ibbotson study relies on adjusted betas as stated on page 95 of the aforementioned study.

CAPM vs ECAPM

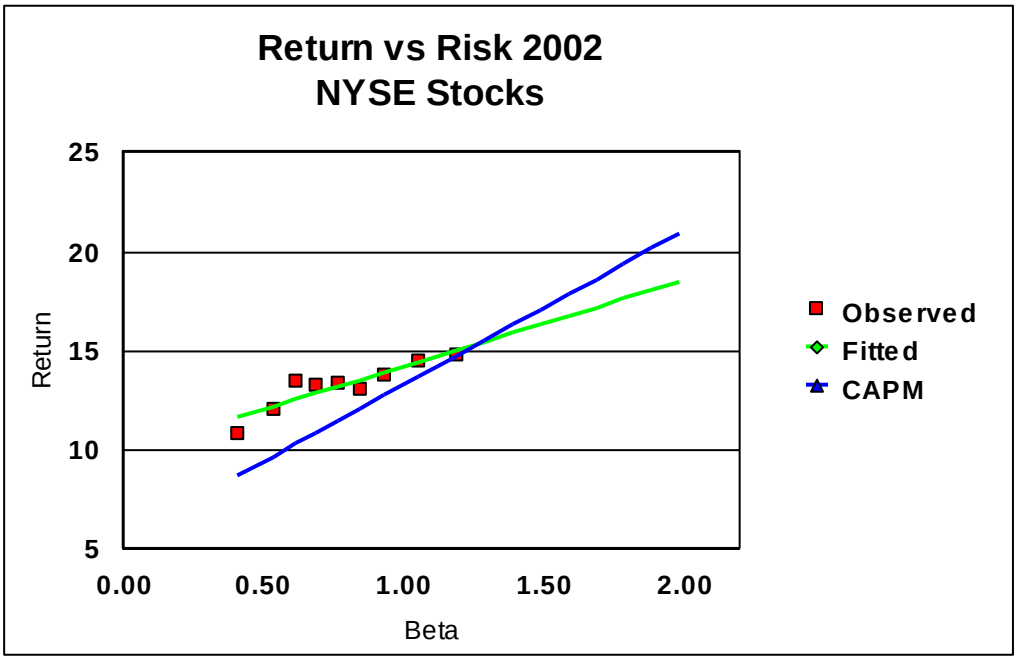


Another study by Morin in May 2002 provides empirical support for the ECAPM. All the stocks covered in the Value Line Investment Survey for Windows for which betas and returns data were available were retained for analysis. There were nearly 2000 such stocks. The expected return was measured as the total shareholder return ("TSR") reported by Value Line over the past ten years. The Value Line adjusted beta was also retrieved from the same data base. The nearly 2000 companies for which all data were available were ranked in ascending order of beta, from lowest to highest. In order to palliate measurement error, the nearly 2000 securities were grouped into ten portfolios of

approximately 180 securities for each portfolio. The average returns and betas for each portfolio were as follows:

Portfolio #	Beta	Return
portfolio 1	0.41	10.87
portfolio 2	0.54	12.02
portfolio 3	0.62	13.50
portfolio 4	0.69	13.30
portfolio 5	0.77	13.39
portfolio 6	0.85	13.07
portfolio 7	0.94	13.75
portfolio 8	1.06	14.53
portfolio 9	1.19	14.78
portfolio 10	1.48	20.78

It is clear from the graph below that the observed relationship between DCF returns and Value Line adjusted betas is flatter than that predicted by the plain vanilla CAPM. The observed intercept is higher than the prevailing risk-free rate of 5.7% while the slope is less than equal to the market risk premium of 7.7% predicted by the plain vanilla CAPM for that period.



In an article published in Financial Management, Harris, Marston, Mishra, and O'Brien ("HMMO") estimate ex ante expected returns for S&P 500 companies over the period 1983-1998[1]. HMMO measure the expected rate of return (cost of equity) of each dividend-paying stock in the S&P 500 for each month from January 1983 to August 1998 by using the constant growth DCF model. They then investigate the relation between the risk premium (expected return over the 20-year Treasury bond yield) estimates for each month to equity betas as of that same month (5-year raw betas).

The table below, drawn from HMMO Table 4, displays the average estimate prospective risk premium (Column 2) by industry and the corresponding beta estimate for that industry, both in raw form (Column 3) and adjusted form (Column 4). The latter were calculated with the traditional Value Line – Merrill Lynch – Bloomberg adjustment methodology by giving 1/3 weight of to a beta estimate of 1.00 and 2/3 weight to the raw beta estimate.

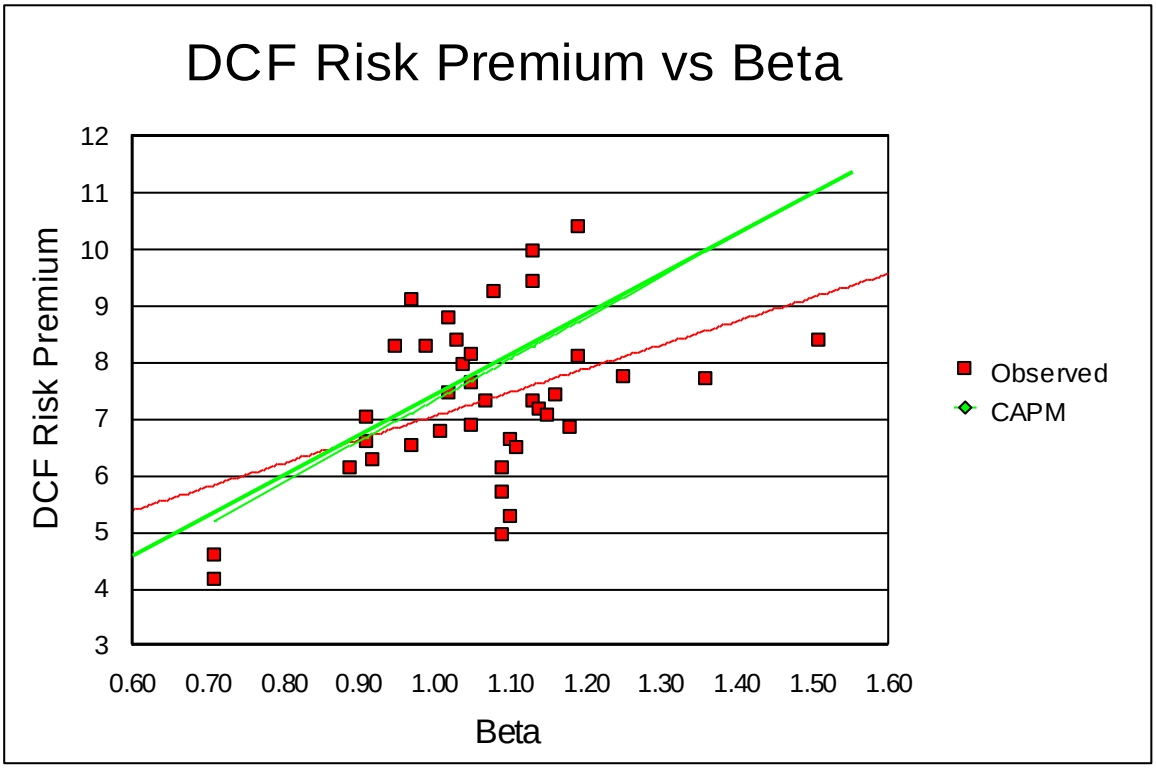
[1] Harris, R. S., Marston, F. C., Mishra, D. R., and O'Brien, T. J., "*Ex Ante* Cost of Equity Estimates of S&P 500 Firms: The Choice Between Global and Domestic CAPM," Financial

Table A-1 Risk Premium and Beta Estimates by Industry

	Industry	DCF Risk Premium	Raw Industry Beta	Adjusted Industry Beta
	(1)	**(2)**	**(3)**	**(4)**
1	Aero	6.63	1.15	1.10
2	Autos	5.29	1.15	1.10
3	Banks	7.16	1.21	1.14
4	Beer	6.60	0.87	0.91
5	BldMat	6.84	1.27	1.18
6	Books	7.64	1.07	1.05
7	Boxes	8.39	1.04	1.03
8	BusSv	8.15	1.07	1.05
9	Chems	6.49	1.16	1.11
10	Chips	8.11	1.28	1.19
11	Clths	7.74	1.37	1.25
12	Cnstr	7.70	1.54	1.36
13	Comps	9.42	1.19	1.13
14	Drugs	8.29	0.99	0.99
15	ElcEq	6.89	1.08	1.05
16	Energy	6.29	0.88	0.92
17	Fin	8.38	1.76	1.51
18	Food	7.02	0.86	0.91
19	Fun	9.98	1.19	1.13
20	Gold	4.59	0.57	0.71
21	Hlth	10.40	1.29	1.19
22	Hsld	6.77	1.02	1.01
23	Insur	7.46	1.03	1.02
24	LabEq	7.31	1.10	1.07
25	Mach	7.32	1.20	1.13
26	Meals	7.98	1.06	1.04
27	MedEq	8.80	1.03	1.02
28	Pap	6.14	1.13	1.09
29	PerSv	9.12	0.95	0.97
30	Retail	9.27	1.12	1.08
31	Rubber	7.06	1.22	1.15
32	Ships	1.95	0.95	0.97
33	Stee	4.96	1.13	1.09
34	Telc	6.12	0.83	0.89
35	Toys	7.42	1.24	1.16
36	Trans	5.70	1.14	1.09
37	Txtls	6.52	0.95	0.97
38	Util	4.15	0.57	0.71
39	Whlsl	8.29	0.92	0.95
	MEAN	**7.19**		

The observed statistical relationship between expected return and **adjusted beta** is shown in the graph below along with the CAPM prediction:

Management, Autumn 2003, pp. 51-66.



If the plain vanilla version of the CAPM is correct, then the intercept of the graph should be zero, recalling that the vertical axis represents returns in excess of the risk-free rate. Instead, the observed intercept is approximately 2%, that is approximately equal to 25% of the expected market risk premium of 7.2% shown at the bottom of Column 2 over the 1983-1998 period, as predicted by the ECAPM. The same is true for the slope of the graph. If the plain vanilla version of the CAPM is correct, then the slope of the relationship should equal the market risk premium of 7.2%. Instead, the observed slope of close to 5% is approximately equal to 75% of the expected market risk premium of 7.2%, as predicted by the ECAPM.

In short, the HMMO empirical findings are quite consistent with the predictions of the ECAPM.

Practical Implementation of the ECAPM

The empirical evidence reviewed above suggests that the expected return on a security is related to its risk by the following relationship:

$$K = R_F + \alpha + \beta (MRP - \alpha) \quad (5)$$

or, alternatively by the following equivalent relationship:

$$K = R_F + a\,MRP + (1-a)\,\beta\,MRP \quad (6)$$

The empirical findings support values of α from approximately 2% to 7%. If one is using the short-term U.S. Treasury Bills yield as a proxy for the risk-free rate, and given that utility stocks have lower than average betas, an alpha in the lower range of the empirical findings, 2% - 3% is reasonable, albeit conservative.

Using the long-term U.S. Treasury yield as a proxy for the risk-free rate, a lower alpha adjustment is indicated. This is because the use of the long-term U.S. Treasury yield as a proxy for the risk-free rate partially incorporates the desired effect of using the ECAPM[2]. An alpha in the range of 1% - 2% is therefore reasonable.

To illustrate, consider a utility with a beta of 0.80. The risk-free rate is 5%, the MRP is 7%, and the alpha factor is 2%. The cost of capital is determined as follows:

$$K = R_F + \alpha + \beta (MRP - \alpha)$$
$$K = 5\% + 2\% + 0.80(7\% - 2\%)$$
$$= 11\%$$

A practical alternative is to rely on the second variation of the ECAPM:

$$K = R_F + a\,MRP + (1-a)\,\beta\,MRP$$

[2] The Security Market Line (SML) using the long-term risk-free rate has a higher intercept and a flatter slope than the SML using the short-term risk-free rate

With an alpha of 2%, a MRP in the 6% - 8% range, the 'a" coefficient is 0.25, and the ECAPM becomes[3]:

$$K = R_F + 0.25\ MRP + 0.75\ \beta\ MRP$$

Returning to the numerical example, the utility's cost of capital is:

$$K = 5\% + 0.25 \times 7\% + 0.75 \times 0.80 \times 7\%$$

$$= 11\%$$

For reasonable values of beta and the MRP, both renditions of the ECAPM produce results that are virtually identical[4].

[3] Recall that alpha equals 'a' times MRP, that is, alpha = a MRP, and therefore a = alpha/MRP. If alpha is 2%, then a = 0.25

[4] In the Morin (1994) study, the value of "a" was actually derived by systematically varying the constant "a" in equation 6 from 0 to 1 in steps of 0.05 and choosing that value of 'a' that minimized the mean square error between the observed relationship between return and beta:

$$K = 0.0829 + .0520\ \beta$$

The value of a that best explained the observed relationship was 0.25.

REFERENCES

Black, Fischer, "Beta and Return," The Journal of Portfolio Management, Fall 1993, 8-18.

Black, Fischer, Michael C. Jensen and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests, from Studies in the theory of Capital Markets," in

Jensen, M. (ed.) Studies in the Theory of Capital Markets, Praeger, New York, 1972,79-121.

Breenan, M. (1973) "Taxes, Market Valuation, and Corporate Financial Policy," National Tax Journal, 23, 417-427.

Fama, Eugene F. and James D. MacBeth, "Risk, Returns and Equilibrium: Empirical Tests," Journal of Political Economy, September 1972, pp. 607-636.

Fama, Eugene F. and Kenneth R. French, "The Cross-Section of Expected Stock Returns," Journal of Finance, Vol. 47, June 1992, pp. 427-465.

Friend, I., Westerfield, R., and Granito, M. (1978) "New Evidence on the Capital Asset Pricing Model, Journal of Finance, 23, 903-916.

Harris, R. S., Marston, F. C., Mishra, D. R., and O'Brien, T. J., "Ex Ante Cost of Equity Estimates of S&P 500 Firms: The Choice Between Global and Domestic CAPM," Financial Management, Autumn 2003, pp. 51-66.

Kraus, A. and Litzenberger, R.H. (1976) "Skewness Preference and the Valuation of Risk Assets, Journal of Finance, 31, 1085-99.

Litzenberger, R. H. and Ramaswamy, K. "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence." Journal of Financial Economics, June 1979, 163-196.

Litzenberger, R. H., Ramaswamy, K. and Sosin, H. (1980) "On the CAPM Approach to the Estimation of a Public Utility's Cost of Equity Capital, Journal of Finance, 35, May 1980, 369-83.

Merton, R.C. (1973) "An Intertemporal Capital Asset Pricing Model", Econometrica, 41, 867-887.

Morin, R.A. (1981) "Intertemporal Market-Line Theory: An Empirical Test," Financial Review, Proceedings of the Eastern Finance Association, 1981.

Pettengill, Glenn N., Sridhar Sundaram and Ike Mathur, "The Conditional Relation between Beta and Returns," Journal of Financial and Quantitative Analysis, Vol. 30,No. 1, March 1995, pp. 101-116.

Rosenberg, V. and Marathe, V. (1975) "The Prediction of Investment Risk: Systematic and Residual Risk," Proceedings of the Seminar on the Analysis of Security Prices, Univ. of Chicago, 20, Nov. 1975.

Rubinstein, M.E. (1973) "A Mean-Variance Synthesis of Corporate Financial Theory, Journal of Financial Economics, March 1973, 167-82.

APPENDIX B

FLOTATION COST ALLOWANCE

To obtain the final cost of equity financing from the investors' expected rate of return, it is necessary to make allowance for underpricing, which is the sum of market pressure, costs of flotation, and underwriting fees associated with new issues. Allowance for market pressure should be made because large blocks of new stock may cause significant pressure on market prices even in stable markets. Allowance must also be made for company costs of flotation (including such items as printing, legal and accounting expenses) and for underwriting fees.

1. MAGNITUDE OF FLOTATION COSTS

According to empirical studies, underwriting costs and expenses average at least 4% of gross proceeds for utility stock offerings in the U.S. (See Logue & Jarrow: "Negotiations vs. Competitive Bidding in the Sale of Securities by Public Utilities", Financial Management, Fall 1978.) A study of 641 common stock issues by 95 electric utilities identified a flotation cost allowance of 5.0%. (See Borum & Malley: "Total Flotation Cost for Electric Company Equity Issues", Public Utilities Fortnightly, Feb. 20, 1986.)

Empirical studies suggest an allowance of 1% for market pressure in U.S. studies. Logue and Jarrow found that the absolute magnitude of the relative price decline due to market pressure was less than 1.5%. Bowyer and Yawitz examined 278 public utility stock issues and found an average market pressure of 0.72%. (See Bowyer & Yawitz, "The Effect of New Equity Issues on Utility Stock Prices", Public Utilities Fortnightly, May 22, 1980.)

Eckbo & Masulis ("Rights vs. Underwritten Stock Offerings: An Empirical Analysis", University of British Columbia, Working Paper No. 1208, Sept., 1987) found an average flotation cost of 4.175% for utility common stock offerings. Moreover, flotation costs increased progressively for

smaller size issues. They also found that the relative price decline due to market pressure in the days surrounding the announcement amounted to slightly more than 1.5%. In a classic and monumental study published in the prestigious Journal of Financial Economics by a prominent scholar, a market pressure effect of 3.14% for industrial stock issues and 0.75% for utility common stock issues was found (see Smith, C.W., "Investment Banking and the Capital Acquisition Process," Journal of Financial Economics 15, 1986). Other studies of market pressure are reported in Logue ("On the Pricing of Unseasoned Equity Offerings, Journal of Financial and Quantitative Analysis, Jan. 1973), Pettway ("The Effects of New Equity Sales Upon Utility Share Prices," Public Utilities Fortnightly, May 10 1984), and Reilly and Hatfield ("Investor Experience with New Stock Issues," Financial Analysts' Journal, Sept.-Oct. 1969). In the Pettway study, the market pressure effect for a sample of 368 public utility equity sales was in the range of 2% to 3%. Adding the direct and indirect effects of utility common stock issues, the indicated total flotation cost allowance is above 5.0%, corroborating the results of earlier studies.

As shown in the table below, a comprehensive empirical study by Lee, Lochhead, Ritter, and Zhao, “The Costs of Raising Capital,” Journal of Financial Research, Vol. XIX, NO. 1, Spring 1996, shows average direct flotation costs for equity offerings of 3.5% - 5% for stock issues between $60 and $500 million. Allowing for market pressure costs raises the flotation cost allowance to well above 5%.

FLOTATION COSTS: RAISING EXTERNAL CAPITAL

(Percent of Total Capital Raised)

Amount Raised in $ Millions	Average Flotation Cost: Common Stock	Average Flotation Cost: New Debt
$ 2 - 9. 99	13.28%	4.39%
10 - 19. 99	8.72	2.76
20 - 39. 99	6.93	2.42
40 - 59. 99	5.87	1.32
60 - 79. 99	5.18	2.34
80 - 99. 99	4.73	2.16
100 - 199. 99	4.22	2.31
200 - 499. 99	3.47	2.19
500 and Up	3.15	1.64

Note: Flotation costs for IPOs are about 17 percent of the value of common stock issued if the amount raised is less than $10 million and about 6 percent if more than $500 million is raised. Flotation costs are somewhat lower for utilities than others.

Source: Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *The Journal of Financial Research,* Spring 1996.

As far as Canadian studies are concerned, Shutt, T. and Williams, H. "Going to Market: The Cost of IPOs in Canada and the United States," The Conference Board of Canada, June 2000, report a 5.8% weighted average cost for a sample of Toronto Stock Exchange issues. Kooli, M. and Suret, J.M., "How Cost Effective are Canadian IP Markets?" *Canadian Investment Review* 16, no. 4, Winter 2003, found flotation costs of 7.3% for equity issues of $100 million or more. These results are for IPOs only and would presumably be lower for seasoned equity issues.

Therefore, based on empirical studies, total flotation costs including market pressure amount to approximately 5% of gross proceeds. I have therefore assumed a 5% gross total flotation cost allowance

in my cost of capital analyses.

2. APPLICATION OF THE FLOTATION COST ADJUSTMENT

The section below shows: 1) why it is necessary to apply an allowance of 5% to the dividend yield component of equity cost by dividing that yield by 0.95 (100% - 5%) to obtain the fair return on equity capital, and 2) why the flotation adjustment is permanently required to avoid confiscation even if no further stock issues are contemplated. Flotation costs are only recovered if the rate of return is applied to total equity, including retained earnings, in all future years.

Flotation costs are just as real as costs incurred to build utility plant. Fair regulatory treatment absolutely must permit the recovery of these costs. An analogy with bond issues is useful to understand the treatment of flotation costs in the case of common stocks.

In the case of a bond issue, flotation costs are not expensed but are rather amortized over the life of the bond, and the annual amortization charge is embedded in the cost of service. This is analogous to the process of depreciation, which allows the recovery of funds invested in utility plant. The recovery of bond flotation expense continues year after year, irrespective of whether the company issues new debt capital in the future, until recovery is complete. In the case of common stock that has no finite life, flotation costs are not amortized. Therefore, the recovery of flotation cost requires an upward adjustment to the allowed return on equity. Roger A. Morin, Regulatory Finance, Public Utilities Reports Inc., Arlington, Va., 1994, provides numerical illustrations that show that even if a utility does not contemplate any additional common stock issues, a flotation cost adjustment is still permanently required. Examples there also demonstrate that the allowance applies to retained earnings as well as to the original capital.

From the standard DCF model, the investor's required return on equity capital is expressed as:

$$K = D_1/P_o + g$$

If P_o is regarded as the proceeds per share actually received by the company from which dividends and earnings will be generated, that is, P_o equals B_o, the book value per share, then the company's required return is:

$$r = D_1/B_o + g$$

Denoting the percentage flotation costs 'f', proceeds per share B_o are related to market price P_o as follows:

$$P - fP = B_o$$

$$P(1 - f) = B_o$$

Substituting the latter equation into the above expression for return on equity, we obtain:

$$r = D_1/P(1-f) + g$$

that is, the utility's required return adjusted for underpricing. For flotation costs of 5%, dividing the expected dividend yield by 0.95 will produce the adjusted cost of equity capital. For a dividend yield of 6% for example, the magnitude of the adjustment is 32 basis points: .06/.95 = .0632.

In deriving DCF estimates of fair return on equity, it is therefore necessary to apply a conservative after-tax allowance of 5% to the dividend yield component of equity cost.

Even if no further stock issues are contemplated, the flotation adjustment is still permanently required to keep shareholders whole. Flotation costs are only recovered if the rate of return is applied to total equity, including retained earnings, in all future years, even if no future financing is contemplated. This is demonstrated by the numerical example contained in pages 7-9 of this Appendix. Moreover, even if the stock price, hence the DCF estimate of equity return, fully reflected the lack of permanent allowance, the company always nets less than the market price. Only the net proceeds from an equity issue are used to add to the rate base on which the investor earns. A permanent allowance for flotation costs must be authorized in order to insure that in each year the investor earns the required return on the total amount of capital actually supplied.

The example shown on pages 7-9 shows the flotation cost adjustment process using illustrative, yet realistic, market data. The assumptions used in the computation are shown on page 7. The stock is selling in the market for $25, investors expect the firm to pay a dividend of $2.25 that will grow at a rate of 5% thereafter. The traditional DCF cost of equity is thus k = D/P + g = 2.25/25 + .05 = 14%. The firm sells one share stock, incurring a flotation cost of 5%. The traditional DCF cost of equity adjusted

for flotation cost is thus ROE = D/P(1-f) + g = .09/.95 + .05 = 14.47%.

The initial book value (rate base) is the net proceeds from the stock issue, which are $23.75, that is, the market price less the 5% flotation costs. The example demonstrates that only if the company is allowed to earn 14.47% on rate base will investors earn their cost of equity of 14%. On page 8, Column 1 shows the initial common stock account, Column 2 the cumulative retained earnings balance, starting at zero, and steadily increasing from the retention of earnings. Total equity in Column 3 is the sum of common stock capital and retained earnings. The stock price in Column 4 is obtained from the seminal DCF formula: $D_1/(k - g)$. Earnings per share in Column 6 are simply the allowed return of 14.47% times the total common equity base. Dividends start at $2.25 and grow at 5% thereafter, which they must do if investors are to earn a 14% return. The dividend payout ratio remains constant, as per the assumption of the DCF model. All quantities, stock price, book value, earnings, and dividends grow at a 5% rate, as shown at the bottom of the relevant columns. Only if the company is allowed to earn 14.47% on equity do investors earn 14%. For example, if the company is allowed only 14%, the stock price drops from $26.25 to $26.13 in the second year, inflicting a loss on shareholders. This is shown on page 9. The growth rate drops from 5% to 4.53%. Thus, investors only earn 9% + 4.53% = 13.53% on their investment. It is noteworthy that the adjustment is always required each and every year, whether or not new stock issues are sold in the future, and that the allowed return on equity must be earned on total equity, including retained earnings, for investors to earn the cost of equity.

ASSUMPTIONS:

ISSUE PRICE =	$25.00
FLOTATION COST =	5.00%
DIVIDEND YIELD =	9.00%
GROWTH =	5.00%
EQUITY RETURN = (D/P + g)	**14.00%**
ALLOWED RETURN ON EQUITY = (D/P(1-f) + g)	**14.47%**

Yr	COMMON STOCK (1)	RETAINED EARNINGS (2)	TOTAL EQUITY (3)	STOCK PRICE (4)	MARKET / BOOK RATIO (5)	EPS (6)	DPS (7)	PAYOUT (8)
1	$23.75	$0.000	$23.750	$25.000	1.0526	$3.438	$2.250	65.45%
2	$23.75	$1.188	$24.938	$26.250	1.0526	$3.609	$2.363	65.45%
3	$23.75	$2.434	$26.184	$27.563	1.0526	$3.790	$2.481	65.45%
4	$23.75	$3.744	$27.494	$28.941	1.0526	$3.979	$2.605	65.45%
5	$23.75	$5.118	$28.868	$30.388	1.0526	$4.178	$2.735	65.45%
6	$23.75	$6.562	$30.312	$31.907	1.0526	$4.387	$2.872	65.45%
7	$23.75	$8.077	$31.827	$33.502	1.0526	$4.607	$3.015	65.45%
8	$23.75	$9.669	$33.419	$35.178	1.0526	$4.837	$3.166	65.45%
9	$23.75	$11.340	$35.090	$36.936	1.0526	$5.079	$3.324	65.45%
10	$23.75	$13.094	$36.844	$38.783	1.0526	$5.333	$3.490	65.45%
			5.00%	**5.00%**		**5.00%**	**5.00%**	

Yr	COMMON STOCK (1)	RETAINED EARNINGS (2)	TOTAL EQUITY (3)	STOCK PRICE (4)	MARKET/ BOOK RATIO (5)	EPS (6)	DPS (7)	PAYOUT (8)
1	$23.75	$0.000	$23.750	$25.000	1.0526	$3.325	$2.250	67.67%
2	$23.75	$1.075	$24.825	$26.132	1.0526	$3.476	$2.352	67.67%
3	$23.75	$2.199	$25.949	$27.314	1.0526	$3.633	$2.458	67.67%
4	$23.75	$3.373	$27.123	$28.551	1.0526	$3.797	$2.570	67.67%
5	$23.75	$4.601	$28.351	$29.843	1.0526	$3.969	$2.686	67.67%
6	$23.75	$5.884	$29.634	$31.194	1.0526	$4.149	$2.807	67.67%
7	$23.75	$7.225	$30.975	$32.606	1.0526	$4.337	$2.935	67.67%
8	$23.75	$8.627	$32.377	$34.082	1.0526	$4.533	$3.067	67.67%
9	$23.75	$10.093	$33.843	$35.624	1.0526	$4.738	$3.206	67.67%
10	$23.75	$11.625	$35.375	$37.237	1.0526	$4.952	$3.351	67.67%
			4.53%	**4.53%**		**4.53%**	**4.53%**	

CANADIAN UTILITY COMPANIES
BETA ESTIMATES

	Company Name	Beta Value Line	Beta Bloomberg
1	ATCO	0,65	0,73
2	Canadian Natural Ressources	1,25	1,42
3	Canadian Utilities	0,35	0,60
4	Emera	0,60	0,61
5	Enbridge	0,65	0,67
6	Fortis	0,60	0,67
7	TransAlta	0,70	0,83
8	TransCanada	0,90	0,64
10	AVERAGE	0,71	0,77
11	**TRUNCATED MEAN**	**0,68**	**0,69**

13 Sources: VLIA 3/2011
14 Bloomberg 3/2011

NATURAL GAS DISTRIBUTION UTILITIES
BETA ESTIMATES

	Company Name	Beta
1	AGL Resources	0,75
2	Atmos Energy	0,65
3	Laclede Group	0,60
4	Nicor Inc.	0,75
5	Northwest Nat. Gas	0,60
6	Piedmont Natural Gas	0,65
7	South Jersey Inds.	0,65
8	Southwest Gas	0,75
	WGL Holdings Inc.	0,65
10	**AVERAGE**	**0,67**

Source: VLIA 03/2011

0,06

COMBINATION GAS & ELECTRIC UTILITIES
BETA ESTIMATES

	Company Name	Beta
1	Alliant Energy	0,70
2	Ameren Corp.	0,80
3	Avista Corp.	0,70
4	CMS Energy Corp.	0,75
5	Consol. Edison	0,65
6	DTE Energy	0,75
7	Duke Energy	0,65
8	Entergy Corp.	0,70
9	Exelon Corp.	0,85
10	Northeast Utilities	0,70
11	NorthWestern Corp	0,70
12	NSTAR	0,65
13	NV Energy Inc.	0,85
14	OGE Energy	0,75
15	Pepco Holdings	0,80
16	PG&E Corp.	0,55
17	SCANA Corp.	0,70
18	TECO Energy	0,85
19	UniSource Energy	0,70
20	Wisconsin Energy	0,60
	AVERAGE	**0,72**

Source: VLIA 03/2011

0,081757

S&P UTILITY COMPANIES
BETA ESTIMATES

	Company Name	Beta
1	Ameren Corp.	0,80
2	CenterPoint Energy	0,80
3	CMS Energy Corp.	0,75
4	Consol. Edison	0,65
5	Dominion Resources	0,70
6	DTE Energy	0,75
7	Duke Energy	0,65
8	Edison Int'l	0,80
9	Entergy Corp.	0,70
10	Exelon Corp.	0,85
11	FirstEnergy Corp.	0,80
12	Integrys Energy	0,90
13	NextEra Energy	0,75
14	Pepco Holdings	0,80
15	PG&E Corp.	0,55
16	Pinnacle West Capital	0,70
17	PPL Corp.	0,65
18	Progress Energy	0,60
19	Public Serv. Enterprise	0,80
20	Sempra Energy	0,80
21	Southern Co.	0,55
22	TECO Energy	0,85
23	Wisconsin Energy	0,60
24	Xcel Energy Inc.	0,65
	AVERAGE	**0,74**

Source: VLIA 03/2011

Relative Standard Deviation Risk of Energy Utilities

Standard Deviation Measure of Risk

		Mean
1	S&P 500	35,5
2	Natural Gas Utilities	27,3
3	Combination Gas & Elec Ut	24,4

Standard Deviation Measure of Risk Relative to Aggregate Equity Market

		Mean
4	Natural Gas Utilities	0,77
5	Combination Gas & Elec Ut	0,69
	AVERAGE	**0,73**

Source: Value Line Investment Analyzer 3/2011

Utility Industry Historical Risk Premium

Line No.	Year	(1) Long-Term Government Bond Yield	(2) 20 year Maturity Bond Value	(3) Gain/Loss	(4) Interest	(5) Bond Total Return	(6) S&P Utility Index Return	(7) Utility Equity Risk Premium Over Bond Returns	(8) Utility Equity Risk Premium Over Bond Yields
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1931	4,07%	1 000,00						
2	1932	3,15%	1 135,75	135,75	40,70	17,64%	-0,54%	-18,18%	-3,69%
3	1933	3,36%	969,60	-30,40	31,50	0,11%	-21,87%	-21,98%	-25,23%
4	1934	2,93%	1 064,73	64,73	33,60	9,83%	-20,41%	-30,24%	-23,34%
5	1935	2,76%	1 025,99	25,99	29,30	5,53%	76,63%	71,10%	73,87%
6	1936	2,55%	1 032,74	32,74	27,60	6,03%	20,69%	14,66%	18,14%
7	1937	2,73%	972,40	-27,60	25,50	-0,21%	-37,04%	-36,83%	-39,77%
8	1938	2,52%	1 032,83	32,83	27,30	6,01%	22,45%	16,44%	19,93%
9	1939	2,26%	1 041,65	41,65	25,20	6,68%	11,26%	4,58%	9,00%
10	1940	1,94%	1 052,84	52,84	22,60	7,54%	-17,15%	-24,69%	-19,09%
11	1941	2,04%	983,64	-16,36	19,40	0,30%	-31,57%	-31,87%	-33,61%
12	1942	2,46%	933,97	-66,03	20,40	-4,56%	15,39%	19,95%	12,93%
13	1943	2,48%	996,86	-3,14	24,60	2,15%	46,07%	43,92%	43,59%
14	1944	2,46%	1 003,14	3,14	24,80	2,79%	18,03%	15,24%	15,57%
15	1945	1,99%	1 077,23	77,23	24,60	10,18%	53,33%	43,15%	51,34%
16	1946	2,12%	978,90	-21,10	19,90	-0,12%	1,26%	1,38%	-0,86%
17	1947	2,43%	951,13	-48,87	21,20	-2,77%	-13,16%	-10,39%	-15,59%
18	1948	2,37%	1 009,51	9,51	24,30	3,38%	4,01%	0,63%	1,64%
19	1949	2,09%	1 045,58	45,58	23,70	6,93%	31,39%	24,46%	29,30%
20	1950	2,24%	975,93	-24,07	20,90	-0,32%	3,25%	3,57%	1,01%
21	1951	2,69%	930,75	-69,25	22,40	-4,69%	18,63%	23,32%	15,94%
22	1952	2,79%	984,75	-15,25	26,90	1,17%	19,25%	18,08%	16,46%
23	1953	2,74%	1 007,66	7,66	27,90	3,56%	7,85%	4,29%	5,11%
24	1954	2,72%	1 003,07	3,07	27,40	3,05%	24,72%	21,67%	22,00%
25	1955	2,95%	965,44	-34,56	27,20	-0,74%	11,26%	12,00%	8,31%
26	1956	3,45%	928,19	-71,81	29,50	-4,23%	5,06%	9,29%	1,61%
27	1957	3,23%	1 032,23	32,23	34,50	6,67%	6,36%	-0,31%	3,13%
28	1958	3,82%	918,01	-81,99	32,30	-4,97%	40,70%	45,67%	36,88%
29	1959	4,47%	914,65	-85,35	38,20	-4,71%	7,49%	12,20%	3,02%
30	1960	3,80%	1 093,27	93,27	44,70	13,80%	20,26%	6,46%	16,46%
31	1961	4,15%	952,75	-47,25	38,00	-0,92%	29,33%	30,25%	25,18%
32	1962	3,95%	1 027,48	27,48	41,50	6,90%	-2,44%	-9,34%	-6,39%
33	1963	4,17%	970,35	-29,65	39,50	0,99%	12,36%	11,37%	8,19%
34	1964	4,23%	991,96	-8,04	41,70	3,37%	15,91%	12,54%	11,68%
35	1965	4,50%	964,64	-35,36	42,30	0,69%	4,67%	3,98%	0,17%
36	1966	4,55%	993,48	-6,52	45,00	3,85%	-4,48%	-8,33%	-9,03%
37	1967	5,56%	879,01	-120,99	45,50	-7,55%	-0,63%	6,92%	-6,19%
38	1968	5,98%	951,38	-48,62	55,60	0,70%	10,32%	9,62%	4,34%
39	1969	6,87%	904,00	-96,00	59,80	-3,62%	-15,42%	-11,80%	-22,29%
40	1970	6,48%	1 043,38	43,38	68,70	11,21%	16,56%	5,35%	10,08%
41	1971	5,97%	1 059,09	59,09	64,80	12,39%	2,41%	-9,98%	-3,56%
42	1972	5,99%	997,69	-2,31	59,70	5,74%	8,15%	2,41%	2,16%
43	1973	7,26%	867,09	-132,91	59,90	-7,30%	-18,07%	-10,77%	-25,33%
44	1974	7,60%	965,33	-34,67	72,60	3,79%	-21,55%	-25,34%	-29,15%
45	1975	8,05%	955,63	-44,37	76,00	3,16%	44,49%	41,33%	36,44%
46	1976	7,21%	1 088,25	88,25	80,50	16,87%	31,81%	14,94%	24,60%
47	1977	8,03%	919,03	-80,97	72,10	-0,89%	8,64%	9,53%	0,61%
48	1978	8,98%	912,47	-87,53	80,30	-0,72%	-3,71%	-2,99%	-12,69%
49	1979	10,12%	902,99	-97,01	89,80	-0,72%	13,58%	14,30%	3,46%
50	1980	11,99%	859,23	-140,77	101,20	-3,96%	15,08%	19,04%	3,09%
51	1981	13,34%	906,45	-93,55	119,90	2,63%	11,74%	9,11%	-1,60%
52	1982	10,95%	1 192,38	192,38	133,40	32,58%	26,52%	-6,06%	15,57%
53	1983	11,97%	923,12	-76,88	109,50	3,26%	20,01%	16,75%	8,04%
54	1984	11,70%	1 020,70	20,70	119,70	14,04%	26,04%	12,00%	14,34%
55	1985	9,56%	1 189,27	189,27	117,00	30,63%	33,05%	2,42%	23,49%
56	1986	7,89%	1 166,63	166,63	95,60	26,22%	28,53%	2,31%	20,64%
57	1987	9,20%	881,17	-118,83	78,90	-3,99%	-2,92%	1,07%	-12,12%
58	1988	9,18%	1 001,82	1,82	92,00	9,38%	18,27%	8,89%	9,09%

(11)

Utility Industry Historical Risk Premium

Line No.	Year	(1) Long-Term Government Bond Yield (1)	(2) 20 year Maturity Bond Value (2)	(3) Gain/Loss (3)	(4) Interest (4)	(5) Bond Total Return (5)	(6) S&P Utility Index Return (6)	(7) Utility Equity Risk Premium Over Bond Returns (7)	(8) Utility Equity Risk Premium Over Bond Yields (8)
59	1989	8,16%	1 099,75	99,75	91,80	19,16%	47,80%	28,64%	39,64%
60	1990	8,44%	973,17	-26,83	81,60	5,48%	-2,57%	-8,05%	-11,01%
61	1991	7,30%	1 118,94	118,94	84,40	20,33%	14,61%	-5,72%	7,31%
62	1992	7,26%	1 004,19	4,19	73,00	7,72%	8,10%	0,38%	0,84%
63	1993	6,54%	1 079,70	79,70	72,60	15,23%	14,41%	-0,82%	7,87%
64	1994	7,99%	856,40	-143,60	65,40	-7,82%	-7,94%	-0,12%	-15,93%
65	1995	6,03%	1 225,98	225,98	79,90	30,59%	42,15%	11,56%	36,12%
66	1996	6,73%	923,67	-76,33	60,30	-1,60%	3,14%	4,74%	-3,59%
67	1997	6,02%	1 081,92	81,92	67,30	14,92%	24,69%	9,77%	18,67%
68	1998	5,42%	1 072,71	72,71	60,20	13,29%	14,82%	1,53%	9,40%
69	1999	6,82%	848,41	-151,59	54,20	-9,74%	-8,85%	0,89%	-15,67%
70	2000	5,58%	1 148,30	148,30	68,20	21,65%	59,70%	38,05%	54,12%
71	2001	5,75%	979,95	-20,05	55,80	3,57%	-30,41%	-33,98%	-36,16%
72	2002	4,84%	1 115,77	115,77	57,50	17,33%	-30,04%	-47,37%	-34,88%
73	2003	5,11%	966,42	-33,58	48,40	1,48%	26,11%	24,63%	21,00%
74	2004	4,84%	1 034,35	34,35	51,10	8,54%	24,22%	15,68%	19,38%
75	2005	4,61%	1 029,84	29,84	48,40	7,82%	16,79%	8,97%	12,18%
76	2006	4,91%	962,06	-37,94	46,10	0,82%	20,95%	20,13%	16,04%
77	2007	4,50%	1 053,70	53,70	49,10	10,28%	19,36%	9,08%	14,86%
78	2008	3,03%	1 219,28	219,28	45,00	26,43%	-28,99%	-55,42%	-32,02%
79	2009	4,58%	798,39	-201,61	30,30	-17,13%	11,94%	29,07%	7,36%
80	2010	4,25%	1 044,16	44,16	45,80	9,00%	5,49%	-3,51%	1,24%
80	**Mean**							**5,5%**	**5,7%**

(11)

Source: Bloomberg Web site: Standard & Poors Utility Stock Index % Annual Change, Dec. to Dec.
Dec. Bond yields from Ibbotson Associates 2011 Valuation Yearbook Table A-9 Long-Term Government Bonds Yields

NATURAL GAS UTILITY INDUSTRY HISTORICAL RISK PREMIUM

Line No.	Year	Long-Term Government Bond Yield (1)	20 year Maturity Bond Value (2)	Gain/Loss (3)	Interest (4)	Bond Total Return (5)	Moody's Natural Gas Distribution Stock Index (6)	Dividend (7)	Capital Gain/(Loss) % Growth (8)	Yield (9)	Stock Total Return (10)	Utility Equity Risk Premium Over Bond Returns (11)	Utility Equity Risk Premium Over Bond Yields (12)
1	1954	2,72%	1 000,00				26,47						
2	1955	2,95%	965,44	-34,56	27,20	-0,74%	28,10	1,38	6,16%	5,21%	11,37%	12,11%	8,42%
3	1956	3,45%	928,19	-71,81	29,50	-4,23%	28,23	1,48	0,46%	5,27%	5,73%	9,96%	2,28%
4	1957	3,23%	1 032,23	32,23	34,50	6,67%	25,78	1,49	-8,68%	5,28%	-3,40%	-10,07%	-6,63%
5	1958	3,82%	918,01	-81,99	32,30	-4,97%	38,71	1,57	50,16%	6,09%	56,25%	61,21%	52,43%
6	1959	4,47%	914,65	-85,35	38,20	-4,71%	39,59	1,66	2,27%	4,29%	6,56%	11,28%	2,09%
7	1960	3,80%	1 093,27	93,27	44,70	13,80%	48,21	1,84	21,77%	4,65%	26,42%	12,62%	22,62%
8	1961	4,15%	952,75	-47,25	38,00	-0,92%	64,96	1,94	34,74%	4,02%	38,77%	39,69%	34,62%
9	1962	3,95%	1 027,48	27,48	41,50	6,90%	59,73	2,02	-8,05%	3,11%	-4,94%	-11,84%	-8,89%
10	1963	4,17%	970,35	-29,65	39,50	0,99%	64,62	2,18	8,19%	3,65%	11,84%	10,85%	7,67%
11	1964	4,23%	991,96	-8,04	41,70	3,37%	68,24	2,30	5,60%	3,56%	9,16%	5,80%	4,93%
12	1965	4,50%	964,64	-35,36	42,30	0,69%	64,31	2,48	-5,76%	3,63%	-2,12%	-2,82%	-6,62%
13	1966	4,55%	993,48	-6,52	45,00	3,85%	53,50	2,61	-16,81%	4,06%	-12,75%	-16,60%	-17,30%
14	1967	5,56%	879,01	-120,99	45,50	-7,55%	50,49	2,74	-5,63%	5,12%	-0,50%	7,04%	-6,06%
15	1968	5,98%	951,38	-48,62	55,60	0,70%	53,80	2,81	6,56%	5,57%	12,12%	11,42%	6,14%
16	1969	6,87%	904,00	-96,00	59,80	-3,62%	43,88	2,93	-18,44%	5,45%	-12,99%	-9,37%	-19,86%
17	1970	6,48%	1 043,38	43,38	68,70	11,21%	52,33	3,01	19,26%	6,86%	26,12%	14,91%	19,64%
18	1971	5,97%	1 059,09	59,09	64,80	12,39%	47,86	3,07	-8,54%	5,87%	-2,68%	-15,06%	-8,65%
19	1972	5,99%	997,69	-2,31	59,70	5,74%	53,54	3,12	11,87%	6,52%	18,39%	12,65%	12,40%
20	1973	7,26%	867,09	-132,91	59,90	-7,30%	43,43	3,28	-18,88%	6,13%	-12,76%	-5,46%	-20,02%
21	1974	7,60%	965,33	-34,67	72,60	3,79%	29,71	3,34	-31,59%	7,69%	-23,90%	-27,69%	-31,50%
22	1975	8,05%	955,63	-44,37	76,00	3,16%	38,29	3,48	28,88%	11,71%	40,59%	37,43%	32,54%
23	1976	7,21%	1 088,25	88,25	80,50	16,87%	51,80	3,70	35,28%	9,66%	44,95%	28,07%	37,74%
24	1977	8,03%	919,03	-80,97	72,10	-0,89%	50,88	3,93	-1,78%	7,59%	5,81%	6,70%	-2,22%
25	1978	8,98%	912,47	-87,53	80,30	-0,72%	45,97	4,18	-9,65%	8,22%	-1,43%	-0,71%	-10,41%
26	1979	10,12%	902,99	-97,01	89,80	-0,72%	53,50	4,44	16,38%	9,66%	26,04%	26,76%	15,92%
27	1980	11,99%	859,23	-140,77	101,20	-3,96%	56,61	4,68	5,81%	8,75%	14,56%	18,52%	2,57%
28	1981	13,34%	906,45	-93,55	119,90	2,63%	53,50	5,12	-5,49%	9,04%	3,55%	0,92%	-9,79%
29	1982	10,95%	1 192,38	192,38	133,40	32,58%	50,62	5,39	-5,38%	10,07%	4,69%	-27,89%	-6,26%
30	1983	11,97%	923,12	-76,88	109,50	3,26%	55,79	5,55	10,21%	10,96%	21,18%	17,92%	9,21%
31	1984	11,70%	1 020,70	20,70	119,70	14,04%	69,70	5,88	24,93%	10,54%	35,47%	21,43%	23,77%
32	1985	9,56%	1 189,27	189,27	117,00	30,63%	76,58	6,22	9,87%	8,92%	18,79%	-11,83%	9,23%
33	1986	7,89%	1 166,63	166,63	95,60	26,22%	90,89	5,71	18,69%	7,46%	26,14%	-0,08%	18,25%
34	1987	9,20%	881,17	-118,83	78,90	-3,99%	77,25	6,02	-15,01%	6,62%	-8,38%	-4,39%	-17,58%
35	1988	9,18%	1 001,82	1,82	92,00	9,38%	86,76	6,30	12,31%	8,16%	20,47%	11,08%	11,29%
36	1989	8,16%	1 099,75	99,75	91,80	19,16%	117,05	6,58	34,91%	7,58%	42,50%	23,34%	34,34%
37	1990	8,44%	973,17	-26,83	81,60	5,48%	108,86	6,84	-7,00%	5,84%	-1,15%	-6,63%	-9,59%
38	1991	7,30%	1 118,94	118,94	84,40	20,33%	124,32	6,99	14,20%	6,42%	20,62%	0,29%	13,32%
39	1992	7,26%	1 004,19	4,19	73,00	7,72%	138,79	7,14	11,64%	5,74%	17,38%	9,66%	10,12%
40	1993	6,54%	1 079,70	79,70	72,60	15,23%	154,06	7,30	11,00%	5,26%	16,26%	1,03%	9,72%
41	1994	7,99%	856,40	-143,60	65,40	-7,82%	126,96	7,44	-17,59%	4,83%	-12,76%	-4,94%	-20,75%
42	1995	6,03%	1 225,98	225,98	79,90	30,59%	155,94	7,56	22,83%	5,95%	28,78%	-1,81%	22,75%
43	1996	6,73%	923,67	-76,33	60,30	-1,60%	166,64	7,91	6,86%	5,07%	11,93%	13,54%	5,20%
44	1997	6,02%	1 081,92	81,92	67,30	14,92%	191,04	8,02	14,64%	4,81%	19,46%	4,53%	13,44%
45	1998	5,42%	1 072,71	72,71	60,20	13,29%	177,24	8,13	-7,22%	4,26%	-2,97%	-16,26%	-8,39%
46	1999	6,82%	848,41	-151,59	54,20	-9,74%	166,84	8,22	-5,87%	4,64%	-1,23%	8,51%	-8,05%
47	2000	5,58%	1 148,30	148,30	68,20	21,65%	200,68	8,22	20,28%	4,93%	25,21%	3,56%	19,63%
48	2001	5,75%	979,95	61,94	51,23	11,87%	209,67	8,22	4,48%	4,10%	8,58%	-3,29%	2,83%
	MEAN					**6,5%**					**12,2%**	**5,7%**	**5,2%**

Source Mergent's (Moody's) Public Utility Manual 2002 December stock prices and dividends
Bond yields from Ibbotson Associates (now Morningstar) Valuation Yearbook Table B-9 Long-Term Government Bonds Yields December each year.

Allowed Risk Premiums
Equity Risk Premium - Treasury Bond

Line	No. of Decisions	Date	Treasury Bond Yield[1] (1)	Authorized Nat Gas Returns[2] (2)	Indicated Risk Premium (3)
1		1986	7,89%	12,74%	4,9%
2	29	1987	9,20%	12,85%	3,7%
3	31	1988	9,18%	12,88%	3,7%
4	31	1989	8,16%	12,97%	4,8%
5	31	1990	8,44%	12,67%	4,2%
6	35	1991	7,30%	12,46%	5,2%
7	29	1992	7,26%	12,01%	4,8%
8	45	1993	6,54%	11,35%	4,8%
9	28	1994	7,99%	11,35%	3,4%
10	16	1995	6,03%	11,43%	5,4%
11	20	1996	6,73%	11,19%	4,5%
12	13	1997	6,02%	11,29%	5,3%
13	10	1998	5,42%	11,51%	6,1%
14	9	1999	6,82%	10,66%	3,8%
15	12	2000	5,58%	11,39%	5,8%
16	7	2001	5,75%	10,95%	5,2%
17	21	2002	4,84%	11,03%	6,2%
18	25	2003	5,11%	10,99%	5,9%
19	20	2004	4,84%	10,59%	5,8%
20	26	2005	4,61%	10,46%	5,9%
21	16	2006	4,91%	10,43%	5,5%
22	10	2007	4,50%	10,24%	5,7%
23	30	2008	3,03%	10,37%	7,3%
24	29	2009	4,58%	10,19%	5,6%
25	36	2010	4,25%	10,08%	5,8%
27	559	**Average**	**6,2%**	**11,4%**	**5,2%**

Sources:
[1] Morninstar 2010 Valuation Yearbook Table B-9
[2] SNL (Regulatory Research Associates), *Regulatory Focus.* Jan. 86 - Jan. 11

NATURAL GAS UTILITIES
DCF ANALYSIS: ANALYSTS' GROWTH FORECASTS

	Company	% Current Divid Yield (1)	Analysts' Growth Forecast (2)	% Expected Divid Yield (3)	Cost of Equity (4)	ROE (5)
1	AGL Resources	4,6	4,0	4,8	8,8	9,0
2	Atmos Energy	3,9	4,5	4,1	8,6	8,8
3	Laclede Group	4,2	3,0	4,3	7,3	7,5
4	Nicor Inc.	3,5	3,5	3,6	7,1	7,3
5	Northwest Nat. Gas	3,6	4,6	3,8	8,4	8,6
6	Piedmont Natural Ga	3,7	4,5	3,9	8,4	8,6
7	South Jersey Inds.	2,6	6,5	2,8	9,3	9,4
8	Southwest Gas	2,7	6,0	2,9	8,9	9,0
9	WGL Holdings Inc.	3,9	5,3	4,1	9,4	9,6
	AVERAGE	**3,6**	**4,7**	**3,8**	**8,4**	**8,6**

Notes:
Column 1: Value Line Investment Analyzer 3/2011
Column 2: Zacks long-term earnings growth forecast, 3/2011
Column 3 = Column 1 times (1 + Column 2/100)
Column 4 = Column 2 + Column 3
Column 5 = (Column 3 /0.95) + Column 2

NATURAL GAS UTILITIES
DCF ANALYSIS: VALUE LINE GROWTH FORECASTS

	Company	% Current Divid Yield (1)	Value Line Proj Growth (2)	Expected Divid Yield (3)	Cost of Equity (4)	ROE (5)
1	AGL Resources	4,60	4,50	4,81	9,31	9,56
2	Atmos Energy	3,93	5,00	4,13	9,13	9,34
3	Laclede Group	4,18	3,00	4,31	7,31	7,53
4	Northwest Nat. Gas	3,60	2,50	3,69	6,19	6,38
5	Piedmont Natural Gas	3,71	3,00	3,82	6,82	7,02
6	South Jersey Inds.	2,59	9,00	2,82	11,82	11,97
7	Southwest Gas	2,69	7,50	2,89	10,39	10,54
8	WGL Holdings Inc.	3,91	2,00	3,99	5,99	6,20
	AVERAGE	**3,65**	**4,56**	**3,81**	**8,37**	**8,57**

Notes:
Column 1, 2: Value Line Investment Analyzer, 3/2011
Column 3 = Column 1 times (1 + Column 2/100)
Column 4 = Column 2 + Column 3
Column 5 = (Column 3 /0.95) + Column 2

Nicor Inc. eliminated because of negative growth rate projection

COMBINATION GAS & ELEC UTILITIES
DCF ANALYSIS: VALUE LINE GROWTH PROJECTIONS

	Company	% Current Divid Yield (1)	Proj EPS Growth (2)	% Expected Divid Yield (3)	Cost of Equity (4)	ROE (5)
1	Alliant Energy	4,26	7,00	4,56	11,56	11,80
3	Avista Corp.	4,85	8,50	5,26	13,76	14,04
4	CMS Energy Corp.	4,32	10,00	4,75	14,75	15,00
5	Consol. Edison	4,80	2,50	4,92	7,42	7,68
6	DTE Energy	4,83	6,50	5,14	11,64	11,91
7	Duke Energy	5,47	5,00	5,74	10,74	11,05
8	Entergy Corp.	4,65	2,00	4,74	6,74	6,99
10	Northeast Utilities	3,21	7,50	3,45	10,95	11,13
11	NorthWestern Corp	4,80	14,00	5,47	19,47	19,76
12	NSTAR	3,82	7,00	4,09	11,09	11,30
13	NV Energy Inc.	3,37	6,50	3,59	10,09	10,28
14	OGE Energy	3,05	6,50	3,25	9,75	9,92
15	Pepco Holdings	5,69	0,50	5,72	6,22	6,52
16	PG&E Corp.	4,15	6,00	4,40	10,40	10,63
17	SCANA Corp.	4,79	3,00	4,93	7,93	8,19
18	TECO Energy	4,59	8,00	4,96	12,96	13,22
19	UniSource Energy	4,20	14,00	4,79	18,79	19,04
20	Wisconsin Energy	3,50	9,50	3,83	13,33	13,53
	AVERAGE	**4,35**	**6,89**	**4,64**	**11,53**	**11,78**
	AVERAGE w/o Northwestern, UniSource					**10,82**

Notes:
Column 1, 2: Value Line Investment Analyzer, 03/2011
Column 3 = Column 1 times (1 + Column 2/100)
Column 4 = Column 3 + Column 2
Column 5 = (Column 3 /0.95) + Column 2

Ameren, Exelon eliminated on account of negative growth projections

COMBINATION GAS & ELECTRIC UTILITIES
DCF ANALYSIS: ANALYSTS' GROWTH FORECASTS

	Company	% Current Divid Yield (1)	Proj EPS Growth (2)	% Expected Divid Yield (3)	Cost of Equity (4)	ROE (5)
1	Alliant Energy	4,3	5,0	4,5	9,5	9,7
2	Ameren Corp.	5,5	4,0	5,7	9,7	10,0
3	Avista Corp.	4,9	4,7	5,1	9,7	10,0
4	CMS Energy Corp.	4,3	6,0	4,6	10,6	10,8
5	Consol. Edison	4,8	4,0	5,0	9,0	9,2
6	DTE Energy	4,8	5,0	5,1	10,1	10,3
7	Duke Energy	5,5	4,3	5,7	10,0	10,3
8	Entergy Corp.	4,7	1,5	4,7	6,2	6,5
9	Northeast Utilities	3,2	8,4	3,5	11,8	12,0
10	NorthWestern Corp	4,8	6,7	5,1	11,8	12,1
11	NSTAR	3,8	6,1	4,1	10,1	10,3
12	NV Energy Inc.	3,4	14,0	3,8	17,8	18,0
13	OGE Energy	3,1	5,5	3,2	8,7	8,9
14	Pepco Holdings	5,7	4,3	5,9	10,2	10,5
15	PG&E Corp.	4,2	7,7	4,5	12,1	12,4
16	SCANA Corp.	4,8	4,6	5,0	9,6	9,9
17	TECO Energy	4,6	5,3	4,8	10,2	10,4
18	UniSource Energy	4,2	5,0	4,4	9,4	9,6
19	Wisconsin Energy	3,5	8,0	3,8	11,8	12,0
	AVERAGE	**4,41**	**5,78**	**4,7**	**10,4**	**10,7**
	AVERAGE w/o NV Energy					**10,3**

Notes:
Column 1: Value Line Investment Analyzer, 03/2011
Column 2: Zacks long-term earnings growth forecast, 03/2011
Column 3 = Column 1 times (1 + Column 2/100)
Column 4 = Column 3 + Column 2
Column 5 = (Column 3 /0.95) + Column 2

Exelon eliminated on account of negative growth projection.

% Deemed Common Equity Ratios
Canadian Utilities

	Common Equity Ratio	
Gas Distributors		
AltaGas Utilities Inc.	43,0	
ATCO Gas North	39,0	
ATCO Gas South	39,0	
Enbridge Gas Distribution	36,0	
Gaz Métro	38,5	
Gazifère	40,0	
Manitoba Hydro (Centra Gas MB)	29,9	
Pacific Northern Gas	45,0	
PNG(N.E.) FSJ/DC Div.	40,0	
PNG(N.E.) TR Div.	40,0	
Terasen Gas (BC Gas)	40,0	
Terasen Gas Vancouver Is. (Centra E	40,0	
Union Gas Limited	36,0	
Median		**40,0**
Electric Distributors		
AltaLink	36,0	
ATCO Electric Transmission	36,0	
ATCO Electric Distribution	39,0	
EPCOR Transmission	37,0	
EPCOR Distribution	41,0	
FortisAlberta	41,0	
FortisBC	40,0	
Hydro One Transmission	40,0	
Maritime Electric	41,0	
Nova Scotia Power	38,0	
Ontario Electricity Distributors	40,0	
Ontario Power Generation	47,0	
Median		**40,0**
Grand Median		**40,0**

Source: Canadian Gas Association, Board decisions

U.S. Natural Gas Utilities Deemed Common Equity Ratios

Line No.	No. of Cases	Year	Eq. as % Cap. Struc.
1	11	1997	47,78
2	10	1998	49,50
3	9	1999	49,06
4	12	2000	48,59
5	5	2001	43,96
6	18	2002	48,29
7	22	2003	49,93
8	20	2004	45,90
9	24	2005	48,66
10	16	2006	47,43
11	30	2007	48,37
12	30	2008	50,47
13	28	2009	48,72
14	37	2010	48,72
	272		**48,24**

Source: Regulatory Research Associates Jan 2011

Electric Utilities Deemed Equity Ratios

Line No.	No. of Cases	Year	Eq. as % Cap. Struc.
1	11	1997	48,79
2	8	1998	46,14
3	17	1999	45,08
4	12	2000	48,85
5	13	2001	47,20
6	19	2002	46,27
7	19	2003	49,41
8	17	2004	46,84
9	27	2005	46,73
10	23	2006	48,67
11	37	2007	48,01
12	33	2008	48,41
13	37	2009	48,61
14	54	2010	48,45
	327		**47,68**

Source: Regulatory Research Associates Jan 2011

U.S. Natural Gas Utilities
Actual Common Equity Ratios

	Company Name	% Com Eq
1	AGL Resources	52,0
2	Atmos Energy	54,6
3	Laclede Group	59,5
4	Nicor Inc.	67,6
5	Northwest Nat. Gas	52,3
6	Piedmont Natural Gas	59,0
7	South Jersey Inds.	63,5
8	Southwest Gas	50,9
9	WGL Holdings Inc.	65,0
	AVERAGE	**58,3**
	MEDIAN	**59,0**

Source: VLIA 3/2011

U.S. COMBINATION GAS & ELEC UTILITIES
ACTUAL COMMON EQUITY RATIOS

	Company Name	% Com Eq
1	Alliant Energy	51,2
2	Ameren Corp.	49,1
3	Avista Corp.	49,1
4	CMS Energy Corp.	29,0
5	Consol. Edison	51,0
6	DTE Energy	46,0
7	Duke Energy	57,4
8	Entergy Corp.	43,1
9	Exelon Corp.	52,4
10	Northeast Utilities	41,5
11	NorthWestern Corp	42,8
12	NSTAR	45,2
13	NV Energy Inc.	37,8
14	OGE Energy	49,4
15	Pepco Holdings	46,2
16	PG&E Corp.	47,4
17	SCANA Corp.	43,2
18	TECO Energy	39,4
19	UniSource Energy	29,5
20	Wisconsin Energy	47,7
22	**AVERAGE**	**44,9**

Source: Value Line Investment Analyzer 3/2011

NATURAL GAS DISTRIBUTION, TRANSMISSION AND INTEGRATED NATURAL GAS COMPANIES

		% Com Equity	Allowed ROE
1	AGL Resources Inc. (NYSE-AGL)	39,9	10,46
2	Atmos Energy Corporation (NYSE-ATO)	48,6	11,71
3	Chesapeake Utilities Corporation (NYSE-CPI	60,0	10,50
4	Delta Natural Gas Company (NDQ-DGAS)	48,5	10,40
5	El Paso Corporation (NYSE-EP)	15,5	NM
6	Energen Corporation (NYSE-EGN)	78,3	13,40
7	EQT Corporation (NYSE-EQT)	61,1	11,00
8	Gas Natural, Inc. (NDQ-EGAS)	54,4	12,63
9	Laclede Group, Inc. (NYSE-LG)	54,3	NM
10	National Fuel Gas Company (NYSE-NFG)	62,1	9,50
11	New Jersey Resources Corp. (NYSE-NJR)	48,4	10,30
12	NICOR Inc. (NYSE-GAS)	55,3	10,17
13	Northwest Natural Gas Co. (NYSE-NWN)	45,9	10,20
14	ONEOK, Inc. (NYSE-OKE)	28,2	10,50
15	Piedmont Natural Gas Co., Inc. (NYSE-PNY)	49,8	10,60
16	Questar Corporation (NYSE-STR)	44,3	10,00
17	RGC Resources, Inc. (NDQ-RGCO)	63,3	9,85
18	South Jersey Industries, Inc. (NYSE-SJI)	46,9	10,30
19	Southern Union Company (NYSE-SUG)	40,3	10,03
20	Southwest Gas Corporation (NYSE-SWX)	51,0	10,22
21	WGL Holdings, Inc. (NYSE-WGL)	59,5	10,20
22	Williams Companies, Inc. (NYSE-WMB)	42,1	NM
	AVERAGE	49,9	10,6

Source: AUS Utility Reports March 2011

COMBINATION ELECTRIC & GAS COMPANIES

	COMPANY	% Com Equity	Allowed ROE
1	Alliant Energy Corporation (NYSE-LNT)	51,0	10,35
2	Ameren Corporation (NYSE-AEE)	49,6	9,93
3	Avista Corporation (NYSE-AVA)	46,7	10,33
4	Black Hills Corporation (NYSE-BKH)	44,7	10,72
5	CenterPoint Energy (NYSE-CNP)	25,1	10,12
6	CH Energy Group, Inc. (NYSE-CHG)	50,6	10,00
7	CMS Energy Corporation (NYSE-CMS)	27,9	10,63
8	Consolidated Edison, Inc. (NYSE-ED)	48,0	10,09
9	Constellation Energy Group, Inc. (NYSE-CEG)	62,4	9,71
10	Dominion Resources, Inc. (NYSE-D)	41,3	10,22
11	DTE Energy Company (NYSE-DTE)	45,2	11,00
12	Duke Energy Corporation (NYSE-DUK)	54,4	10,63
13	Empire District Electric Co. (NYSE-EDE)	47,8	10,80
14	Entergy Corporation (NYSE-ETR)	41,5	10,66
15	Exelon Corporation (NYSE-EXC)	51,2	10,30
16	Integrys Energy Group (NYSE-TEG)	53,3	10,33
17	MDU Resources Group, Inc. (NYSE-MDU)	63,4	10,88
18	MGE Energy, Inc. (NYSE-MGEE)	58,5	10,30
19	NiSource Inc. (NYSE-NI)	39,7	10,72
20	Northeast Utilities (NYSE-NU)	42,8	9,69
21	Northwestern Corporation (NYSE-NWE)	42,6	10,90
22	NSTAR (NYSE-NST)	41,0	12,50
23	NV Energy (NYSE-NVE)	37,3	10,58
24	OGE Energy Corp. (NYSE-OGE)	46,7	10,13
25	Pepco Holdings, Inc. (NYSE-POM)	47,4	10,19
26	PG&E Corporation (NYSE-PCG)	46,8	11,35
27	Public Service Enterprise Group (NYSE-PEG)	51,6	10,30
28	SCANA Corporation (NYSE-SCG)	42,6	10,67
29	SEMPRA Energy (NYSE-SRE)	48,4	11,46
30	TECO Energy, Inc. (NYSE-TE)	38,6	11,00
31	UGI Corporation (NYSE-UGI)	43,5	NM
32	UniSource Energy Corporation (NYSE-UNS)	30,2	9,88
33	Unitil Corporation (ASE-UTL)	34,6	9,90
34	Vectren Corporation (NYSE-VVC)	44,4	10,43
35	Wisconsin Energy Corporation (NYSE-WEC)	43,1	10,38
36	Xcel Energy Inc. (NYSE-XEL)	44,7	10,75
	AVERAGE	**45,24**	**10,51**

Source: AUS Utility Reports March 2011

RENDEMENT JUSTE ET RAISONNABLE DE L'AVOIR DES ACTIONNAIRES

CAUSE TARIFAIRE 1999
R-3397-98

Témoignage en chef de
Roger A. Morin, PhD
Avril 1998

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RENDEMENT JUSTE ET RAISONNABLE DE L'AVOIR DES ACTIONNAIRES ORDINAIRE

MISE EN SITUATION

Au cours des dernières causes tarifaires, la Régie a exprimé sa volonté de simplifier le processus réglementaire, plus particulièrement en ce qui a trait à la question du taux de rendement sur l'avoir des actionnaires ordinaire ("RAAO"). Avant l'année 1996, la question de la détermination du taux de rendement juste et raisonnable faisait toujours l'objet de longs débats par l'entremise de témoignages techniques et complexes d'experts retenus par les diverses parties. De longues audiences tenues dans une atmosphère tendue suivaient la soumission de nombreux et volumineux témoignages d'experts. Au cours des audiences, on abordait plusieurs aspects hautement techniques et académiques qui faisaient l'objet de controverses quant à la prévision des taux d'intérêt, les mesures de risque, le risque relatif de SCGM et les attentes des investisseurs. Les grands débats académiques et les différences d'opinion étaient inévitables sur des sujets hautement techniques, comme, par exemple, l'évaluation du risque, l'évaluation du taux de croissance attendu par les investisseurs, l'application du modèle d'Équilibre des actifs financiers ("MEAF") et du modèle d'Actualisation des flux monétaires ("AFM"), et la constitution d'un échantillon de compagnies comparables à SCGM en terme de risque. Bref, une abondance de ressources, autant monétaires que temporelles, était consacrée à la question du taux de rendement.

En 1995, on constate deux améliorations importantes dans le processus de détermination du taux de rendement de l'avoir des actionnaires. Premièrement, le témoin-expert de la compagnie déposait une version abrégée de son témoignage habituel des années précédentes, dépourvue des discussions théoriques sur les diverses méthodes utilisées pour estimer un taux de rendement juste et raisonnable. Dans un deuxième temps, la question du taux de rendement approprié pour l'année 1996 fut l'objet d'une

entente hors-cour, suite à des négociations informelles entres les diverses parties. Cette entente conclue à l'amiable, établissant un taux de rendement de 12% pour l'année 1996, fut avalisée par la Régie.

Le taux de rendement pour l`année 1997 ne pouvait être négocié étant donné que l`ACIG entendait remettre en question la structure de capital de la Société. Les tarifs pour l`année 1997 furent donc établis selon l`encadrement réglementaire traditionnel avec audiences formelles.

Le recours à la négociation a été grandement remis en question en 1997. En effet, après une négociation réalisée conformément aux souhaits exprimés par la Régie, SCGM et l'ACIG ont conclu une entente pour un taux de rendement de 11,19 % pour l'année 1998. Ce taux de rendement négocié s'appuyait sur un taux sans risque de 7,25 % et une prime de risque se rapprochant de 4 %. En dépit du succès des pourparlers et des encouragements de la Régie dans cette direction, la Régie n'a pas jugé bon d'entériner l'accord entre les parties.

MANDAT

À la faveur de la volonté de la Régie d`améliorer le processus réglementaire et à la suite des difficultés rencontrées à faire entériner le résultat d'une négociation, SCGM propose un nouvel encadrement réglementaire comportant un mécanisme de rendement incitatif à la performance. Ce dernier nécessite la détermination d'un taux de rendement de départ pour l`année 1999 et d'un mécanisme d`ajustement du taux de rendement pour les années subséquentes.

On m'a demandé de:

1) recommander un taux de rendement juste et raisonnable sur l'avoir des actionnaires ordinaire de SCGM pour 1999 ;

2) recommander une formule d`ajustement automatique du taux de rendement pour les années subséquentes ; et

3) de porter un jugement critique sur l`encadrement réglementaire proposé par la Société selon la perspective d`un expert en matière de réglementation et spécialiste en finance appliquée aux entreprises réglementées.

On retrouve mes qualifications professionnelles à la Pièce RAM-1.

ORGANISATION DU TÉMOIGNAGE

Mon témoignage s'articule autour des trois éléments faisant l'objet du présent mandat. La section I porte sur la détermination d`un rendement juste et raisonnable sur l'avoir des actionnaires ordinaire de SCGM pour l`année 1999. A la section II, on trouvera ma recommandation à l'égard d'un mécanisme d`ajustement automatique du taux de rendement pour les années subséquentes. A la section III, on trouvera mes commentaires quant à l`encadrement réglementaire proposé par la Société.

I. TAUX DE RENDEMEMT JUSTE ET RAISONNABLE POUR 1999

Cette section de mon témoignage porte sur l`analyse du taux de rendement juste et raisonnable pour 1999, s`appuyant principalement sur les méthodes de détermination de la prime de risque.

1.1 La théorie entourant la détermination du taux de rendement

Il existe quatre méthodes fondamentales pour déterminer un taux de rendement juste et raisonnable, dont trois s`appuient sur des données de marché: AFM, Prime de risque et MEAF. La quatrième méthode, qui consiste à trouver des compagnies qui présentent des bénéfices comparables, repose sur des données comptables. Dans une

optique purement théorique et en l'absence de contraintes de données, on accorde une pondération égale aux résultats produits par les quatre méthodes. Ces différentes approches sont décrites dans mon livre "Regulatory Finance", dont un bref résumé vous est présenté à l'Annexe A, "Revue des méthodes de détermination du taux de rendement".

L'application de chacune de ces méthodes exige que l'on fasse preuve de beaucoup de jugement quant à la raisonnabilité des hypothèses qui les sous-tendent et des indices servant à valider la théorie. Aussi faut-il s'en remettre à l'application de plusieurs méthodes avant de porter un jugement final sur le taux de rendement approprié, de même qu'il faut les appliquer sur un échantillon de plusieurs compagnies comportant des risques comparables.

Aucune méthode n'offre des résultats infaillibles qui permettent d'établir un rendement juste et raisonnable pour une compagnie donnée. Chaque méthode possède sa propre façon d'analyser le comportement des investisseurs, ses propres fondements et sa façon de simplifier la réalité. Chaque méthode repose sur différents fondements qui sont impossibles à vérifier sur une base empirique. Les investisseurs ne privilégient pas l'utilisation exclusive d'une méthode par rapport à une autre, et le cours d'une action ne reflète pas nécessairement l'application d'une seule méthode par un investisseur. En théorie, faute de preuve entièrement concluante quant à la supériorité d'une méthode par rapport aux autres, il faut utiliser toutes les données pertinentes pour réduire au minimum les erreurs de jugement et de mesure, ainsi que les effets des lacunes conceptuelles.

1.2 La pratique entourant la détermination du taux de rendement

D'un point de vue pratique et par souci d'efficacité administrative, plus de poids sont accordés aux méthodes MEAF et Prime de risque.

La méthode des Bénéfices comparables et la méthode AFM sont difficiles d'application, compte tenu du dynamisme et de la fluidité des marchés financiers

canadiens et du secteur énergétique. La tâche qui consiste à créer un échantillon représentatif de compagnies comparables est difficile. L'industrie gazière a vécu plusieurs acquisitions et réorganisations corporatives au cours de la dernière décennie. Ainsi, un bon nombre de compagnies se retrouvent avec des statistiques historiques insuffisantes ou faussées. Il existe peu de distributeurs gaziers canadiens purs dont les titres sont transigés publiquement en bourse. Plusieurs de ces compagnies voient leurs titres faiblement transigés, ce qui affecte la fiabilité des données de marché, tel que le coefficient bêta discuté plus loin.

La méthode AFM présente plusieurs difficultés conceptuelles et pratiques qui sont couvertes dans le supplément technique présenté à l'Annexe A, et plus longuement couvertes dans le chapitre 9 de mon livre "*Regulatory Finance*". D'un point de vue pratique, le modèle AFM est difficile à appliquer aux données des distributeurs gaziers canadiens. Non seulement le nombre de compagnies est-il restreint, mais il existe de plus une pénurie de données financières historiques homogènes. Par conséquent, les résultats produits par l'application de la méthode manquent de fiabilité. De plus, il est difficile de préciser la composante croissance anticipée exigée par le modèle. Enfin, les hypothèses fondamentales qui sous-tendent le modèle AFM ne concordent pas avec les conditions actuelles du marché des capitaux.

La méthode des Bénéfices comparables requiert la compilation d'un volume important de données et s`inscrit mal dans un contexte de simplification du processus réglementaire. Si la Régie devait conclure que cette méthode doit continuer à jouer un rôle dans l`estimation d`un taux de rendement juste et raisonnable, la mise en application devra suivre les directives générales que l`on retrouve à l`Annexe A et dans mes témoignages antérieurs devant la Régie.

Compte tenu des difficultés d'ordre pratique de l'application de la méthode AFM et de l`approche des Bénéfices comparables et pour les fins d'une efficacité administrative, les méthodes MEAF et Prime de risque sont privilégiées. On retrouve leurs mises en

application ainsi que les résultats obtenus à l'Annexe B, "Méthode de détermination de la prime de risque".

Le tableau suivant résume les résultats obtenus quant à la prime de risque résultant de l'application des différentes méthodes.

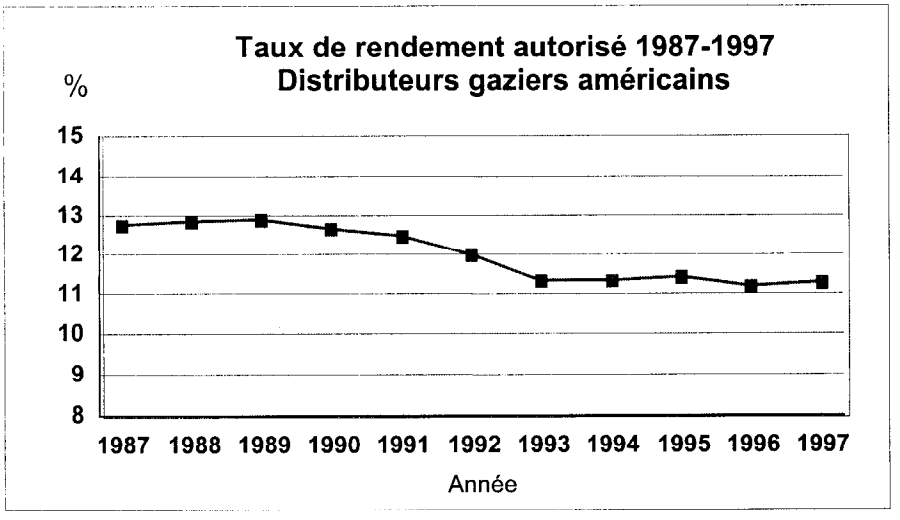
MÉTHODE	PRIME DE RISQUE
MEAF 1	4,5 %
MEAF 2	5,1 %
US Gaz Prospectif	4,2 %
US Gaz Historique	4,8 %

La prime de risque moyenne résultant de la mise en application des différentes méthodes est de 4,55 %. En combinant le taux d'intérêt sans risque de 6,02% (rendement prévu des obligations à long-terme (30 ans) du Gouvernement du Canada tiré du Consensus Forecasts de mars 1998) et la prime de risque de 4,55%, le rendement sur l'avoir des actionnaires s'établit à 10,57%. Je recommande donc un rendement juste et raisonnable sur l'avoir des actionnaires de la Société de 10,57 % pour 1999.

Ma recommandation se compare aux taux de rendement autorisés par les organismes de réglementation dans l'industrie canadienne du gaz naturel, tel que le démontre le tableau qui suit. Quoique les rendements autorisés ne constituent pas une indication précise du coût de l'avoir des actionnaires, ils influencent tout de même les anticipations de croissance des investisseurs et leurs attentes en matière de taux de rendement. Ils servent également de point de repaire utile pour juger de la raisonnabilité de ma recommandation. Le taux de rendement moyen accordé par les organismes de réglementation lors de ces décisions relativement récentes se chiffre à **10,6** %, ce qui est égal à ma propre recommandation. Etant donné que les contextes économiques qui entourent ces décisions relativement récentes sont comparables au contexte actuel, je considère ma recommandation de 10,57 % raisonnable et plutôt conservatrice.

COMPAGNIE	RENDEMENT AUTORISÉ
Union Gas	10,44 %
Centra Ontario	10,69 %
Centra Manitoba	9,91 %
Centra Alberta	11,75 %
Pacific Northern	10,75 %
BC Gas	10,00 %
Centra Ft St. John	10,25 %
Centra B.C.	10,85 %
Gazifère	10,75 %
Moyenne	**10,60 %**

Le graphique qui suit souligne la tendance des taux de rendement autorisés pour les distributeurs américains de gaz naturel. Le rendement moyen autorisé en 1997 s'élevait à 11,3 % dans des contextes de marché des capitaux similaires, ce qui dépasse la moyenne canadienne de 10,6 % et ce, en dépit du fait que les distributeurs américains possèdent une structure de capital beaucoup plus solide.



II. MÉCANISME AUTOMATIQUE D'AJUSTEMENT DU TAUX DE RENDEMENT

La présente section porte sur un mécanisme automatique d`ajustement du taux de rendement reflétant les changements dans le contexte financier.

Il existe maintes façons d'ajuster automatiquement le taux de rendement en fonction des changements dans le coût de l'avoir des actionnaires de SCGM. Une approche simple consiste à lier le taux de rendement directement aux changements du taux d`intérêt sans risque, tel que mesuré par le rendement moyen des obligations à long-terme du Gouvernement du Canada ("Canada long-terme" ou "CLT") sur une période de douze mois se terminant le 30 septembre. Pour chaque année subséquente, le taux d'intérêt des CLT est calculé de façon identique. Le changement dans le taux de rendement des actions est alors égal à la différence entre le taux d'intérêt moyen des CLT au cours de l'année d'indexation et le taux d'intérêt moyen des CLT sur l`année de référence. Le taux de rendement des actions pour l`année témoin est alors remis à jour en ajoutant ou soustrayant le changement dans les taux d`intérêt par rapport à l`année de référence. Cette méthode présume alors que la prime de risque demeure constante, sans égard au niveau des taux d`intérêt.

Je propose que la Régie adopte une formule automatique d`ajustement du taux de rendement en fonction du niveau des taux d`intérêt. Le calcul du taux de rendement cible sera effectué annuellement au mois d`août et reflétera le changement dans les taux d`intérêt entre l'année de base et l'année témoin de SCGM, tel que décrit ci-après.

Afin de lier le taux de rendement aux taux d`intérêt, je propose une formule préétablie qui s`appuie sur la méthode Prime de risque. Cette dernière approche nécessite deux composantes: le taux d`intérêt sans risque et la prime de risque. Pour le premier élément, je propose d'utiliser la moyenne des prévisions, établies sur des périodes de 3 mois et de 12 mois, du rendement des obligations de 30 ans du Gouvernement du Canada publié dans le Consensus Forecast daté du mois d`août.

La prochaine étape consiste à ajouter une prime de risque au taux moyen sans risque. Tel que discuté antérieurement, une prime de risque initiale de 4,55 % constitue un point de départ raisonnable et conservateur pour l'année 1999. Par la suite, la prime de risque doit s`ajuster en fonction de la variation du taux moyen sans risque de façon simple, facile d'application et de compréhension. Le mécanisme d`ajustement automatique doit refléter la relation inverse bien connue entre la prime de risque et le niveau des taux d`intérêt.

Tel que discuté à l`Annexe B, la littérature spécialisée sur le sujet et la recherche empirique démontrent que les primes de risque varient de façon inverse avec le niveau des taux d'intérêt : elles diminuent lorsque les taux d'intérêt montent et augmentent au fur et à mesure que les taux d'intérêt descendent.

Cette relation inverse est attribuable à la perte en capital subie par les détenteurs d`obligations lors d`une hausse des taux d'intérêt. Ce phénomène est bien connu des détenteurs d`obligations comme le "risque du taux d'intérêt". Du coté des actionnaires, ils sont plus conscients que les profits de l`entreprise baissent au fur et à mesure que les taux d'intérêt augmentent. Or, si la crainte des obligataires occasionnée par une hausse des taux d'intérêt dépasse la crainte des actionnaires de voir se réaliser une baisse de la rentabilité, le différentiel de risque diminue, et par conséquent la prime de risque entre les actions et les obligations se comprime. Ce phénomène est particulièrement puissant lors de périodes d'inflation marquée au moment où les obligataires exigent une compensation importante reflétant la perte en capital qui suit la hausse des taux d'intérêt. Lorsque les taux d'intérêt augmentent brusquement suivant la flambée inflationniste, le risque associé aux taux d'intérêt des obligations s`intensifie plus que le risque associé à la rentabilité des actionnaires ordinaires, ces derniers jouissant d`un certain degré de protection contre l`inflation. Dans les milieux financiers, on qualifie ce phénomène propre aux obligations de "prime de risque liée au pouvoir d`achat". En contrepartie, lors d`une chute des taux d'intérêt, la crainte des obligataires face au taux d'intérêt diminue, alors que la crainte des

actionnaires d'une perte du pouvoir de gain augmente. Comme résultat, le différentiel de risque s'élargit et, par conséquent, la prime de risque entre les actions et les obligations augmente.

Cependant, au cours des cinq dernières années, le niveau du taux d'inflation et, par conséquent, celui des taux d'intérêt sont beaucoup plus faibles que ceux que l'on retrouve dans les ouvrages publiés dans la littérature spécialisée. Avec la baisse du taux d'inflation, les détenteurs d'obligations redoutent moins le risque de perte en capital, ce qui implique une relation beaucoup plus stable entre les obligations et les actions et un affaiblissement de la sensibilité de la prime de risque au niveau des taux d'intérêt comparativement au passé.

Tel que présenté à l'Annexe B, une revue de la littérature scientifique et les résultats de mes propres études sur les taux de rendement autorisés par les organismes de réglementation en fonction des taux d'intérêt révèlent une diminution de la prime de risque dans des périodes de taux d'intérêt élevés, et une augmentation de la prime au fur et à mesure que les taux d'intérêt chutent. Lorsqu'on inclut les résultats de la période de forte inflation des années 1980 dans ces études, la relation inverse entre la prime de risque et les taux d'intérêt se rapproche de 0,50. Cependant, au cours des périodes plus récentes qui excluent la période d'inflation marquée des années 1980, le coefficient de redressement se rapproche de 0,25. Nous pouvons donc conclure que pour un changement de 100 points (1 %) dans les taux obligataires du gouvernement, la prime de risque change de 25 points de base en direction opposée pour provoquer un changement net de 75 points de base. En d'autres termes, le coût de l'avoir des actionnaires ordinaire fluctue selon 75 % de la variation des taux d'intérêt durant les périodes où l'inflation demeure stable et relativement faible.

La reconnaissance que la prime de risque fluctue en fonction inverse de la variation du taux d'intérêt est utile pour ajuster les primes de risque historiques aux conditions actuelles des marchés financiers. Ainsi, lorsque les taux d'intérêt se situent à un niveau

relativement élevé (bas), la prime de risque appropriée se situe en dessous (au-dessus) de sa moyenne à long-terme. La recherche empirique discutée précédemment sert comme guide quant à la détermination de l'ampleur de l'ajustement.

Pour conclure, je propose que la prime de risque fluctue de 0,25 % (25 points de base) pour chaque variation de 1 % dans le taux sans risque en direction inverse, produisant un changement net de 75 points de base.

Par exemple, supposons que la Régie autorise un taux de rendement cible de 10,57 % pour 1999 alors que les obligations CLT offrent un rendement de 6,02 %, ce qui implique une prime de risque de 4,55 %. Le tableau ci-dessous présente le comportement de la prime de risque et du taux de rendement autorisé sur l'avoir des actionnaires de SCGM en fonction de la variation du taux sans risque d'une année à l'autre. Si le CLT chute à 5,00 %, c'est-à-dire une diminution de 100 points de base dans les taux d'intérêt, la prime de risque de 4,55 % augmenterait de 25 % de la variation du taux d'intérêt, soit à 4,81 %. Par conséquent, le taux de rendement autorisé se chiffrerait à 5,00 % + 4,81 % = 9,81 %. Prenons le scénario inverse. Si le CLT augmente à 7,00 %, c'est-à- dire une augmentation de 100 points de base, la prime de risque de 4,55 % diminuerait de 25 % de la variation du taux d'intérêt, soit à 4,31 %. Ainsi, le taux de rendement autorisé se situerait à 7,00 % + 4,31 % = 11,31 %.

Taux d'intérêt	**Prime de risque**	**Taux de rendement**
4,00 %	5,06 %	9,06 %
5,00 %	4,81 %	9,81 %
6,02 %	**4,55 %**	**10,57 %**
7,00 %	4,31 %	11,31 %
8,00 %	4,06 %	12,06 %

II.I Filet de sécurité

Le mécanisme automatique d'ajustement du taux de rendement doit prévoir ce qui se passera si des circonstances extraordinaires sur les marchés des capitaux se

produisaient. Afin de protéger les investisseurs et la clientèle des risques que l'intégrité financière de la Société soit sévèrement compromise par des imperfections dans la formule, il est souhaitable d'y incorporer un processus de révision de la formule de base lié aux fluctuations des taux d'intérêt sur les marchés obligataires. Ainsi, si le taux sans risque s'écarte de 300 points de base par rapport au point de référence d'environ 6,0 % (mars 1998), c'est-à- dire si le rendement des CLT dépasse une fourchette allant de 3,0 % à 9,0 %, la Société pourra solliciter des modifications à la formule de fixation du taux de rendement.

Je propose également que le mécanisme soit en vigueur pour une durée de cinq ans, et que l'on revoit le tout à la fin de cette période. À moins d'un déclenchement du plancher-plafond tel que décrit ci-haut, l'encadrement réglementaire et le mécanisme d'ajustement du taux de rendement seront revus dans cinq ans. Cette politique offre à SCGM, pour les fins de planification, une certaine stabilité et une opportunité raisonnable de bénéficier du nouvel encadrement réglementaire selon des règles du jeu connues à l'avance. Une revue quinquennale du mécanisme de fixation du taux de rendement contribuera à maintenir ce dernier à un niveau comparable à celui offert par des investissements à risque comparable. La revue du nouvel encadrement réglementaire se fera à la lumière des résultats obtenus et selon sa capacité de satisfaire les critères élaborés ci-dessous de même que son habileté à s'adapter au contexte de marché.

II. 2 Commentaires additionnels sur les formules automatiques d'ajustement du taux de rendement

La Régie doit être consciente de certaines lacunes des formules mathématiques d'ajustement du taux de rendement. En premier lieu, tout changement dans le niveau de risque de la compagnie est absent de la formule automatique et ce, en dépit du rôle clé que joue le risque dans les attentes de rendement des investisseurs. L'approche d'une formule élimine l'exercice d'un bon jugement et risque de ne pas refléter adéquatement

les changements dans les perceptions de risque des investisseurs. Une formule unidimensionnelle selon laquelle seul le niveau des taux d'intérêt influence le rendement sur l'avoir des actionnaires transforme les actions ordinaires de SCGM en titres obligataires à taux variable. Heureusement, la revue quinquennale viendra amoindrir l'impact de cette lacune dans le système proposé.

En second lieu, les formules mathématiques de fixation du taux de rendement en vigueur chez les sociétés pipelinières réglementées par l'ONE ne sont pas directement transférables aux distributeurs gaziers. De façon générale, les compagnies de distribution de gaz naturel possèdent un degré de risque supérieur à celui des oléoducs, bien qu'il existe des exceptions à cette règle. On retrouve deux raisons fondamentales pour expliquer ce phénomène.

Premièrement, le risque des distributeurs gaziers diffère de celui des transporteurs à cause de leur structure tarifaire. Les sociétés pipelinières sont assurées de récupérer l'ensemble de leurs coûts fixes par l'entremise d'un tarif relié à la demande du service ("demand charge") qui couvre 100 % des coûts fixes, ce qui n'est pas le cas pour les distributeurs gaziers. Deuxièment, les compagnies pipelinières sont généralement importantes et opèrent sur un territoire plus diversifié. Par exemple, contrairement à SCGM, TransCanada Pipeline offre son service de transport à travers l'Est du Canada, ce qui couvre un vaste territoire possédant des perspectives de croissance intéressantes. Ses sources de revenus sont diversifiées, provenant d'une vaste gamme d'industries, de commerces et d'une clientèle résidentielle.

Je rappelle aussi à la Régie que SCGM a toujours présenté aux investisseurs un profil de risque supérieur à la moyenne par rapport à l'ensemble de l'industrie des distributeurs gaziers et, par conséquent, a bénéficié de rendements autorisés supérieurs dans le passé. Les écarts positifs de rendement observés sur le marché obligataire entre les titres de SCGM et ceux des autres distributeurs gaziers comparables confirment ce phénomène. On compare souvent SCGM à Consumers Gas. Historiquement, les

rendements accordés à SCGM ont dépassé ceux accordés à Consumers Gas, étant donné son risque supérieur. Ce résultat se confirme en observant un écart de rendement positif de l'ordre de 25 points de base entre les titres obligataires de SCGM et ceux de Consumers Gas.

Enfin, je note que les formules automatiques d'établissement du taux de rendement qui prévalent dans certaines provinces canadiennes et à l'ONE ne sont pas directement applicables ni aux circonstances économiques actuelles ni à SCGM. À titre d'exemple, les formules mathématiques élaborées selon un ensemble de circonstances qui prévalaient à un moment précis sur les marchés financiers, alors que le niveau des taux d'intérêt dépassait largement le niveau actuel, ne sont pas directement transférables à SCGM.

III. MÉCANISME DE RENDEMENT INCITATIF À LA PERFORMANCE

La Société m'a aussi confié le mandat de commenter sa proposition d'une réglementation incitative selon la perspective d'un expert en matière de réglementation et d'un spécialiste en finance appliquée aux entreprises réglementées. Cette section porte, en premier, sur l'évaluation de l'encadrement réglementaire proposé selon certains critères bien établis pour ensuite discuter des options réglementaires considérées par SCGM et rejetées par la suite, du moins dans leur forme originale. En dépit de ma participation active comme expert-conseil, c'est à SCGM qu'est revenue la décision finale. Je supporte cette prise de position.

Les raisons qui nous motivent à améliorer le régime réglementaire actuel sont bien évidentes : 1) encourager la Société à introduire des mesures de contrôle de coûts et à améliorer sa performance globale ; 2) encourager l'innovation au niveau des nouveaux produits et de la qualité du service à la clientèle ; 3) réagir au contexte de marché ; 4) assouplir le processus d'établissement des tarifs et réduire les coûts reliés à la réglementation ; et 5) éliminer l'asymétrie inhérente dans le régime actuel.

Le régime réglementaire proposé par la Société est innovateur et répond à l'ensemble des préoccupations mentionnées précédemment. Les objectifs principaux du système proposé s'articulent ainsi : 1) assouplir le processus actuel d'établissement des tarifs ; 2) réduire l'ampleur et la complexité des causes tarifaires ; 3) encourager formellement la Société à opérer efficacement et à améliorer sa performance globale ; et aussi 4) générer des bénéfices tangibles pour tous : les clients, les employés, la Régie et la Société. Pour faciliter l'atteinte de ces objectifs, le régime proposé est de nature simple et pratique, reposant sur des données publiques facilement disponibles, et il encourage aussi l'amélioration de la performance globale en responsabilisant la Société.

On retrouve le détail des modalités du régime proposé dans le témoignage de Madame Nicole Bessette. Le régime proposé comprend trois étapes à l'établissement des tarifs. En premier lieu, le taux de rendement cible est établi annuellement en fonction de la formule élaborée précédemment. En second lieu, le coût de service attendu est établi selon le coût de service de base actuel, auquel vient s'ajouter un facteur lié à l'inflation. En dernier lieu, le coût de service attendu est comparé au coût de service requis, et le rendement sur l'avoir propre est bonifié lorsque la compagnie réussit à maintenir le coût de service requis à un niveau inférieur au coût de service attendu.

À titre d'exemple, disons que le taux de rendement cible est fixé à 10,6 %. Le coût de service actuel de 100 $ est alors indexé du taux d'inflation qui est de 3 %, ce qui signifie que le coût de service attendu est de 103 $. Si la Société réussit à maintenir son coût de service requis disons à 101 $, elle a droit à une bonification du taux de rendement, basée sur l'écart de 2 $ entre le coût de service attendu et le coût de service requis. Le revenu requis sera donc de 101 $, plus la bonification du taux de rendement sur une base avant impôt.

Ma conclusion principale à l'égard du mécanisme de rendement incitatif innovateur proposé par la Société c'est qu'il retient les bons côtés du régime traditionnel de réglementation par voie du taux de rendement et de la base tarifaire tout en réduisant ses

inconvénients. Pour tirer une telle conclusion, dans un premier temps, j`ai procédé à un examen des différents régimes réglementaires en les évaluant selon certains critères bien établis. Ces derniers reflètent les ojectifs socioéconomiques fondamentaux de n`importe quel processus de réglementation efficace. Dans l`ensemble, ces critères doivent faire l`objet d`un compromis. D`une part, le mode de réglementation doit promouvoir l`efficacité économique et, d`autre part, il doit être raisonnable, prévisible, facile à administrer et juste et raisonnable envers la clientèle et les investisseurs. Ils s`articulent ainsi:

1) Incitatif à l`efficience économique
2) Validité théorique
3) Flexibilité tarifaire
4) Souplesse administrative
5) Rendement adéquat aux investisseurs
6) Juste et raisonnable
7) Qualité de service
8) Prévisibilité et cohérence des tarifs
9) Précision et flexibilité

Dans un deuxième temps, j`ai comparé le régime proposé par la Société à ces critères.

1. Incitatif à l'efficience économique

Le régime proposé encourage la compagnie à minimiser ses coûts et à augmenter l`efficacité de ses opérations de distribution du gaz. Dans la mesure où elle réussit à maintenir ses coûts actuels en bas des coûts attendus, la compagnie et la clientèle en bénéficieront.

2. Validité théorique

L'introduction d'une formule d'ajustement automatique du taux de rendement et les aspects d'efficience économique du nouveau régime proposé reposent sur des bases conceptuelles et empiriques solides.

3. Flexibilité tarifaire

La Régie retient toujours la possibilité d'autoriser la flexibilité tarifaire afin que les tarifs s'adaptent au contexte de marché.

4. Souplesse administrative

Le mode de réglementation proposé par SCGM est simple à administrer, à comprendre et minimise les coûts directs de la réglementation, y compris la durée des audiences, des expertises requises et le recours à des banques de données. Les exigences de données sont moins importantes que celles requises par le statut quo. La composante taux de rendement est grandement simplifiée par le mécanisme d'ajustement automatique. La seule nouvelle donnée requise est le taux d'inflation, qui est facilement disponible.

5. Rendement adéquat aux investisseurs

En supposant que la Régie autorise l'adoption de la formule d'ajustement automatique du taux de rendement telle que décrite ci-haut, le système proposé offre aux bailleurs de fonds un rendement juste et raisonnable, qui se compare avantageusement à ceux offerts par des placements concurrents à risque comparable et offre à la compagnie l'opportunité de le réaliser. Par conséquent, il permettra à la compagnie d'accéder au marché des capitaux en rassurant les investisseurs de son intégrité financière. En cas de circonstances néfastes imprévues sur les marchés financiers, le filet de sécurité prévu dans le mécanisme d'indexation du taux de rendement protège la compagnie.

6. Juste et raisonnable

Du coté des bailleurs de fonds, le régime proposé élimine les effets néfastes de l'asymétrie. Du coté des clients, ils obtiennent une partie de tout gain résultant d'amélioration de la performance à la suite du partage de baisses tarifaires. Du coté de la Régie, le régime proposé atténue le risque réglementaire et réduit les coûts directs de la réglementation.

7. Qualité de service

Le mécanisme incitatif proposé maintient le respect du niveau de la qualité du service, car la Société a droit à un excédent de rendement seulement dans la mesure où le niveau d'atteinte des indices de qualité est maintenu ou dépassé.

8. Prévisibilité et cohérence des tarifs

En admettant l'adoption du mécanisme incitatif proposé, les tarifs deviennent prévisibles et cohérents, minimisant ainsi le risque réglementaire. Ceci permet à la compagnie d'être traitée de façon équitable et cohérente d'une année à l'autre. Du côté de la clientèle, plus particulièrement la clientèle industrielle, elle peut compter sur une certaine stabilité et cohérence de ses tarifs nécessaires à une saine planification financière.

9. Précision et flexibilité

La composante taux de rendement du régime incitatif proposé s'ajuste fidèlement et rapidement à l'évolution des taux d'intérêt, tout en servant de point de départ juste et raisonnable en ce qui a trait à l'établissement des tarifs initiaux. De plus, le mode réglementaire proposé offre la flexibilité dans l'établissement des tarifs, ce qui permettra de les adapter à des changements rapides, autant sur les marchés de capitaux que sur les marchés énergétiques.

Bref, le mécanisme proposé est de nature à générer des avantages pour tous: les clients, les investisseurs et la Régie. La revue globale du mécanisme prévue dans cinq ans viendra remédier à toute lacune identifiée en cours de route. Au terme de cette période, ce sera l'occasion de raffiner le processus, si il y a lieu.

Une analyse coûts-bénéfices complète des diverses options de régimes réglementaires a précédé l'adoption du régime retenu. En fin d'analyse, le mécanisme incitatif proposé retient les éléments positifs des divers régimes réglementaires, tout en évitant les éléments indésirables. Le régime proposé repose sur un ensemble de caractéristiques constatées lors de l'analyse des diverses options étudiées : réglementation traditionnelle sur la base tarifaire, taux de rendement incitatif, balise de taux de rendement générique, plafonnement des tarifs ("price cap") et mécanismes de partage des bénéfices. À titre d'exemple, mentionnons que le système proposé retient l'aspect plafonnement des tarifs selon le taux d'inflation d'un régime "price cap". Mais il contourne la complexité et le risque qui résulte dans le choix du facteur de productivité d'un régime "price cap" par le biais d'un seuil limite au taux de rendement. Le système proposé contient aussi un aspect partage des bénéfices dans la mesure où la Société réussit à maintenir son coût de service à un niveau inférieur à celui du taux d'inflation. Les tarifs sont toujours assujettis à la contrainte imposée par le taux de rendement, mais ils évitent les aspects négatifs qui résultent de l'application des formules mathématiques pures en introduisant un incitatif par l'entremise d'une bonification du rendement si elle contrôle bien ses coûts.