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June 30, 2005

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, B.C. V6Z 2N3

Attention: Mr. R.J. Pellatt, Commission Secretary

Dear Sir:

RE: Terasen Gas Inc. ("Terasen Gas") or ("TGI")
Terasen Gas (Vancouver Island) Inc. ("TGVI")
Return on Equity and Capital Structure

Pursuant to Commission Order No. G-88-04, TGI and TGVI ("the Companies" or "Terasen") request that the British Columbia Utilities Commission ("BCUC" or "Commission") hold a hearing to determine the appropriate return on equity ("ROE") and capital structure of the Companies to be used in setting the rates of the Companies commencing January 1, 2006 and to review and revise the automatic adjustment mechanism used in calculating the ROE allowed in rate for public utilities regulated by the Commission.

In order to serve the broader public interest, Terasen believes it is important that British Columbia utilities stay healthy financially in order to

- meet their customer's service needs at a reasonable cost,
- attract investment capital at reasonable cost,
- pursue investments in efficiency,
- achieve appropriate customer service levels, and
- be sustainable in the face of ongoing and changing business risks.

In considering this matter, the Commission will be guided by it obligations under the *Utilities Commission Act*, in particular those parts of Sections 59 and 60 which require that the Commission establish rates that are not unjust or unreasonable and in so doing balance the interests of customers and investors in the public utilities regulated by the Commission.

Terasen contends that the mechanism devised more than a decade ago for determining the returns allowed to investors on their equity investments in utilities no longer meets these public interest tests.

The Commission first introduced a generic ROE adjustment mechanism in 1994 to annually establish the allowed returns for the utilities it regulates in the province. The generic formula established a benchmark return for the "low risk" utility in British Columbia and BC Gas Utility Ltd. (now Terasen Gas Inc.) was deemed the benchmark low risk utility.

The automatic adjustment mechanism provides for the benchmark ROE to be set for each year with reference to forecast yields on long-term (30 year) Government of Canada bonds. Since the adjustment mechanism was first established in 1994, the Commission has reviewed the mechanism and made adjustments. The last public hearing into the process of setting the returns on equity for British Columbia utilities was conducted in 1999 when relatively minor changes were made.

There have been significant reductions in the yields on long-term Canada bonds used to determine the allowed return on equity since the automatic adjustment mechanism was first introduced, and material changes in general economic conditions and the risk profile of TGI over that period of time. These changes, and the allowed returns on equity calculated through the automatic adjustment mechanism, have resulted in significant negative consequences for utility investments in British Columbia. TGI and TGVI submit that it is time for the Commission to respond to current market conditions appropriately and to increase the returns on equity of public utilities regulated by the Commission, to establish capital structures for TGI and TGVI that more appropriately reflect the business and financial risks of the Companies, and to review and revise the ROE automatic adjustment mechanism.

At today's prevailing long term Government of Canada bond yields of 4.21%, the current automatic adjustment mechanism would yield a benchmark ROE of 7.71% and there are signals that bond yields may move lower resulting in further deterioration of the prospective allowed ROEs in British Columbia. At such levels, ***Terasen is significantly discouraged from, and potentially challenged to be able to continue to invest capital in the province beyond that which is required to meet our basic obligation to serve in existing service areas.***

The Companies have approached the need for changes to ROE and capital structure under six broad themes:

1. The application of the Commission's ROE adjustment mechanism has resulted in TGI being allowed the lowest return on investment of any regulated energy utility in Canada. This is unfair to shareholders, which is not in the long run, in the best interests of customers. Nor does it generate the positive investment climate the provincial government intends for British Columbia.

2. The design of the automatic adjustment mechanism, with different formula above and below forecast long Canada bond yields of 6% (the mechanism reduces returns on equity one-for-one with decreasing yields when yields are below 6%, but increases returns on equity by only 80% of increasing yield when yields are above 6%) has had the unintended consequences of producing inadequate returns and making capital attraction difficult, which is the opposite effect of the intention stated by the Commission at the time.

3. There have been significant changes in the Canadian economy and the financial markets in Canada since the ROE automatic adjustment mechanism was first introduced. There have also been significant changes in the economy and financial markets in North America and throughout the world. The capital structures of the Companies and the returns on equity allowed for rate making purposes must be revised to reflect these changed circumstances.

4. The business risk profile of TGI has changed since the automatic adjustment mechanism was first introduced in 1994 and since the last Commission hearing on this subject in 1999. The capital structure and return on equity of TGVI to be used for rate making purposes has not been determined through a public hearing process and more significantly, the strength of TGI's capital structure, from a bondholder's perspective, has effectively declined since 1994 with the elimination of preferred shares. Capital structures and returns on equity that reflect the current risk profile must be established for both Companies.

5. The Commission should allow TGI and TGVI rates of return on equity and capital structures that will underpin the financial flexibility required to attract capital at reasonable costs; meaning, for example, maintaining adequate debt coverage ratios sufficient to avoid alarms from debt rating agencies. This is key to the sustainable provision of safe and reliable service at appropriate performance levels to existing and prospective customers at reasonable costs.

6. In determining appropriate returns on equity for the utilities it regulates, the Commission should take into account, and give weight to, more than the equity risk premium test and include, as it did in years prior to the introduction of the automatic adjustment mechanism in 1994, the discounted cash flow test and the comparable earnings test.

The Companies submit that when the evidence is considered it is apparent that the common equity component in the capital structure of both Companies, and the return on equity allowed for both Companies, allowed for rate making purposes, should be increased.

Terasen Gas Inc. submits that the common equity component in the capital structure of TGI allowed for rate making purposes should be 38% (as compared to the current 33%). Terasen Gas Inc. further submits that the appropriate return on that equity allowed for TGI for rate making purposes is 10.5% when the forecast yield on long-term Canada bonds is 5.25%.

Terasen Gas (Vancouver Island) Inc. submits that the common equity component in the capital structure of TGVI allowed for rate making purposes should be 40% (as compared to the current 35%). Terasen Gas (Vancouver Island) Inc. further submits that it be granted a 75 basis point increment over the allowed return on equity for TGI (i.e. 11.25% when the forecast yield on long-term Canada bonds is 5.25%) to reflect TGVI's greater risk profile.

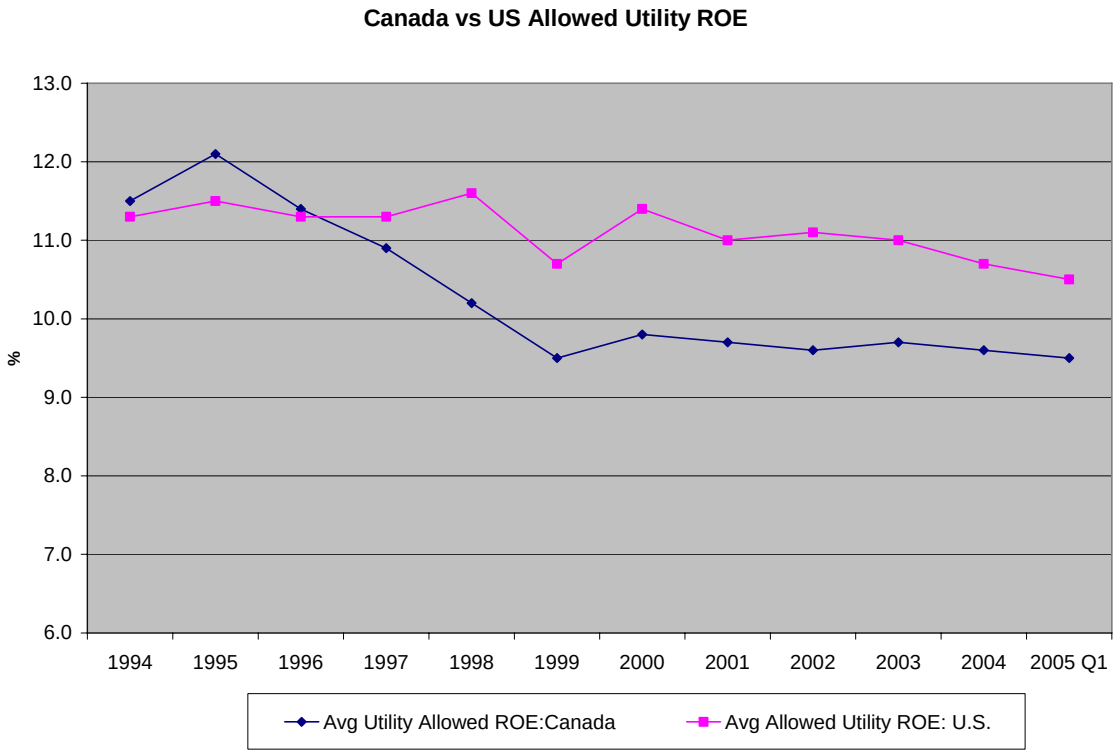
1) Out of Step With Other Utility Regulation in Canada

Under the Commission's current ROE automatic adjustment mechanism, TGI has the lowest allowed return on equity of any regulated gas or electric utility in Canada at 9.03% (which was set based on a forecast long-term Canada bond yield of 5.53%). At 33% TGI also has the lowest level of common equity in its capital structure of the Canadian investor-owned gas and electric distribution utilities. Such results are unfair to the persons investing in the equity of TGI. The results are also at odds with Provincial Government policy objectives to foster a positive investment climate in British Columbia.

The British Columbia “penalty” can perhaps best be illustrated by the following table. The table assumes the returns on equity of the utilities listed are set using a forecast long Canada bond yield of 5.25%. The first two columns show the disadvantage that TGI and TGVI suffer against comparable Canadian utilities in allowed equity thickness and in allowed returns on equity. The third column shows how these two disadvantages compound to create an approximate fifty basis point disadvantage for return on investment in TGI rate base and an approximate 150 basis point disadvantage for return on investment in TGVI rate base.

	Allowed Common Equity Ratio (1)	**Allowed Return at Forecast 5.25% Long Canada (2)**	**Weighted Equity Return Component (Col 1 x Col 2)**
Terasen Gas	**33.0%**	**8.75%**	**2.89%**
Comparables			
ATCO Gas	38.0%	9.28%	3.52%
Enbridge Gas	35.0%	9.15%	3.20%
Gaz Metro	38.5%	9.28%	3.57%
TransCanada Pipelines	36.0%	9.24%	3.33%
Union Gas	35.0%	9.30%	3.25%
AVERAGE	**36.5%**	**9.25%**	**3.38%**
TGVI	**35.0%**	**9.25%**	**3.24%**
Comparables			
AltaGas Utilities	41.0%	9.28%	3.80%
EGNB	50.0%	13.00%	6.50%
Gazifère	40.0%	9.68%	3.87%
Heritage	45.0%	13.00%	5.85%
Natural Resource Gas	40.0%	9.15%	3.66%
AVERAGE	**43.2%**	**10.82%**	**4.74%**

The Commission should further consider that a utility seeking to attract capital is in competition not just with utilities and other companies in Canada, but also with participants in capital markets beyond Canada. While TGI has the lowest allowed return on equity in Canada, average returns are lower in Canada than they are in the U.S. This is of significant concern as U.S. investments are being made more accessible to Canadian individuals and institutions as a result of changes in foreign content investment rules, and as utility investment analysts provide more coverage of U.S. utility investment opportunities. Circumstances have changed since the ROE automatic adjustment mechanism was first introduced, and since the Commission held its last hearing on ROE, and the changed circumstances require a different response if British Columbia wishes to be seen as an attractive place in which to invest capital.



A return on equity mechanism that results in investors in British Columbia utilities earning the lowest returns in Canada is inconsistent with the Provincial Government's capital attraction objectives. The 2002 Policy document *"Energy for our Future: A Plan for BC"*, the Minister for Energy and Mines stated:

> *Rising energy demands and aging facilities call for major financial investment in plant upgrades and new energy production and delivery facilities. This, in turn, requires better access to energy resources and the timely, cost-effective development of new supplies. Unless domestic energy sources are developed, British Columbians could find themselves increasingly dependent on imports and vulnerable to price swings. The government, faced with competing fiscal priorities, is looking to the private sector for much-needed energy development.*

2) Good Intentions - Unintended Outcomes

In its 1999 Decision on Return on Equity for a Benchmark Utility the Commission recognized the need for public utilities in British Columbia to have adequate returns in order to avoid difficulties attracting capital. At page 23 of that Decision the Commission said:

"failing to have a sliding scale within that range [a range of yields on long Canada bonds between 6% and 10%] could produce inadequate returns for the Utilities and result in capital attraction difficulties."

The Commission determined that changes in long Canada bond yields would be recognized in allowed returns on equity on a 0.8 to 1 ratio up and down when yields were between 6% and 10%. When long Canada yields went up one percent, the increase in the equity return to investors and the cost to customers was limited to 80 percent of the change. Similarly when yields declined within that range the decrease in the equity return to investors and the cost to customers was limited to 80 percent of the change.

Unfortunately, since there was little recent experience with long-term rates below 6%, the Commission set the lower end of the sliding scale at 6%. With current and forecast long Canada yields below the 6% level, all decreases in yield are translated directly to decreases in returns to equity investors on a one-for-one basis. This decrease in equity returns at low bond yields makes investments in the equity of British Columbia utilities less attractive, and also reduces interest coverage for debt financing. Thus, at the point where adequate returns are most critical to meet the Commission's stated intention of avoiding capital attraction difficulties, the decline in equity returns is exacerbated and capital attraction is made more difficult.

With prevailing long Canada bonds yields of 4.21% currently suggesting prospective returns below 7.75% under the existing ROE adjustment formula, the outcome could severely inhibit capital attraction in British Columbia. The sliding scale adjustment in and of itself would penalize utilities in the province by approximately 45 basis points at current yields compared with other Canadian jurisdictions who have a sliding scale adjustment of 0.75:1 through its entire range of application, ie. NEB, Alberta and Ontario.

This result urgently requires correction.

3) The Financial Times and Circumstances Have Changed

In 1994 the North America Free Trade Agreement came into effect. The changes in Canada and North America have been profound in the intervening years and adjustments have been made and continue to be made to accommodate those changes. Not least among these are the changes in the attraction and retention of capital in what has become a truly North American market. New rules governing allowed foreign content in RRSPs and pension funds in this country reflect the growing demand for capital to be free to leave this country to seek better opportunities offered outside our borders. With the restrictions removed it is incumbent on Canadian policy makers and regulators to provide an incentive for Canadians and foreigners to fill in the void that will otherwise result from flight of capital to better prospects.

This circumstance is compounded by the changed relationship between long-term interest rates in Canada and the U.S. In 1994, when the Commission first implemented the ROE adjustment mechanism, equity returns in Canada and the U.S. were similar; however, interest rates were higher in Canada (over 50 years the rates have averaged about 1% higher in Canada). This meant that in Canada equity returns enjoyed a smaller

spread over bond returns than did U.S. equity returns. Since the spread between equity returns and bond returns was narrower in Canada it followed from the use of the equity risk premium test that investors in the common equity of utilities in Canada would realize a smaller premium over bond returns than they would in the U.S.

More recently, yields on long-term Canada bonds have decreased to be equivalent to yields on long-term U.S. Treasuries. It follows that returns on investments in the common equity of Canadian utilities should be at a level at which the spread over “risk free” bond returns is more or less equivalent to that in the U.S. A key reason for equity risk premiums to be lower in Canada than in the U.S. has not been that equity returns have been lower in Canada, but rather that historically long-term interest rates have been higher in Canada. Long-term interest rates in Canada are no longer higher than U.S. rates. There is no evidence that overall equity returns in Canada are decreasing because of the disappearance of the spread between long-term interest rates in Canada and the U.S. The returns allowed on investments in the equity of Canadian utilities should relate to the returns that investors can earn on other equity investments. Consequently, the reduction in the yields on long-term Canada bonds to bring those yields in line with long-term U.S. bonds should not result in a reduction in the returns allowed by regulators on the investment in the equity of British Columbia or other Canadian utilities.

However, when the regulatory models used to determine the allowed equity returns for utilities have not been updated to reflect changes in the capital markets, the result is that utilities in B.C. and elsewhere in Canada are provided with inadequate returns and are handicapped when they seek to attract capital. Ms. McShane discusses the widening of the Canadian equity risk premium in her evidence at Tab 2 - Chapter IV, B, 5.

A further development in the capital markets in Canada has been the evolving income trust structure with tax advantages to compete for capital. In the past five years, the market value of income trusts has grown from $20 billion to over $130 billion, accounting for over 10% of the total market value of the publicly traded equity in Canada. In 2004, income trusts accounted for approximately 50% of all initial and secondary equity offerings. The appeal of income trusts lies in their income tax efficiency and in their distribution to investors of virtually 100% of their free cash flow.

The income trust market provides an attractive alternative to the conventional equity market for investors. While income trusts span the spectrum of industries, approximately 15% of the outstanding market capitalization of income trusts is attributable to pipeline and power income trusts. These income trusts, which are generally of lower or similar risk to conventional utility equities, compete directly with the conventional utility equities for capital and have been able to provide investors with attractive returns; conventional utility equities like Terasen need to be allowed to earn returns that will allow them to compete for capital on a level playing field.

4) A Single Test Does Not Ensure the Best Outcome

Prior to the 1994 introduction of the generic ROE adjustment mechanism for setting allowed returns to equity investors, the Commission and other regulatory tribunals used a number of tests to determine the appropriate return on equity for an investor in a utility. The *discounted cash flow* test, the *comparable earnings* test and the *equity risk premium* test were all used but with 1994 and 1999 Decisions the Commission adopted, for all intents and purposes, the *equity risk premium* test as the only test used. The Companies believe this reliance on a single approach is inadequate and has resulted in unfair low returns on equity for the investors in TGI and TGVI.

In a recent case before the National Energy Board ("the NEB", "the Board") concerning the TransCanada Pipelines Mainline, the Board was of the view that a fair return standard can be articulated by having reference to three particular requirements. Specifically, a fair or reasonable return on capital should:

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

The final two points are significant, in that they suggest the regulator should be proactive in taking steps to maintain the financial integrity of utilities and to facilitate capital attraction. These two factors can be positively influenced by appropriate returns on equity as well as capital structure, i.e. by increasing the deemed equity component of the capital structure to mitigate financial risk. The NEB's Decision will be further examined in the following section.

Kathleen McShane discusses the three tests noted above, and their respective merits, in her testimony in Tab 2 - Chapter IV, sections C through E.

5) Financial Flexibility to Compete

A public utility must always have sufficient financial flexibility to meet the capital requirements imposed by customer growth, technological change or emergent situations. Utilities are large consumers of both equity and debt capital. Their fundamentals are watched carefully and scrutinized thoroughly by the financial analyst community for equity investors and by the debt rating agencies. The latter are very sensitive to the proportion of equity (both common and preferred) in a utility's capital structure as it provides for investors lending money to a utility, and to the cash generated by the allowed returns to ensure that the interest on the debt of the utility can be serviced.

Dominion Bond Rating Service has expressed its concerns regarding the low allowed ROEs and equity components in Canada compared to the U.S. and other jurisdictions. In a May 2003 presentation (attached in Tab 3), DBRS noted that, "competition is growing,

raising risk and justifying higher rates of return" (page 8), and that "Canadian utilities have less 'safety margin' than U.S., and are vulnerable to a quick downgrade if something goes wrong" because of the low allowed ROEs and deemed equity components in Canada (page 11). DBRS recommends a movement towards performance-based regulation (which is already in place for TGI and TGVI), together with an increase in the allowed return on equity to make it more consistent with U.S. returns, and an increase in the deemed equity component to the 35%-40% range (page 12).

Standard & Poors ("S&P") has expressed its opinion that Canadian utility regulation, while favourable from a credit perspective, is not so favourable as to justify the low returns and thin common equity capital structures typically seen historically in Canada. Attached (see Tab 4) is a January 2005 presentation by S&P to CAMPUT which considered in detail how Canadian regulation compares to other global comparables, concluding that the "regulatory environment in Canada is near median of peer jurisdictions from relative risk perspective" (page 18).

S&P's views on Canadian regulation resulted in the downgrade of TGI's rating from BBB+ to BBB on June 26, 2003. Although TGI has terminated S&P's engagement to provide credit ratings in order to manage costs, S&P has elected to continue to publish credit ratings on TGI debt. As a result, S&P's ratings continue to have influence on bond investors. At a credit rating of BBB, together with A2 and A(mid) ratings from Moody's and DBRS respectively, TGI has adequate access to the Canadian bond markets. However, a further downgrade by S&P to BBB-, which could arise from further deterioration in TGI's allowed ROE, could seriously jeopardize Terasen Gas' access to the bond markets, as the rating would be only one notch above non-investment grade, or "junk" status. Many Canadian bond investors are prohibited from holding junk-rated bonds. A TGI rating of BBB- would cause investors to hesitate from buying Terasen Gas bonds for fear of a further downgrade to junk status (arising from any number of factors such as regulatory change or business risk deterioration).

As noted above, TGI has "A" ratings from both Moody's and DBRS, and these ratings help support TGI's access to the bond markets. However, the impact of a downgrade to junk status in Canada is much greater than the impact of any other type of credit rating downgrade, because of the investment policy restrictions that typically prohibit Canadian institutional bond investors from holding non-investment grade rated bonds. Further, many investment policies provide that the lowest assigned rating is to be used in the case of "split" credit ratings. Therefore, it is essential that the return on equity and capital structure determined for TGI be sufficient to ensure that the current S&P credit ratings are at least maintained.

At the time of the downgrade by S&P of TGI's credit rating to BBB in 2003, the allowed ROE for TGI was 9.42%. The ROE of 7.71% that would result from the application of the existing ROE formula at today's prevailing long Canada yields of 4.21% would constitute a material deterioration in returns from 2003 levels, particularly considering the levels of allowed ROEs and equity components seen in other Canadian jurisdictions.

In a similar vein, in the recent National Energy Board decision concerning the TransCanada PipeLines Mainline, the Board noted:

> "While there are some differences in opinion amongst the three credit rating agencies (DBRS, S&P, and Moody's) concerning TransCanada's financial integrity, the underlying message from these agencies is that, given the evolving nature of the business, TransCanada's Canadian regulated pipelines, including the Mainline, should lower their financial risk. The Board also notes the comment in a 2004 S&P published report to the effect that TransCanada's Canadian pipelines' financial performance and business profile are more in line with the 'BBB+' ratings category."[1]
>
> "The Board does not consider it appropriate to set a specific credit rating target. However, the Board accepts that should credit rating agencies downgrade TransCanada below the grade Canadian institutional investors generally require for the majority of their holdings, *it could increase the Mainline's cost of debt and equity capital, and limit the number of investors able to hold TransCanada's securities*" [emphasis added] [2]

The NEB Decision increased the TransCanada Mainline deemed equity levels from 33% to 36%. The Board concluded that, overall, the business risk to which the Mainline is exposed has increased since the last assessment of TransCanada's cost of capital in the RH-4- 2001 Hearing (2001-2002 Mainline Fair Return Application), in part as a result of deterioration in long term supply security and increases in competitive risk. The Board also concluded that an increase in TransCanada's common equity ratio was warranted in order to ensure that the Mainline continues to maintain its financial integrity and its ability to attract capital on reasonable terms and conditions.

TGI maintains that the equity thickness concerns expressed by the rating agencies and acknowledged by the NEB pertain as well in British Columbia and require a positive response from the Commission to 'maintain financial integrity' and to 'attract capital on reasonable terms'.

In addition, TGI's equity component has effectively declined since the last comprehensive review of Terasen Gas' capital structure. In 1994, preferred shares represented approximately 8% of the Company's capital structure in addition to the allowed 33% common equity component. At that time, preferred shares were classified as equity for financial statement purposes and were considered to provide significant equity benefits for debt-holders. Total equity in 1994 was therefore approximately 40-41% of total capital.

Since that time, credit rating agencies have moved to a more conservative view of preferred shares and now consider them to be more akin to debt for credit rating assessment purposes. As a result, the preferred shares were refinanced with conventional debt in the late 1990s without any corresponding adjustment to common equity levels such that total equity is now equivalent to the deemed common equity component of 33%. Even if only partial weighting was given to preference shares as a

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[1] National Energy Board, Reasons for Decision, TransCanada PipeLines Limited - 2004 Mainline Tolls and Tariff Application - RH-2-2004 - Phase II - April 2005, Page 77

[2] Ibid, P. 77

form of equity in 1994, when TGI was deemed the benchmark low risk utility by the Commission, TGI's effective equity component would have been higher than the 33% currently allowed. With the increase in business risks since that time, which are discussed below, a further increase over the effective equity level of 1994 is warranted.

6) In a Risk Averse World the Risks of TGI and TGVI are Growing

An ROE adjustment mechanism to calculate the allowed return for the benchmark low risk utility was introduced in British Columbia in 1994 by the BCUC. TGI (then BC Gas Utility Ltd.) was deemed the benchmark utility based on the risk profile associated with the business at that time. In its 1999 Decision, the Commission continued to regard TGI as the benchmark.

Business risk is comprised of many elements. For a gas distribution utility, significant components of business risk are the competitiveness of the natural gas commodity versus other alternate energy forms and the utility's related ability to attract and retain its customer base, throughput levels and positively impact system load factors. These risk factors determine whether the utility will be able to recover its investments in rate base over time and affect its ability achieve its allowed return.

When the automatic adjustment mechanism for ROE was introduced, the competitive environment in which the TGI operated was very different than it is today. TGI submits that its business risks have increased significantly over the period and that both a higher ROE than is currently calculated by the adjustment mechanism and a capital structure containing more common equity is appropriate for rate making purposes. A detailed discussion of changing business risks is included with this submission in Tab 1.

The following key drivers of competitiveness and business risk have changed for TGI in recent years.

- Natural gas no longer enjoys a substantial operating cost advantage over electricity. Electricity is a requirement for every home; adding a furnace and ducting for gas heating adds to the front end cost of building a home. When the price of natural gas was substantially lower than electricity consumers were inclined to demand natural gas because of the lower cost over time. As gas prices have risen over the past decade and electricity prices remained relatively flat (decreasing in real terms) natural gas lost much of its competitive price advantage;
- TGI's overall rate of capture of the new construction market has declined significantly from the levels of early 1990s resulting in substantially lower customer additions at similar housing start levels;
- With housing affordability challenged in the Lower Mainland, a greater proportion of new housing will be multi-family dwellings for which electricity achieves the overwhelming market share;
- A greater number of alternative energy sources are available now to prospective customers (e.g.: heat pumps). On the commercial customer side, existing rate design for gas is making heat pumps an attractive alternative; and in new multi-family construction, where electric baseboard heating has been dominant, the

use of ground source heat pumps has been increasingly specified, displacing gas altogether or limiting it to fireplace load which does not reduce the capital cost to the utility but restricts the load and therefore actual revenues billed;

- When natural gas commodity prices spiked in the winter of 2000/01, industrial users exercised fuel switching alternatives and residential/small commercial customers use rates declined dramatically. Greenhouses began burning wood waste and other alternative fuels and while most have come back to gas, many installed more efficient systems or augmented their use of natural gas with other fuels such as wood. This results in lost throughput which puts upward pressure on delivery rates, exacerbating the competitive price challenge.

Individually and in total these changed circumstances have produced an operating environment that has higher business risks than those that existed for TGI in the past.

Terasen Gas (Vancouver Island) Inc. faces similar challenges but must also deal with the added burdens of:

- Being a relatively young utility building a new market on Vancouver Island;
- In addition to dealing with higher costs of gas and further disadvantaged by the differences in gas versus electric rate design methodologies, having to recover an accumulated deficit that peaked at approximately $88 million in 2002;
- Planning for the elimination of Provincial royalty revenues in 2012 currently in the order of $35 million per year and covering approximately 20% of the current cost of service;
- Being highly dependent on industrial load totaling in excess of 65% of throughput for which approximately two thirds is contracted on a year to year basis with no long-term commitment;
- Greater security of supply risk due the fact that all gas to the Island flows from a single source on the mainland and is also dependent on the use of undersea high pressure transmission facilities; and
- Is liable for the repayment of $75 million non-interest-bearing senior government debt, currently sitting as a credit to rate base, which when repaid will contribute to higher cost of service and impact the competitive position of the utility.

Terasen Gas competitiveness to electricity versus other jurisdictions

Not only has a shrinking price advantage versus electricity led to higher business risk for TGI than in 1994 and 1999 when the ROE adjustment mechanism was first introduced and subsequently updated, TGI also has a higher degree of business risk than other similar companies in Canada and the Pacific Northwest. Table 1 below shows the natural gas versus electric price differential for TGI and five other gas distribution companies, based on current residential customer rates. The price advantage enjoyed by the other companies ranges from 43% to 64% compared to an approximate 19% price advantage enjoyed by TGI in the Lower Mainland.

Table 1
Comparison of Natural Gas versus Electric Price Advantage for Five Companies
2005

	ANNUAL BILL - NATURAL GAS	ANNUAL BILL - ELECTRIC	GAS VS. ELECTRIC PRICE ADVANTAGE
Terasen Gas (Lower Mainland)	$1,353	$1,664	19% lower
Northwest Natural Gas – Oregon	$1,550	$2,705	43% lower
Direct-Atco – Alberta	$ 925	$2,537	64% lower
Union Gas – Ontario	$1,171	$2,791	58% lower
Enbridge Gas - Ontario	$1,347	$2,791	52% lower
Gaz Metro – Quebec	$1,415	$1,612	12% lower

Notes:
* Annual bills for natural gas and electric, for all territories, are based on an annual use rate of 110 GJ.
* The efficiency of gas equipment is assumed to be 90% relative to 100% for electricity to determine equivalent electricity usage. Lower gas efficiency appliances would result in lower gas price advantages than indicated above.
* The annual electric rates do not include the fixed monthly charges since it is assumed that a household already pays the basic electric charge for non-heating use.
* The Northwest Natural gas and electric rates are in CDN funds (1.24 exchange rate used).
* Terasen Gas rate is as of July 1, 2005 and all other rates are as at June 1, 2005.
* All rates are exclusive of applicable franchise fees and/or taxes. Interior BC community customers pay a franchise fee of approximately 3% which would reduce the indicated price advantage of gas by a like amount

Currently, residential electric rates for TGVI are actually slightly higher, by approximately 1%, than equivalent electric rates on an energy efficiency adjusted basis.

Based on existing Provincial energy policy and BC Hydro rate design, the competitive position of natural gas versus electricity is not expected to return to the situation that existed in the early 1990s.

Conclusion

In 1994, when the Commission introduced its ground-breaking ROE adjustment mechanism for setting rates of returns, it reflected the economic climate and circumstances of the day. Much has changed. In British Columbia, in Canada and in North America there is intense competition for capital.

TGI asks the Commission to move in accordance with these changed circumstances and recognize that it is not appropriate to subject investors in TGI to the worst allowed returns on equity in the country.

TGI asks that the Commission recognize that TGI, TGVI and other British Columbia utilities must compete for capital with other Canadian utilities and with utilities in the U.S. The Commission should take a leadership role in awarding returns on equity, and establishing capital structures, that are appropriate in today's financial markets and reflect the business and financial risks of the utilities in British Columbia.

Terasen Gas Inc. requests that the Commission acknowledge changed circumstances by allowing Terasen Gas Inc. a common equity component of 38% in its capital structure, and a return on equity of 10.50% when long-term Canada bonds are forecast to yield 5.25%. Terasen Gas (Vancouver Island) Inc. requests that it be allowed a common equity component of 40% and be granted an additional 75 basis point increment over the allowed return on equity of TGI (i.e. 11.25% when the forecast yield on long-term Canada bonds is 5.25%).

Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. request that the Commission convene a procedural pre-hearing conference in early July to establish a timetable for information requests and an Oral Public hearing to take place in the fall of 2005 in time for Decisions to be incorporated into the rate setting processes of affected utilities in British Columbia for January 1, 2006.

Questions concerning this application may be directed to Scott Thomson (604) 592-7784 or Tom Loski (604) 592-7464.

All of which is respectfully submitted,

TERASEN GAS INC.
TERASEN GAS (VANCOUVER ISLAND) INC.

Original signed by:

Scott A. Thomson

cc: Parties to the 2004-2007 Negotiated Settlement
Parties to the Terasen Gas (Vancouver Island) Inc. 2003-2005 Negotiated Settlement
PNG
FortisBC
BC Hydro
BCTC

Background

The Commission held a public hearing in 1994 into the appropriate rates of return on common equity and capital structure for BC Gas Utility Ltd. (“BC Gas”) (now Terasen Gas Inc.), West Kootenay Power Ltd. (“WKP”) (now FortisBC Inc.) and Pacific Northern Gas Ltd. (“PNG”) and established a mechanism for calculating the allowed ROE on an annual basis in BCUC Order No. G-35-94.

In 1997, the Commission, by Order No. G-49-97, amended the ROE mechanism to correct for certain problems and to make it more consistent with the practices of other Canadian jurisdictions. In that Order the Commission directed that the automatic adjustment mechanism apply over a range of 6% to 12% long Canada bond yields.

In December of each year from 1995 through 1998, the Commission issued letters informing BC Gas, PNG, WKP and Centra Gas Fort St. John of the ROE allowed for rate making purposes for each subsequent year based on calculations pursuant to the original and amended ROE mechanism. Centra Gas British Columbia's (now Terasen Gas (Vancouver Island) Inc.)) ROE was set by Special Direction at that time.

On March 11, 1999, the Commission issued Order No. G-26-99 setting down an oral public hearing into the appropriate ROE and Capital Structures for BC Gas, PNG, WKP, Centra FSJ and Centra Gas Whistler Inc. BC Gas, PNG and WKP (“the Utilities”) asked the Commission to limit the items for consideration to the ROE for a low-risk benchmark utility and to the automatic adjustment mechanism; and asked to proceed on a written basis. An oral public hearing followed resulting in Commission Order G-80-99, which directed that the automatic ROE adjustment mechanism should continue to be employed, with certain changes.

On November 1, 2000, BC Gas applied to the Commission to adjust the application of the automatic ROE adjustment formula to address the then-current situation of yields on 10-year Government of Canada bonds exceeding the yields on 30-year Government of Canada bonds. The Commission reviewed the submissions of the various parties and decided not to vary the application of the ROE adjustment mechanism for 2001, as stated in Letter No. L-61-00.

In letter No. L-62-01, the Commission established a written public hearing to review the yield spread between medium and long-term bonds in 2001 to consider whether amendments should be made to the mechanism for 2002. Following that written proceeding, the Commission determined by Order No. G-109-01 that the treatment of the yield spread between 30-year and 10-year bonds did not require adjustment. The Commission also determined that the ROE for the low-risk benchmark utility, expressed as a percentage, should be rounded to two decimal places prior to adding the utility-specific risk premium.

On July 22, 2004, TGI wrote to the Commission requesting the Commission convene a hearing to review return on equity and capital structure. By Order G-88-04 the Commission determined that a hearing was not warranted at that time but concluded that such a review could be appropriate in the Fall of 2005 in time for implementation January 1, 2006.

This submission sets out the rationale for the requests of TGI and TGVI that the allowed returns on equity of both Companies be increased to an appropriate level and that the

common equity component in the capital structure of both Companies be increased, to properly reflect the risks of the Companies, and that the current ROE adjustment mechanism be reviewed and revised to provide the Companies with a fair and adequate return on equity in future years.

Terasen Gas Business Risks

When the first generic ROE adjustment mechanism to establish the allowed return for the benchmark low risk utility was introduced in British Columbia, TGI (then BC Gas Utility Ltd.) was deemed the benchmark utility based on the risk profile associated with the business at that time. In its 1997 Order and its 1999 Decision the Commission continued to regard TGI as the benchmark utility.

Business risk for a gas distribution utility ultimately relates to the enterprise's ability to recover its investment in its assets or "rate base" and its ability to achieve its allowed return on equity. Significant factors that affect the level of business risk of a gas distribution utility are the competitiveness of the natural gas commodity versus other alternate energy forms and the company's related ability to attract and retain its customer base, throughput levels and to positively impact system load factors. These risk factors determine whether the utility will be able to recover its investments in rate base over time and impact on the utility's ability achieve its allowed return.

Between 1994 and 2005, the price advantage of natural gas compared to electricity in B.C. declined from 63% to 18% (the amount gas rates were less than electricity). Over the same time period, customer growth rates for TGI declined from 3.3% in 1994 to a low of 0.6% following the step function change in natural gas prices in 2000/2001.

A utility's ability to manage risk is in part dependent on the way it is allowed to interact with customers. Over time, TGI has been encouraged by stakeholders and through the regulatory process to exit performing service work downstream of the customer's meter where competitive markets have an opportunity to work. In addition, the expansion of commodity unbundling to commercial customers further removes TGI from its customers.

When the automatic adjustment mechanism for ROE was introduced, the competitive environment in which TGI operated was very different than it is today. TGI believes that its business risks have increased significantly over the period and that both a higher ROE than is the current result of the calculation under the automatic adjustment mechanism and a capital structure containing more equity is appropriate in today's circumstances. A discussion of the business risks of TGI and TGVI follows.

Operating cost advantage of natural gas versus other energy sources has declined:

As shown in Figures 1, 2 and 3 below, natural gas enjoyed a substantial price advantage versus electricity in the early 1990's throughout the three TGI regions (Lower Mainland, Inland and Columbia). In all three regions, the cost of natural gas to a customer in 1994 was less than half the cost of using electricity for the same applications. This price advantage has gradually declined as natural gas rates have increased to reflect rising commodity costs while electricity rates have been held relatively constant. As shown in

Table 1, the price advantage for natural gas versus electricity has declined to approximately 20% in the Lower Mainland in 2005. Decreased cost advantage versus electricity increases business risk because growth in the customer base and throughput is more challenging to achieve. Moreover, TGI is at risk of losing load if gas competitiveness deteriorates further. When natural gas commodity prices spiked in the winter of 2000/01, industrial users exercised fuel switching alternatives and residential/small commercial customers use rates declined dramatically. Customer attachments dropped off significantly as well.

Figure 1
Residential Annual Natural Gas and Electric Energy Costs in the Lower Mainland
1994 - 2005

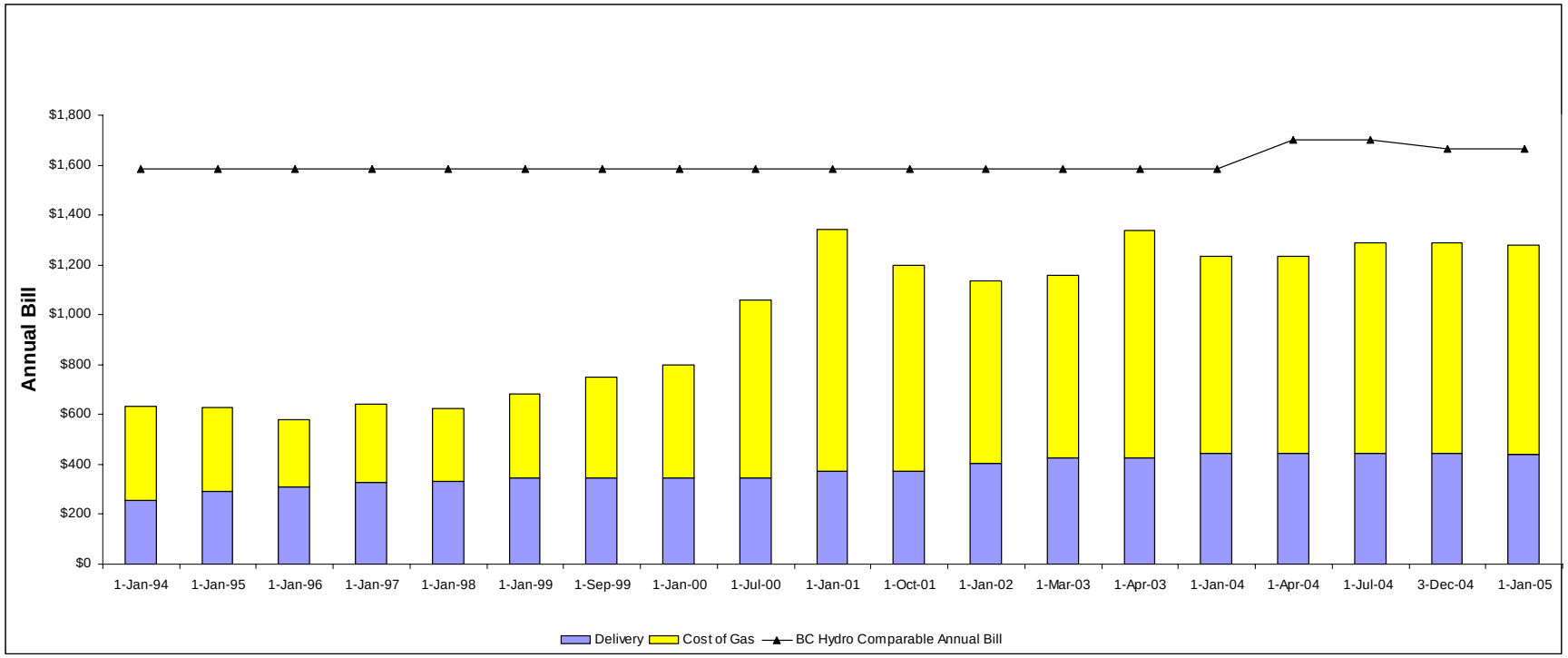


Figure 2
Residential Annual Natural Gas and Electric Energy Costs in the Interior
1994 - 2005

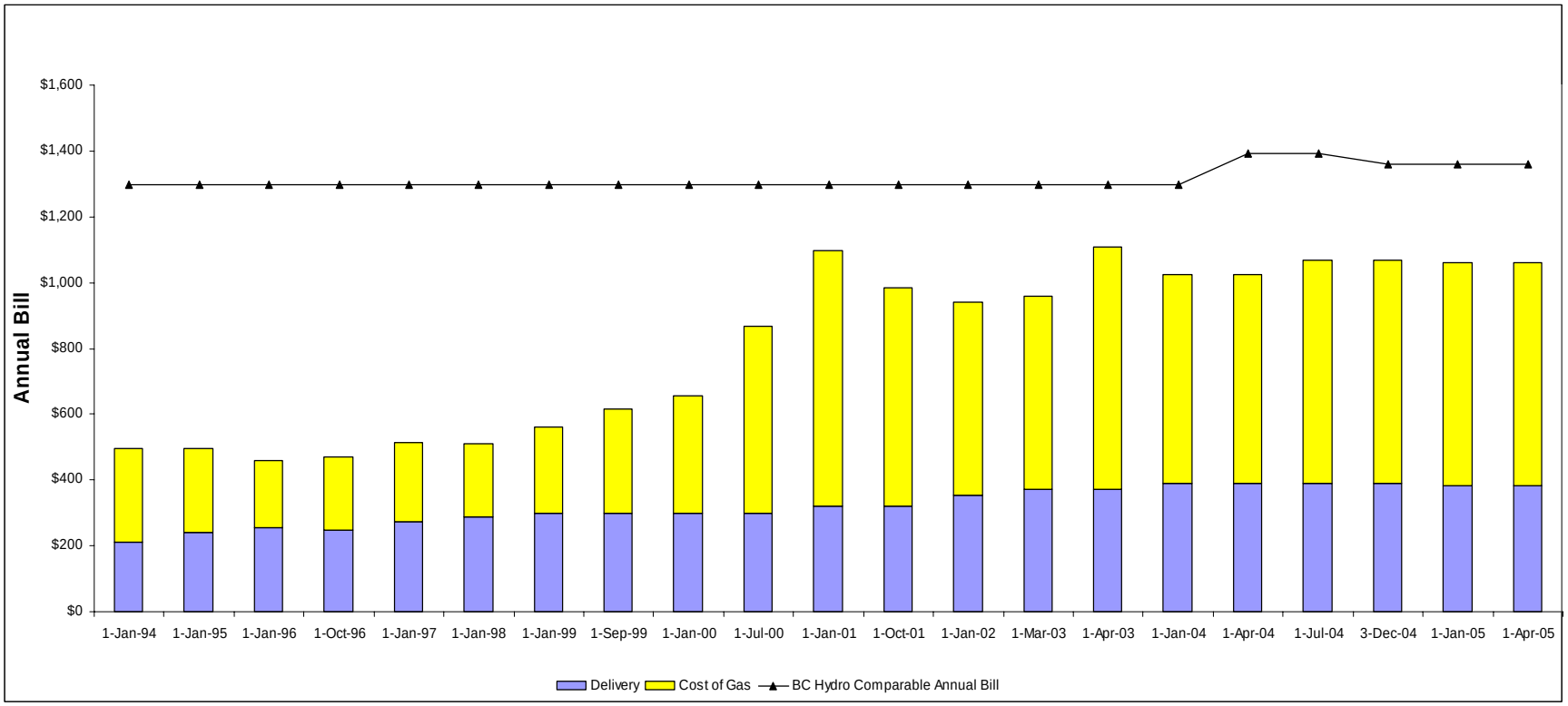
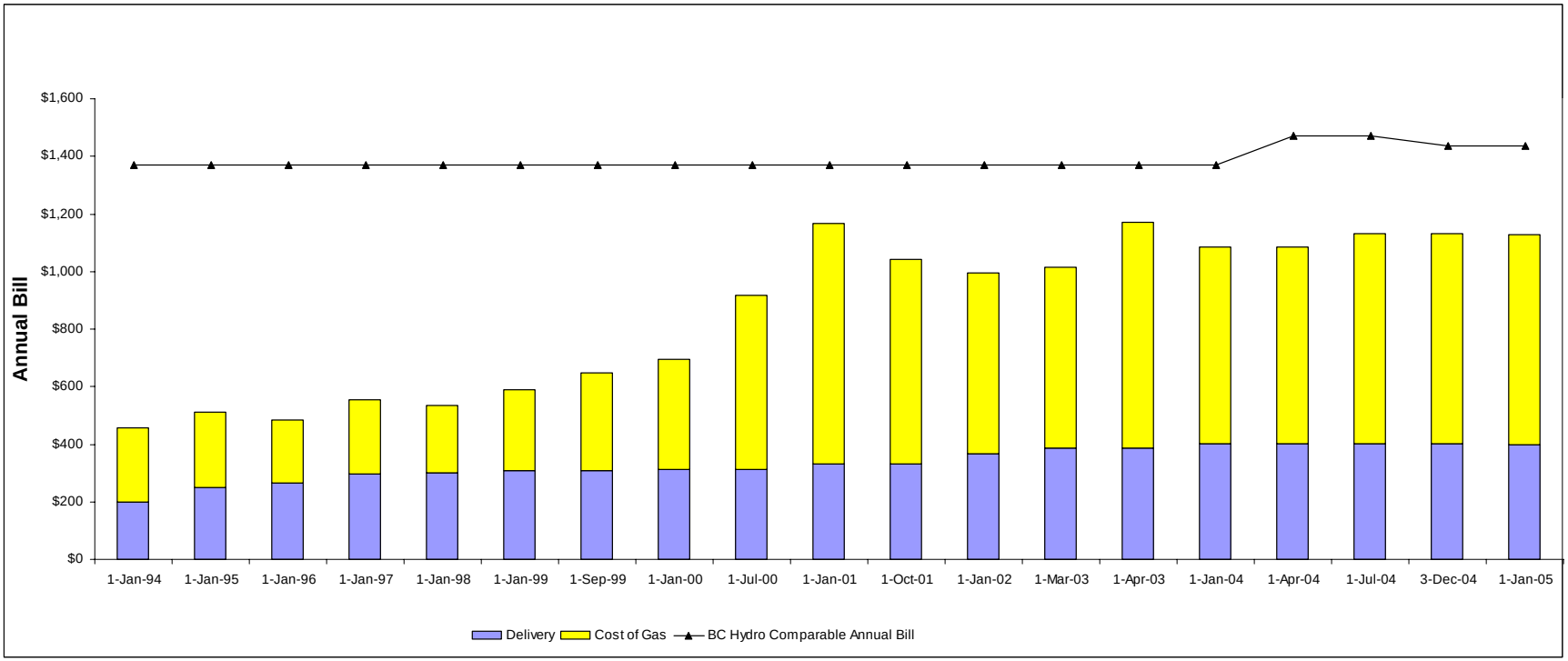


Figure 3
Residential Annual Natural Gas and Electric Energy Costs in the Columbia Region
1998 – 2005



The decreasing cost advantage for natural gas versus its primary competition combined with the capital and installation costs for electric baseboard heaters being lower than those of natural gas heating equipment has created a market environment that is more challenging now than in the past. TGI estimates that capital and installation costs for a natural gas heating system are approximately three to four times higher than for electric baseboards. A more challenging market environment translates to higher business risk.

Terasen Gas competitiveness to electricity versus other jurisdictions:

Not only has a shrinking price advantage versus electricity led to higher business risk for TGI now than in 1994, and 1999 when the Commission implemented, and later reviewed, the ROE adjustment mechanism in oral hearings, and established the baseline for ROE calculations under the adjustment mechanism. TGI also has a higher degree of business risk than other similar companies in Canada and the Pacific Northwest. Table 1 below shows the natural gas versus electric price advantage for TGI in the Lower Mainland and five other gas distribution companies, based on current residential customer rates. The price advantage enjoyed by the other companies who compete against market priced electricity ranges from 43% to 64% as compared with the 19% price advantage enjoyed by TGI. Of the comparison group, only Gaz Metro has a tighter spread between their rates and electric rates. Similar to TGI and TGVI, Gaz Metro competes with a Crown owned hydro electric utility but has substantially higher allowed returns and equity thickness than does TGI and Hydro Quebec discourages electric space heating where natural gas is available.

Table 1
Comparison of Natural Gas versus Electric Price Advantage for Five Companies
(2005)

	ANNUAL BILL - NATURAL GAS	**ANNUAL BILL - ELECTRIC**	**GAS VS. ELECTRIC PRICE ADVANTAGE**
Terasen Gas (Lower Mainland)	$1,353	$1,664	19% lower
Northwest Natural Gas – Oregon	$1,550	$2,705	43% lower
Direct-Atco – Alberta	$ 925	$2,537	64% lower
Union Gas – Ontario	$1,171	$2,791	58% lower
Enbridge Gas - Ontario	$1,347	$2,791	52% lower
Gaz Metro – Quebec	$1,415	$1,612	12% lower

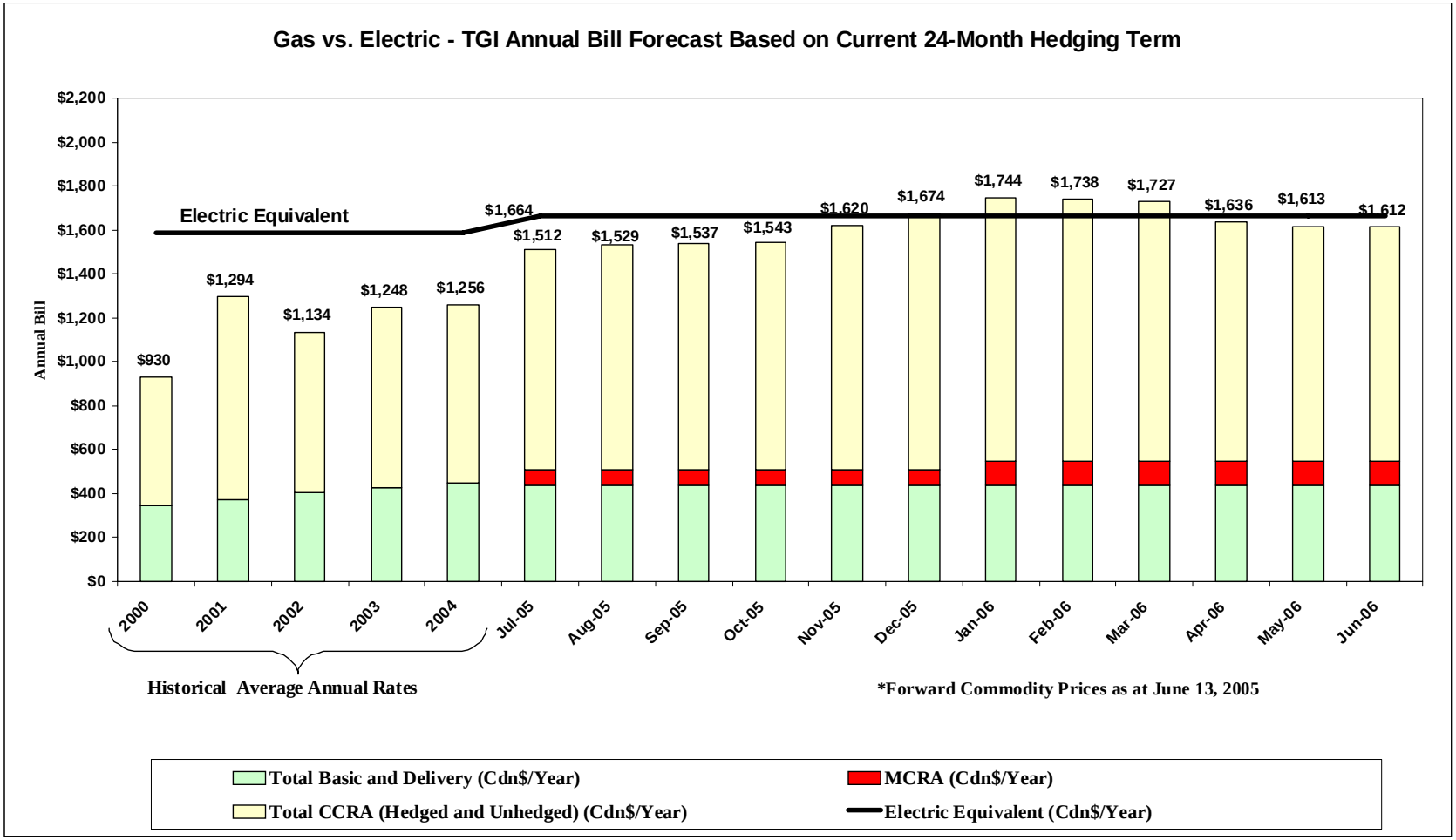
Notes:

* Annual bills for natural gas and electric, for all territories, are based on an annual use rate of 110 GJ.
* The efficiency of gas equipment is assumed to be 90% relative to 100% for electricity to determine equivalent electricity usage. Lower gas efficiency appliances would result in lower gas price advantages than indicated above.
* The annual electric rates do not include the fixed monthly charges since it is assumed that a household already pays the basic electric charge for non-heating use.
* The Northwest Natural gas and electric rates are in CDN funds (1.24 exchange rate used).
* TGI rate is as of July 1, 2005 and all other rates are as at June 1, 2005.
* All rates are exclusive of applicable franchise fees and/or taxes. Interior BC community customers pay a franchise fee of approximately 3% which would reduce the indicated price advantage of gas by a like amount

TGVI by comparison operates under a rate design that utilizes a soft cap which sets rates with reference to cost of service and the competitive energy alternative, i.e. electricity or heating oil. For residential customers the cost of natural gas slightly exceeds that of electricity on an efficiency adjusted basis.

Based on existing Provincial energy policy and BC Hydro rate design, the competitive position of TGI is not expected to return to the situation that existed in the early 1990's. As shown below in Figure 4, natural gas costs to customers are expected to converge with electric costs in early 2006 based on TGI' current 24 month hedging strategy and the June 13, 2005 forward strip, although a slight price advantage could be regained by mid-2006.

Figure 4
Historical and Forecast Annual Natural Gas and Electric Energy Costs in Lower Mainland 2000 through 2006



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Customer Attraction Challenges

The growth potential of TGI is related to the new construction market in British Columbia, but capture rates have been negatively impacted by the price competitiveness trends discussed above. New housing starts declined steadily between 1993 and 2000 (Figure 5 below). More recently housing starts have been favourably impacted by a number of economic factors such as interest rates, consumer confidence, increased fiscal stimulus by the provincial and federal governments and anticipation of the 2010 Olympics.

Currently housing starts are higher than the long run average. Since 1997, annual housing starts in BC have averaged approximately 18,000 units. When the ROE adjustment mechanism was introduced in BC, annual new construction starts were in the 30,000 range. As noted, TGI's growth prospects are highly affected by housing start levels.

There is a significant risk that housing construction will not be sustained at current levels with the Bank of Canada indicating that it will begin reducing monetary stimulus through short-term interest rate hikes. In its May 25, 2005 target overnight rate announcement, the Bank of Canada stated:

> "Consistent with the analysis in the [April 2005 Monetary Policy Report] the Canadian economy is expected to move back to its production capacity in the second half of 2006, with core inflation projected to return to 2 per cent around the end of next year. In line with this outlook, a reduction of monetary stimulus will be required over time."

Therefore, over the past decade, the challenge to growth and the business risk profile has increased.

Multiple family housing starts continue to outpace single detached homes (Table 2), and the pool of potential single-detached new home buyers is shrinking as home prices are pushed up by rising land and building costs. For example, in the Fraser Valley and Greater Vancouver area, new single-detached home prices exceed $500,000 in most areas, putting this type of housing out of reach for many potential buyers, including first time buyers. First time homebuyers are typically purchasers with modest budgets that push them into the multi-family dwelling segment. Selection of electric space heating reduces upfront "non-visible" construction costs and allows higher expenditure allocations to aesthetic items. Code changes due to recently introduced safety requirements have resulted in approximately a doubling of costs for gas hot water tanks. This puts further pressure on natural gas as an energy choice. Today, approximately 2/3rds of all housing starts are multiple units and TGI's estimated capture rates in this segment are running at less than 20%.

Table 2
New Construction Proportion of Single versus Multi Family Dwellings
1990 - 2004

	Single Family (%)	**Multi Family (%)**
1990	42	58
1991	50	50
1992	46	54
1993	36	64
1994	37	63
1995	36	64
1996	40	60
1997	37	63
1998	37	63
1999	48	52
2000	46	54
2001	40	60
2002	44	56
2003	42	58
2004	37	63

As discussed above, TGI no longer enjoys the same competitive price advantage as it did when the automatic ROE adjustment mechanism was introduced. This decreased competitiveness is reflected in the significant decline in net customer additions compared to housing starts[1]. In 1992, net customer additions for TGI were equal to 80% of new construction starts compared with 42% in 2004 (Figure 5 and Table 3). During that period net customer additions dropped to a low of 27% following the spike in natural gas commodity prices in the winter of 2000/01.

[1] It should be noted that net customer additions include new premises, conversions of existing housing stock to natural gas as well as re-occupancy of vacant premises and are net of customer lock-offs and abandonments, etc. There is also a time lag between the recognition of a housing start and the actual capture of a customer addition, i.e. when gas commences flowing through the meter of an occupied home. Consequently, comparison of housing starts and net customer additions provides a useful directional indicator but is not equivalent to the actual capture rate of new housing starts. TGI currently does not have the systems to track actual capture rates on new housing starts.

Figure 5
New Construction Starts and Terasen Gas Net Customer Additions
1990 – 2004

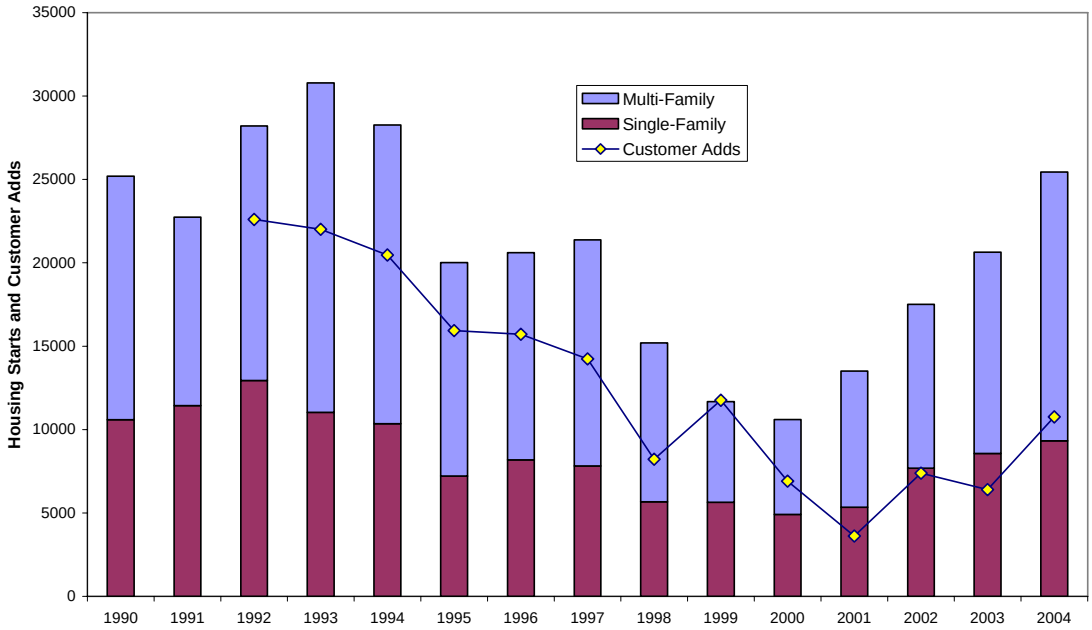


Table 3
Terasen Gas Net Customer Additions vs. New Construction
1992 - 2004

Yr	92	93	94	95	96	97	98	99	00	01	02	03	04
Net Customer Additions vs. New Construction (%)	80	71	72	80	76	67	54	100	65	27	42	31	42

In addition to price competitiveness, a significant driver of lower capture rates today versus the past is the higher proportion of new construction in multi-family vs. single family units. While natural gas has experienced a high capture rate for single family units historically, electric baseboard heating has dominated multi-family construction units leading to lower capture rates in that market segment. Although there has been no clear trend in the single versus multi family mix (Table 2), it is reasonable to anticipate that first time home buyers facing unprecedented high housing costs are likely to be driven toward cheaper multi-family housing units. With current market capture rates so low in this segment and a reasonable expectation that this segment will be even more dominant in future, risk of declining customer attachments is increasing.

Declining customer attachments are problematic for existing customers because new customers mitigate part of the impact of declining use rates. Failing to maximize customer capture contributes to competition price challenges on a delivered unit cost basis.

This is further compounded by provincial and municipal government actions, such as BC Housing Authority design specifications for subsidized housing, which encourage the use of electric space heating and the market response to the implementation of the Kyoto Accord. Lack of a comprehensive policy approach by governments at all levels is having the effect of discouraging direct gas fired use while ignoring the broader impact of higher net emissions where electricity is generated for space heating from less efficient thermal generating stations.

Alternative energy sources are more prevalent now than in the early 1990s:

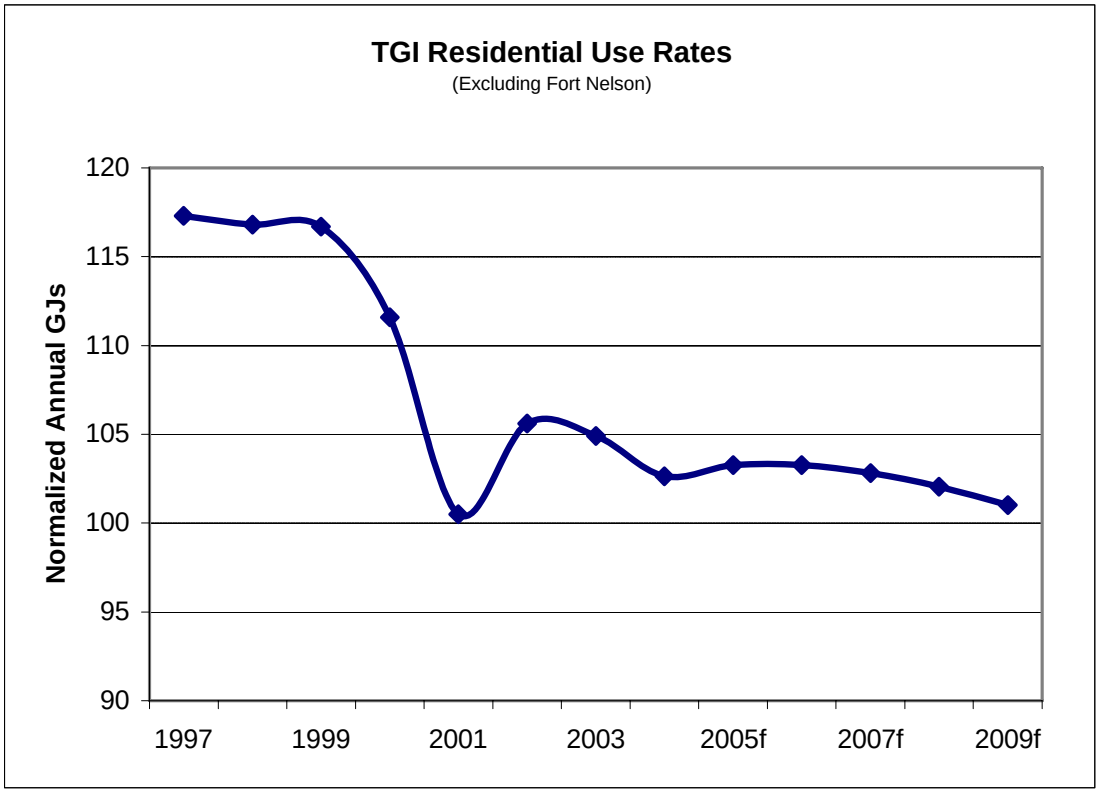
TGI competitiveness and therefore business risk is also negatively impacted by the availability of alternative energy sources and equipment. The residential heating market today includes alternatives such as ground source and air source heat pumps that are much more economical and more readily available today than they were in the early 1990s. TGI has lost a number of projects to non-gas/non-traditional heating systems in recent years. For instance, the current development of a large five tower complex announced in the Whalley district of Surrey has specified geo-thermal heating.

In the commercial customer segments, energy alternatives such as wood waste and recycled oil are now being used instead of natural gas. Similarly, industrial users in response to escalating natural gas commodity costs have invested in alternative fuel technologies and infrastructure, such as the use of hog fuel in the pulp and paper sector. With the recent demise of the Duke Point Power gas fired project, coal fired electric generation is being openly discussed as a realistic prospect in British Columbia in future.

Overall, there are a greater number of competitive alternatives available to prospective customers now than in the past. Consequently the business risks of TGI have increased over the past decade.

Declining Annual Use Rates

The annual use of natural gas by residential customers declined steadily through the 1990s and is forecast to continue to decline in the future. This decline is the result of a combination of factors such as response to higher and more volatile commodity prices, advances in gas appliance and construction technology, and changes in housing and building space choice. The chart below shows the extent of this trend, with a reduction in use rates of 12.5% between 1997 and 2004 and a further ~ 2% decline forecast to occur by 2009. This decline in use rates places upward pressure on customers' rates, and contributes to the compression of natural gas and electricity rates.



Consumer's environmental awareness and perceptions regarding fossil fuels and the Kyoto accord and related climate change initiatives are also influencing energy choices. Though well meaning, this can lead to inappropriate decisions. In multi-family construction, developers have a strong capital cost incentive to choose electric baseboard heating, as it is cheaper to install than gas heat infrastructure. Even if operating costs of electric baseboard heating are similar to those of gas (on account of electricity pricing based on low embedded cost generating assets vs. market priced natural gas commodity pricing, this choice incurs a green house gas (GHG) penalty as electricity generation at the margin is gas fired and is less efficient than end use gas consumption.

Paradoxically, alternative energy sources such as ground source heat pumps and wind farm electricity generation with very high capital costs are being embraced by environmentally sensitive consumers and subsidized by governments, in order to reduce GHG emissions and mask related costs to consumers through taxation rather than energy pricing flow throughs. TGI supports these sustainability initiatives through its Demand Side Management (DSM) programs but sees a role for natural gas in the long term sustainability picture due to the advantages inherent in its physical properties, i.e. lowest emissions of the fossil fuels, no/low particulate matter, etc. Gas use should be encouraged as noted above, as the right fuel for the right application. Unfortunately, DSM programs, even when properly designed can negatively impact customer use rates. While other Canadian utilities can obtain significant financial rewards for their DSM programs, such as Union Gas in Ontario, which mitigates the lower use impacts, TGI does not.

So the gas distribution sector in British Columbia gets hit both ways. Competition from electricity erodes market share on price and competition from alternative energy sources are subsidized by government climate change initiatives. Consumer misperceptions and misinformation must be overcome by the gas sector in order to continue attracting new customers and retaining existing business.

TGI faces a considerable challenge in managing the effects of declining use rates as it is caused by a combination of factors largely out of the direct control of TGI, such as market forces (i.e. commodity price movement) and customer behavior (i.e. lifestyle choice) noted above. The long-term trend in declining use rates coupled with communities and stakeholders long term desire to move towards alternative, sustainable energy sources place an increasing pressure on TGI's gas distribution business. The challenge for TGI is to educate its customers, and potential customers, about choosing the right energy at the right place and that natural gas is an efficient and best energy choice for direct end uses such as space heating, water heating and for fireplaces.

While the revenue stabilization mechanism of TGI provides some near term intra-year relief from declining use, it does not offset the fundamental competitive pressure that results from declining use in BC where non-market priced electricity is the primary alternative fuel.

Gas Supply Management Changes

The gas supply business has gone through tremendous change and increasingly volatile markets in recent years, particularly since the Enron bankruptcy. This has resulted in a reduced number of counterparties and reduced liquidity in the natural gas commodity trading market. There continues to be increasing concerns about lack of supply and infrastructure constraints to serve projected peak day regional demands. (Notwithstanding decontracting of firm capacity on the Westcoast Energy Inc. transmission system, the pipe is still being utilized on an interruptible basis.) Capacity expansions can take several forms, including storage deliverability enhancements and incremental pipeline capacity. The financial requirements of the industry and increasingly rigorous regulatory environments dictate that future expansions must continue to be backed by credit-worthy, long-term contracts. Access to such resources to serve growing demand in the region can be a challenging proposition. Therefore the approval processes required to authorize these incremental supplies and infrastructure requirements must be aligned with planning efforts and credit worthy counterparts who are nimble enough to accommodate changing market dynamics.

As a result, TGI has been compelled to take a very pro-active position in the regional market. The lack of credible and creditworthy counterparties makes portfolio development, planning, reporting and particularly credit management more challenging and complex. TGI continues to adapt to the changing market, taking advantage of opportunities that arise to minimize costs for TGI customers and those of its sister companies for whom it also arranges natural gas supply (TGVI and Terasen Gas Squamish). To mitigate risk it has had to develop strict controls on acceptable transactions and credit positions with external counterparties. The level of liability around physical and financial trading activities has increased, requiring much more intensive controls on credit and transaction accounting.

Year over year increases in natural gas prices has significantly increased TGI's risk of customer retention particularly as it relates to price competitiveness to alternative fuels (i.e. electricity). The competitive positioning objective now requires TGI to manage price risk over a longer term horizon. The requirement to hedge longer-term necessitates larger credit lines and can result in the incurrence of substantial mark-to-market losses on forward positions, thereby acting as a potential constraint on available credit. This can have both direct and indirect impacts on TGI's liquidity. For example, in order to support its current hedging activities and the potential credit exposures that could arise from those activities, TGI needs to have approved credit limits in place of more than $1.2 billion. TGI's counterparties need to have comparable credit limits in place to support their transactions with TGI.

In order to manage the effects of rising forward prices and increased commodity cost volatility, the Company has proposed to extend its hedging program from 24 months out to 36 months out. This puts additional pressure on the balance sheet from a mark to market exposure perspective as well as increasing counterparty credit limits.

TGI maintains a strong internal control environment regarding credit & price risk management processes. Its actively managed, conservative and well-defined credit policies ensure that TGI's overall credit exposure to any one counterparty is acceptable and within overall authorized limits.

In order to manage this credit exposure and prudently avoid potential non-recoveries, TGI has introduced and/or strengthened numerous policies, procedures and controls in recent years as part of its mitigation strategies. One such policy restricts financial transactions with counterparties who fail to maintain an A credit rating. In fact, the TGI policy would prohibit the company from transacting with a counterparty with TGI's split credit rating which underscores the importance of maintaining a strong and healthy balance sheet as further deterioration in TGI's ratings could further reduce the Company's ability to transact business. It is imperative that TGI maintain a healthy balance sheet underpinned by a solid capital structure.

Cost management pressures

Managing costs will continue to challenge the gas distribution utility sector in BC due to competition with low (non-market based) cost electricity in the province. Pressure on unit costs is increasing due to increased driving time and more complex urban work environments (greater population density, vertical subdivisions, multi-family installations, crowded building sites, etc.), as well as factors such as population encroachment on gas utility plant that increase infrastructure requirements to protect public safety. While these factors can be addressed by allocating additional resources to them, in the current rate compressed (gas to electric) competitive environment in British Columbia, the B.C. distribution utilities are limited in their abilities to pass such cost pressures on through rates without becoming non-competitive. It is important to maintain an operating cost benefit to gas users to overcome capital and installation cost challenges for new construction and conversions, especially at TGI where heating requirements drive a greater absolute expenditure for the average consumer.

Rate Regulated Accounting Changes

Over the past two years, the Canadian Institute of Chartered Accountants has undertaken a project to review and change how rate regulated enterprises recognize and measure regulated assets and liabilities. The results of this project could introduce significant volatility into the earnings of such businesses, which may include the elimination of regulatory deferral accounts. The project could also require rate regulated enterprises to include future income taxes payable on their balance sheets. There is very real risk that this could negatively affect debt covenant compliance and impact the ability of utilities to attract financing and equity capital. The industry has actively intervened in this process over the past two years, and an exposure draft on this matter is anticipated in the spring of 2006.

Declining Differentiation of Deferral Accounts

In the past, certain stakeholders have posited that TGI is shielded from some elements of business risk by deferral accounts. While this is true to a point, TGI is by no means unique when compared to other distribution companies. The Company believes that the suggestion that deferral accounts eliminate or substantially reduce the business risks of TGI, as compared to other regulated utilities, has resulted in TGI with its current capital structure being inappropriately designated as a “benchmark low risk utility”.

Energy cost deferral accounts are now employed in some form by virtually every major investor owned gas and electric distribution utility company in Canada and the majority of those in the US. While these accounts tend to smooth energy cost volatility for customers, they do not result in lower costs to customers over time, nor greater earnings for the utility, and TGI does not enjoy any special or unique position relative to other utilities it once had.

Weather normalization accounts and revenue stabilization accounts, while relatively rare when first adopted by TGI in 1994 have become more widespread in their application in North America. Such accounts do tend to provide greater predictability of reported earnings, but they do not result in immediate impacts on cash flow. In other words, a company with a revenue stabilization account that experiences warmer than normal weather and lower throughput will bill and collect the same amount of cash in the year whether or not it has a revenue stabilization deferral. Any under-recovery is subsequently built into the rates of future periods and over time is collected from or refunded to customers.

A company operating without a revenue stabilization account would experience, in the example above, lower reported earnings and have no change in future rates to recover the shortfall, however, over time the utility would also be expected to have colder than normal periods resulting in superior earnings and returns that will not have to be refunded. With accurate forecasting of normal weather over the long term, and setting aside the impacts of the timing of cash flows, any benefit that might be attributable to operating with revenue stabilization accounts is largely neutralized.

Moreover, utilities that do not have regulatory relief through revenue stabilization mechanisms can seek to mimic their effects through the use of weather hedges, thereby protecting those utilities from weather related revenue shortfalls. Derivative instruments such as these fail however to provide some of the benefits that revenue stabilization mechanisms provide to customers.

One such significant benefit of weather/revenue stabilization deferral mechanisms, that should not be overlooked, is that they tend to stream surpluses and shortfalls back to the customer classes that caused them through use variations. Throughput and revenue forecasting becomes a less contentious matter when setting rates.

From the perspective of potential returns on equity investments, analysts normalize earnings for their evaluations of company performance and the forecasts of future earnings that are used to set price targets for common stock of utilities and other companies. So while there is a higher predictability of reported earnings through the use of revenue stabilization accounts which is beneficial, there is no significant reduction in business risks facing utilities with such accounts. In fact, analysts regularly predict stock valuations based on normalized earnings and compare companies through the use of normalized price/earnings ratios.

Further, revenue stabilization accounts are unable to address fundamental business risks such as competitive challenges with alternative fuels. Equity and fixed income investors will consider the risk of a long-term impairment of earnings and cash flow arising from uncompetitive gas versus electric prices to be a much more significant business risk than short-term fluctuations in earnings and cash flow (both positive and negative) due to weather or commodity costs.

So while energy cost and revenue stabilization deferral accounts provide benefits to customers through reduction of volatility rates and streaming weather related and other customer use impacts back to the customer classes responsible for them, i.e. cost/causality, they can not appropriately be used as a differentiator in assessing business risk between utilities as they perhaps once were.

Summary

The level of business risk of the Terasen Gas Inc. has increased significantly since the Commission examined TGI in its public hearings of 1994 and 1999. Consequently, it is no longer appropriate to designate Terasen Gas Inc. the benchmark low risk utility unless it is allowed to increase the level of equity in its capital structure to strengthen its financial integrity.

Terasen Gas (Vancouver Island) is exposed to the business risks faced by TGI, and in addition has business risks unique to its circumstances.

A larger common equity component in the capital structure of each company, and an increased allowed return on equity, is required to provide the Companies and the investors in the Companies with an appropriate capital structure and fair and adequate returns.

TERASEN GAS INC.
and
TERASEN GAS (VANCOUVER ISLAND) INC.

Prepared Testimony

of

KATHLEEN C. McSHANE

FOSTER ASSOCIATES, INC.
Bethesda, MD. 20814
June 2005

TABLE OF CONTENTS

I. INTRODUCTION AND EXECUTIVE SUMMARY

A. INTRODUCTION

My name is Kathleen C. McShane and my business address is 4550 Montgomery Avenue, Suite 350N, Bethesda, Maryland 20814. I am a Senior Vice President of Foster Associates, Inc., an economic consulting firm. I hold a Masters in Business Administration with a concentration in Finance from the University of Florida (1980) and the Chartered Financial Analyst designation (1989).

I have testified on issues related to cost of capital and various ratemaking issues on behalf of local gas distribution utilities, pipelines, electric utilities and telephone companies, in more than 130 proceedings in Canada and the U.S. My professional experience is provided in Appendix E.

Terasen Gas Inc. (Terasen Gas) and Terasen Gas (Vancouver Island) Inc. (TGVI), are requesting that the British Columbia Utilities Commission (BCUC or Commission) undertake a review of the benchmark low risk utility return on equity (ROE), the capital structure that Terasen Gas requires to qualify as a low risk benchmark utility, a reasonable capital structure and equity risk premium for TGVI, and the automatic adjustment mechanism used to set the ROE. The purpose of my testimony is to:

1. Define a benchmark low risk utility and the corresponding benchmark utility return;

2. Compare Terasen Gas to the benchmark utility in light of its business risks and propose a capital structure that would equate Terasen Gas to the benchmark utility;

3. Recommend a benchmark utility return based on current and prospective capital market conditions that will meet the three standards of a fair return.

4. Assess the reasonableness of the proposed capital structure and equity risk premium (relative to the benchmark utility) for TGVI, and,

5. Recommend changes to the existing automatic adjustment mechanism.

B. EXECUTIVE SUMMARY

1. The key objective of this report is to develop and recommend a fair and reasonable return for a benchmark low risk utility under current economic and capital market conditions. The return on equity that results from the analysis applies to a utility whose total (combined business and financial) risks qualify it as low risk. Stated differently, the benchmark low risk utility return represents the return required at a particular level of total risk.

If a specific utility faces a higher level of total risk than the benchmark, whether because of its business risks, financial risks or both, the benchmark low risk return is not directly applicable. In that case, either an adjustment to the allowed capital structure is required, to lower the utility's financial risks, an adjustment to the benchmark return on equity is required, to provide compensation for the utility's higher combined business and financial risks, or alternatively, adjustments to both common equity ratios and allowed return on equity are required.

2. The Commission introduced the concept of the benchmark low risk utility in its first generic return on equity decision in 1994. Since that time Terasen Gas, at an allowed common equity ratio of 33%, has been equated to the benchmark low risk utility. Since the initial generic ROE decision in 1994, Terasen Gas' business risks have risen, in particular due to changes in its competitive environment. The

allowed capital structure has become weaker with the redemption of its preferred shares, which, in 1999, accounted for 9.4% of the regulated capital structure. Its allowed capital structure, in conjunction with the level of its recent allowed returns, do not provide the company sufficient financial flexibility. Its peers, with whom it competes for capital, are allowed stronger capital structures. Thus a stronger capital structure is warranted.

The allowed common equity ratios of other major gas distributors which are comparable in business risk to Terasen Gas are in the range of 35-38%. The capital structures all contain some preferred shares. Further, the regulated capital structures of Canadian utilities are generally perceived to be weak relative to their global peers. In my opinion, for Terasen Gas to qualify as a benchmark low risk utility, its allowed common equity ratio should be in a range of 35-40%.

3. The proposed common equity ratio and equity risk premium for TGVI relative to the low risk utility benchmark are 40% and 75 basis points respectively. TGVI faces considerably higher business risks than a benchmark utility. In my opinion, an equity ratio of no less than 45-50% is required to equate TGVI, to the benchmark utility. Thus, while TGVI's proposed 40% equity ratio is not unreasonable, it is not sufficient for TGVI to attract the benchmark utility return. At a 40% equity ratio, an incremental equity risk premium of approximately 90 basis points above that of the benchmark utility is required to provide full compensation for TGVI's risks. The proposed 75 basis point equity risk premium is, in my view, reasonable.

4. The typical allowed return on equity in Canada for utilities of similar risk to the low risk benchmark in 2005 was at the relatively low level of about 9.5%. By comparison, the allowed ROE for a benchmark low risk utility in British Columbia was only 9.03%.

The following demonstrates that the combined allowed return and common equity ratio for each of Terasen Gas, FortisBC and Pacific Northern Gas is lower than the average of its closest Canadian comparables.

Table 1

	Allowed Common Equity Ratio	**Allowed Return at Forecast 5.25% Long Canada**	**Weighted Equity Return Component**
	(1)	(2)	(Col 1 x Col 2)
Terasen Gas	33.0%	8.75%	2.89%
Comparables	36.5%	9.25%	3.38%
TGVI	35.0%	9.25%	3.24%
Comparables	43.2%	10.82%	4.74%
FortisBC	40.0%	9.15%	3.66%
Comparables	40.6%	9.27%	3.77%
Pacific Northern Gas	36.0%	9.40%	3.38%
Comparables	43.5%	9.34%	4.06%

5. Since the Commission first introduced the benchmark low risk utility return and the automatic adjustment mechanism for return on equity in 1994, the following conditions have changed, each of which points to the need for higher allowed returns for Canadian utilities generally, and for B.C. utilities specifically.

a. The equity market risk premium, that is, the difference between the expected return on the equity market composite and the expected return on long Canada bonds, is higher; long Canada yields have declined significantly since the mid-1990s, while the expected value of the equity

market return has not similarly declined. The resulting equity market risk premium is thus wider in today's low interest rate environment.

b. Globalization of capital markets means that Canadian utilities are competing for capital with alternative investments world-wide. Globalization of capital markets provides Canadian investors opportunities for higher returns at similar risk levels than available in the domestic market. The returns allowed for Canadian utilities need to recognize that Canadian investors' opportunities are not limited to domestic investments.

c. The spreads between utility and government of Canada bond yields are relatively high, despite robust debt markets. The high spreads – which are a function of utilities' combined business and financial risks – point to a perception of increased risk since the time the benchmark low risk utility return was initially set. The increased risk has not been reflected in the allowed returns.

d. A comparison between returns on equity for low risk industrial firms and allowed returns on book value for utilities reveals an increasing divergence. Low risk Canadian industrials are earning in the 13.0-13.5% range, while Canadian utilities are allowed to earn approximately 9.5%.

e. A comparison of the allowed returns for U.S. and Canadian utilities reveals a 100 basis point gap in favor of U.S. utilities, not explained by differences in risk or capital market conditions between the two countries. The higher allowed returns of U.S. utilities, in conjunction with materially thicker allowed common equity ratios, makes Canadian utilities relatively less attractive.

f. As long Canada bond yields have declined, capital market participants, particularly the Canadian debt rating agencies, have been singling out the

relatively low allowed returns on equity and common equity ratios in citing the challenges faced by Canadian utilities.

6. The benchmark low risk utility return should be reset at a level of 10.5% (based on a forecast long Canada bond yield of 5.25%). The 10.5% return on equity reflects the results of the three tests that have been traditionally used to estimate a fair return: equity risk premium (ERP), discounted cash flow (DCF) and comparable earnings.

In weighing the evidence, the Commission needs to explicitly consider the distinction between the premise of the equity risk premium and discounted cash flow tests on the one hand, and the comparable earnings test on the other. The ERP and DCF tests estimate the minimum return that will allow the utility to attract equity capital. The comparable earnings test measures return on book value – the basis upon which allowed returns are set and earnings generated. A fair and reasonable return recognizes both the utilities' need to attract capital **and** its entitlement to the opportunity to earn returns commensurate with those achievable by comparable risk firms.

7. My application of the equity risk premium test comprises three separate tests. The first, the risk-adjusted equity market risk premium test, estimates the benchmark utility return indirectly by first estimating the risk premium for the equity market as a whole, and then estimating by how much that premium needs to be adjusted for the relative risk of a particular company or portfolio of securities. My estimate of the equity market risk premium, which recognizes today's low level of interest rates, is 6.0-6.5%. The relative risk factor for a benchmark low risk utility is 0.65. This ERP test produces an estimated benchmark utility equity risk premium of 4.0% at a forecast long Canada yield of 5.25%.

The utility equity risk premium can also be estimated directly by looking only at utility data. Analysis of historic utility equity risk premiums indicates a utility risk premium of approximately 4.75%.

A second utility-specific risk premium test makes use of the discounted cash flow (DCF) model. The DCF model lends itself to making forward-looking estimates of the utility cost of capital at a point in time. The DCF cost of equity is equal to the current dividend yield (dividend/price) plus investors' expectations of the long-term growth in the stock. With a time series of consistently developed DCF estimates and the corresponding yields on long government bonds, the relationship between utility cost of equity and interest rates can be tested. The estimated relationship indicates an approximately 60 basis point increase/decrease in the utility cost of equity when long government bonds increase/decrease by 100 basis points. The test also demonstrates that there is a positive relationship between utility bond spreads (utility bond yields minus long Canada yields) and the utility equity risk premium. In other words, a higher utility bond spread equals a higher utility equity risk premium. The DCF-based equity risk premium test indicates a utility equity risk premium of 4.3-4.7% at a long Canada yield of 5.25%.

The combination of the three equity risk premium tests indicates a reasonable ERP for a benchmark low risk utility is 4.0-4.75% at the forecast risk-free rate of 5.25%. The resulting cost of equity is 9.25-10.0%

8. The ERP test is a market test that estimates the minimum cost of attracting equity capital. To provide some measure of financial flexibility, a financing flexibility allowance needs to be added to the ERP "bare-bones" cost. A financing flexibility allowance of no less than 50 basis points, which is equivalent to what the Commission has traditionally allowed, should be added to the ERP "bare-bones" result. The resulting return on book equity is 9.75-10.5%.

9. The DCF test, as applied to utilities, directly estimates their cost of equity. Conceptually, the test captures the totality of risks for which utilities' investors require compensation. As noted above, the discounted cash flow test estimates the expected return as the sum of the dividend yield plus investors' expectations of growth in the stock over the longer term.

I applied several DCF models to a sample of low risk utilities; the results of the various models indicate an expected equity return of 9.25%. Like the ERP test, the DCF test is a market-based test, which estimates a minimum cost of attracting capital. Thus, a financing flexibility allowance needs to be added to the DCF "bare-bones" cost. Adding a 50 basis point financing flexibility allowance, similar to that added to the ERP "bare-bones" cost, produces a return on book equity of 9.75%.

10. The comparable earnings test is the one test that measures returns in the same manner that the allowed utility return is set: on original cost book value. The comparable earnings test measures the rate of earnings of non-regulated (competitive) firms of similar risk to utilities. The comparable earnings test explicitly recognizes that Canadian utilities are not regulated on market value or current cost. They are allowed to earn returns on book value. Thus, a test that estimates returns measured on the same base as that to which the allowed return is applied is essential to the estimation of a fair return.

The comparable earnings test applied to a sample of low risk Canadian industrials indicates a fair return on book value for a benchmark low risk utility of no less than 13%.

11. The results of all three tests are summarized below:

	Fair Return On Equity
Equity Risk Premium Test	9.75-10.5%
Discounted Cash Flow Test	9.75%
Comparable Earnings Test	no less than 13.0%

In arriving at a recommended return on equity for a benchmark low risk utility, I gave primary weight to the cost of attracting capital tests. Significant weight should also be given to the comparable earnings test. Based on all three tests, a fair return for a benchmark utility is 10.5%.

12. In its 1999 decision, the Commission adopted an adjustment mechanism for ROE that increases the allowed ROE by 80% of the change in forecast long Canada yields when the long Canada yield is above 6.0%, but decreases it by 100% of the change when the yield is below 6.0%. The Commission stated that "failing to have a sliding scale within that range [above 6.0%] could produce inadequate returns for utilities and results in capital attraction difficulties."[1] Not only is there no empirical justification for the different scales above and below 6.0%, it is the reduction in allowed ROE by 100% of the reduction in long Canada yields below 6.0%, rather than the 80% sliding scale at higher (above 6.0%) levels of interest rates, that is more likely to result in inadequate returns and capital attraction difficulties.

[1] August 26, 1999 BCUC Decision, page 23.

I recommend that the Commission adopt a symmetric sliding scale mechanism that adjusts the allowed return by 75% of the change in forecast long Canada yields over the full range of interest rates to which the mechanism should apply (4% to 8%). A 75% sliding scale approximates the estimated relationship between the utility cost of equity and government bond yields. Moreover, it would place the British Columbia utilities on a more even playing field with their Canadian peers, many of which are subject to a 75% sliding scale formula.

II. DEFINITION OF A BENCHMARK UTILITY AND RETURN

A key objective of my testimony in this proceeding is to establish a benchmark return on equity. A benchmark return on equity is one that can be used as a point of departure (or "benchmark") for setting the allowed return on equity for each of the utilities that the Commission regulates. In its 1999 decision the Commission adopted the term "low-risk benchmark utility."

The benchmark return is derived from data for utilities across industries (electric, gas distribution and gas pipeline), as well as from data for non-utilities. It is based on no specific utility and hence reflects no specific business or financial risk characteristics. Thus, a "benchmark low risk utility" is a hypothetical construct. However, one objective measure of what constitutes a low risk utility would be its ability, on a stand-alone basis, to achieve debt ratings of A.

Designation of a debt rating as an indicator of relative risk recognizes that (1) debt ratings reflect both business and financial risk, and (2) the equity return requirement is a function of both business and financial risk. The determination of the applicability of a benchmark return to a particular utility needs to consider both business and financial risk. Stand-alone debt ratings of A are an indication that a utility, given its allowed capital structure, faces a similar level of total risk to the benchmark.

The applicability of the benchmark return on equity to a specific utility thus is dependent on the business risks and capital structure allowed for that utility. Since different utilities face different levels of business risk, utilities with lower (higher) business risk would generally be allowed lower (higher) common equity ratios. If the lower (higher) business risk of specific utilities is completely compensated for through a lower (higher) common equity ratio, their total (or investment) risk will be approximately the same. If the allowed common equity ratio is sufficient to result in a level of total risk equivalent to the benchmark, the

benchmark return on equity can be directly applied to that utility, with no adjustment to the level of the benchmark return. If, however, the subject utility, in conjunction with its allowed capital structure, faces a higher or lower level of total risk than the benchmark, an increment to, or reduction from, the benchmark return on equity will be required.

The return for a benchmark low risk utility as has been set by the BCUC since 1994 is conceptually the same return as was adopted in 2004 by the Alberta Energy and Utilities Board (AEUB) and in 1995 by the National Energy Board (NEB) in their generic and multi-pipeline cost of capital decisions. In all three cases, the regulator, in effect, set the allowed return for a benchmark utility. While each of the three regulators came to somewhat different conclusions regarding the approach to setting the return, the values of the various inputs to establishing the return, and the appropriate level of the return, conceptually, they were all setting a "benchmark" return. The only difference was how the "benchmark" return was applied to each of the utilities in the three jurisdictions.

The NEB adopted a single allowed ROE when it established its automatic adjustment mechanism for a number of oil and gas pipelines in its 1995 Multi-Pipeline Cost of Capital Decision. Each individual pipeline was deemed a common equity ratio that was intended to compensate for its business risk relative to the other pipelines, so that the single "benchmark" return on equity could be applied across all of the pipelines. In the years since the multi-pipeline return on equity was adopted, the NEB has changed the allowed capital structure, rather than the allowed return, to recognize changes in business risk. Thus, TransCanada PipeLine's allowed common equity ratio has risen from 30% in 1995 to 33% in 2002 and 36% in 2005.

The same approach was recently adopted by the AEUB in Decision 2004-052 (July 2, 2004). In that decision, the AEUB set different capital structures for eleven electric and gas distribution and transmission entities, based on their

different business risk profiles, and then established a common "benchmark" return on equity to be applied to each of the utilities under its jurisdiction. The AEUB's decision established allowed common equity ratios ranging from 33% for electric transmission to 43% for a relatively risky gas pipeline. In the middle of the business risk range were the major electricity and gas distributors with allowed common equity ratios of 37% and 38%, respectively.

In contrast to the NEB and AEUB approach, this Commission has allowed for both different capital structures and different equity risk premiums among the various utilities it regulates. The combination of capital structures and equity risk premiums is also the approach that has been taken in Ontario and Québec.

This second approach, that is varying both capital structures and risk premiums, is equally as valid as the NEB/AEUB approach as long as the combination of allowed capital structure and equity risk premium for a particular utility reasonably compensates for its business risk relative to that of its peers. Moreover, in light of the small size of several of the utilities regulated by the BCUC (who could not, no matter how high the allowed equity ratio, attain a debt rating of A on their debt), the combination of different capital structures and equity risk premiums is a reasonable approach.

III. TERASEN GAS AND TGVI vs. THE BENCHMARK UTILITY

As noted in Section II, the applicability of the benchmark low risk utility return to a particular utility is dependent on that utility's total risk relative to the benchmark. The total risk reflects both the utility's business risks (short- and long-term) and its financial risks, where the financial risks are a function of the allowed capital structure.

The allowed return on equity and allowed capital structure are interdependent. The benchmark low risk utility return cannot be applied to a specific utility unless the capital structure allowed by the regulator will equate the utility's total risk level to that of the benchmark.

TERASEN GAS

Since the Commission first introduced the concept of a benchmark utility in its June 1994 Return on Common Equity Decision, Terasen Gas, with an allowed common equity ratio of 33%, has been equated to the benchmark low risk utility. In my opinion, a 33% common equity ratio is too low for Terasen Gas to be considered to be equivalent in risk to the low risk benchmark utility.

In arriving at that conclusion, I considered a number of factors:

1. The business risk environment in which Terasen Gas operates has changed materially since the 33% equity ratio was adopted. The most significant change is the increasingly competitive environment in which Terasen Gas operates. In recent years, however, as the gap between the delivered costs of natural gas and electricity has narrowed, Terasen Gas increasingly finds itself competing for load in the residential and commercial markets.

2. A comparison of the inherent market demand/competitive risks of Terasen to other major gas distributors indicates that Terasen Gas' customer base is more concentrated in the industrial sector (50% of load) than ATCO Gas (which is largely residential and commercial), Enbridge Gas and Union Gas. The industrial base of Terasen Gas is also more concentrated than either Enbridge's or Union's; over 45% of Terasen's industrial load is attributable to a single industry, the pulp and paper industry.[2] Given the nature and size of its industrial base, Terasen Gas is inherently riskier than utilities with a more economically diverse and/or a less industrial-based customer profile. In addition, none of those three LDCs face major competitive threats from alternative energy sources in the residential and commercial sectors. Of all the major gas distributors in Canada, only Gaz Metro faces higher demand/competitive risks than Terasen Gas.

3. All of the major gas distributors, including Terasen Gas, have deferral accounts for the commodity cost of gas. Terasen Gas also has a rate stabilization account that mitigates earnings volatility arising from weather and customer usage in the short-term; that mechanism does not change the utility's longer-term business risk profile. Weather protection has become a relatively common feature of North American LDCs since Terasen Gas's 33.0% allowed equity ratio was set in 1994. To illustrate, in Section IV.C.4.b, I conducted an equity risk premium test using a sample of U.S. gas distribution utilities. All of the companies in the sample either has a weather-normalization account or has some form of weather protection. In Canada, both Gaz Metro and Newfoundland Power have weather-normalization accounts.

4. In my view, Terasen Gas' business risks are comparable to those of the major Alberta and Ontario gas distributors. The allowed common equity

[2] The load percentages are simply to provide a perspective on the comparative demand/competitive risks among the utilities. The percentage of the total gross margin from industrial load is generally materially lower than the proportion of the load itself due to the rate structure.

ratios for the other major gas distributors are in the range of 35% (Enbridge and Union) to 38.0-38.5% (ATCO Gas and Gaz Metro, respectively). Each of the four also has an allowed preferred share component, ranging from 3.1% (Enbridge) to 7.5% (Gaz Metro).

5. Reviewing the universe of Canadian utilities, other than a number of the NEB-regulated pipelines who still have allowed common equity ratios of 30-31%, the next lowest allowed common equity ratio is the 33% allowed for electric transmission utilities in Alberta. In my opinion, the business risks of Terasen Gas exceed those of electric transmission by a considerable margin. The allowed common equity ratio of TransCanada PipeLines and Nova Gas Transmission are 36% and 35%, respectively. I would judge that these two pipelines face no higher business risk than Terasen.

6. Terasen Gas' low common equity ratio, in conjunction with the low level of allowed returns at current interest rates, contributes to a relatively low level of financing flexibility. The low level of financing flexibility, as reflected in relatively low coverage ratios, also, to some extent, reflects the lack of other securities in the capital structure that would provide some equity support to the senior debt. In 1999, Terasen Gas' regulated capital structure contained 9.4% preferred shares, all of which have been redeemed. All of the other major gas distribution utilities have some preferred shares or preferred securities in their allowed or actual capital structures.

The need for a utility to be able to access capital markets under most circumstances at reasonable rates provides a further rationale for strengthening the capital structure. I note, in that context, that in the recent National Energy Board decision (RH-2-2004, April 2005), raising TransCanada PipeLines' allowed common equity ratio from 33% to 36%,

the NEB suggested, in effect, that the increase in the allowed common equity ratio was a pro-active means of preventing the deterioration in the pipeline's debt ratings.[3]

7. Both Moody's and Standard & Poor's have pointed to Terasen Gas' low common equity ratios. Moody's (July 2004) called the relatively high leverage a "credit challenge". Standard & Poor's (December 2004) has referred to the "thin deemed equity layers" of Terasen Gas and Terasen Gas (Vancouver Island), stating that the "combination of low profitability and high leverage results in an overall financial profile that is weak."

8. Although ATCO Gas' 38% allowed common equity ratio is toward the upper end of the range of common equity ratios currently allowed for the major Canadian gas distribution utilities, DBRS considers the deemed ratios for the ATCO Utilities[4] to be relatively low.

9. S&P's debt ratio guidelines for a utility with a "3" business profile score and ratings of A and BBB are as follows:

Rating	Debt Ratio Guideline
A	50-55%
BBB	55-65%

The guidelines ranges suggest that a debt ratio of no higher than 55% is warranted for a debt rating in the A category. A 60% debt ratio places Terasen Gas in the middle of the range for a BBB debt rating.

10. In summary, a 35-40% common equity ratio would place Terasen Gas on an equal footing with its peers that face similar business risk. At an

[3] The NEB recognized that a deterioration of the pipeline's debt ratings into the BBB category could limit the number of investors willing to hold TCPL debt securities.
[4] The ATCO Utilities include ATCO Gas, ATCO Pipelines and ATCO Electric.

allowed common equity ratio in the range of 35-40%, the benchmark low risk return on equity would be applicable to Terasen Gas.

If, however, the allowed common equity ratio were to remain at 33%, an incremental equity risk premium would be required to account for the low common equity ratio (high financial risk). The difference between a 33% and 37.5% common equity ratio (mid-point of the 35-40% range) equates to an incremental equity risk premium of approximately 70 basis points. At a 33% allowed common equity ratio, Terasen Gas should be allowed an equity risk premium of 70 basis points above my recommended benchmark low risk utility return (See Schedule 29).

TGVI

TGVI is requesting that the Commission approve a 40% common equity ratio and a 75 basis point incremental equity risk premium relative to the benchmark low risk utility. In my opinion, this proposal reasonably compensates for TGVI's level of business risk.

1. TGVI is a relatively small greenfield utility (assets of approximately $550 million including the Revenue Deficiency Deferral Account (RDDA)), which has been operating for slightly less than 15 years. As a greenfield utility, its market is being built from the ground up. TGVI's rates have been structured to compete with alternative energy sources, and to induce potential customers to convert to natural gas. Until 2003, rates were set at a discount to competing fuels and were too low to recover TGVI's cost of service. As a result, TGVI had built up an accumulated revenue deficiency (RDDA) which peaked at approximately $88 million.

2. Since 2003 TGVI's rates have been based on a cost of service model, incorporating "soft caps" in the residential and commercial sectors,

designed to maintain the utility's competitiveness versus electricity or oil as appropriate to the rate class. Nevertheless, TGVI's residential and small commercial rates are higher (on an efficiency-adjusted basis) than electricity rates.

3. TGVI's ability to build its residential and small commercial market has been hampered by relatively high natural gas prices, low population density in its service area (which translates into relatively high unit costs) and very competitive electricity rates.

4. TGVI's load remains largely industrial (close to 70%), attributable to seven pulp and paper mills (the Joint Venture) and a cogeneration plant. The contract with the Joint Venture was amended, and extended into the fall of 2004 for an additional two years past the original renewal period to 2012. However, under the amended contract the firm demand was reduced by approximately 67% compared to the prior agreement. The contract with BC Hydro, which relates to the cogeneration facility, is currently on a year-to-year basis and expires October 31, 2005. A second planned gas fired generation facility at Duke Point on Vancouver Island, which was expected to have contributed significant additional revenues to TGVI's operation, was recently cancelled by BC Hydro.

5. TGVI faces greater supply risks than the typical LDC, due to its dependence on a single pipeline system that traverses rugged terrain, and comprises both underwater and marine crossings.

6. Revenues from BC Hydro, in conjunction with royalty payments pursuant to the Vancouver Island Natural Gas Pipeline Agreement (VINGPA), have allowed TGVI to reduce the RDDA to approximately $60 million at December 2004. Under VINGPA, TGVI receives royalty payments from

the Provincial Government that reduce the cost of the gas commodity, which, in turn, improves the margin available to recover delivery costs.

7. While TGVI has an opportunity to recover the remainder of the RDDA (at $60 million, about 10% of total assts), it has no assurance that it will be able to do so. While, at present, TGVI is being assisted by the VINGPA royalty payments, those payments will terminate at the end of 2011. After 2011, TGVI's customers will be required to absorb the full commodity cost of gas. Further, TGVI has $75 million in interest free senior government loans outstanding that currently are a credit to rate base; as they are repaid, the rate base will rise, creating higher capital costs. The ability of TGVI to mitigate the impact of rising costs on customer rates will partly depend on its ability to add new customers and thus reduce its unit delivery costs. However, the ability to add new customers (both through conversion and new construction) hinges in large part on the competitiveness of TGVI's rates versus electricity rates. Given the intensely competitive market in which TGVI operates, there is a material risk that it will be unable to fully recover its full investment in utility assets.

8. As a greenfield utility in a very price-competitive service area, TGVI faces higher business risks than any of the major mature gas distribution utilities (i.e., ATCO Gas, Enbridge Gas, Gaz Metro, Terasen Gas and Union Gas). TGVI is more comparable to the smaller mature LDCs (AltaGas Utilities, Gazifère Inc., and Natural Resource Gas) and the two greenfield LDCs in the Maritime Provinces (Enbridge Gas New Brunswick and Heritage Gas).

9. The allowed common equity ratios and incremental equity risk premiums for the small mature and greenfield LDCs are as follows:[5]

[5] Excludes Pacific Northern Gas due to open request related to capital structure and ROE.

Table 2

LDC	Allowed Common Equity Ratio	Incremental Risk Premium (basis points)
AltaGas Utilities	41%	0
Enbridge Gas New Brunswick	50%	320 [a/]
Gazifère Inc.	40%	40 [b/]
Heritage Gas	45%	330 [c/]
Natural Resource Gas	50%	0

[a/] Allowed ROE of 13% set in June 2000 when the average allowed ROE for major Canadian utilities was approximately 9.8%.

[b/] Relative to Gaz Metro.

[c/] Allowed ROE of 13% set in February 2003 when the average allowed ROE for major Canadian utilities was approximately 9.7%.

10. I judge TGVI to face higher business risks than AltaGas Utilities and to be in the same business risk class as Gazifère Inc. and Natural Resource Gas. I view TGVI to be somewhat less risky than either of EGNB or Heritage Gas, due primarily to TGVI's larger customer base and the level of government support that it has received. However, all three are facing difficulties in building a market from the ground up. I also judge TGVI to face higher business risks than FortisBC, for which the BCUC recently allowed a 40% common equity ratio and a 40 basis point equity risk premium relative to the benchmark low risk utility.

11. In my opinion, to equate TGVI to the benchmark low risk utility, an allowed common equity ratio of no less than 45-50% would be required (compared to the range of 35-40% for Terasen Gas). Terasen Gas is proposing a 40% common equity ratio for TGVI. I view the proposal as reasonable; however, the difference between the proposed 40% and the indicated range of 45-50% (mid-point of 47.5%) requires an incremental equity risk premium relative to the benchmark low risk utility return.

Applying the same approach as detailed in Schedule 29 for Terasen Gas, the difference between the proposed 40% common equity ratio and a 47.5% common equity ratio warrants an incremental equity risk premium for TGVI relative to the benchmark low risk utility of 60-120 basis points (mid-point of 90 basis points). Thus, the 75 basis point incremental equity risk premium proposed for TGVI is reasonable.

IV. FAIR RETURN ON EQUITY FOR A BENCHMARK UTILITY

A. OVERVIEW OF APPROACH TO ESTIMATING THE BENCHMARK RETURN

To ensure that the allowed benchmark return considers all of the relevant factors that bear on a fair return, I recommend application of the three tests that have traditionally been used to set a fair return for regulated companies: the equity risk premium test, the discounted cash flow test and the comparable earnings test. Reliance on multiple tests recognizes that no one test produces a definitive estimate of the fair return.[6] Each test is a forward-looking estimate of investors' equity return requirements. However, the premises of each of the three tests differ; each test has its own strengths and weaknesses. In principle, the concept of a fair and reasonable return does not reduce to a simple mathematical construct. It would be unreasonable to view it as such.

A fair return is one that provides a utility with the opportunity to:

1. earn a return on investment commensurate with that of comparable risk enterprises;
2. maintain its financial integrity; and,
3. attract capital on reasonable terms.

These criteria give rise to two separate standards, the capital attraction standard and the comparable returns, or comparable earnings, standard. The two standards are applied using different tests. The equity risk premium and discounted cash flow tests establish the cost of attracting capital. The comparable earnings test is a measure of the comparable return, or comparable earnings, standard. A fair and

[6] As stated in Bonbright, "No single or group test or technique is conclusive." (James C. Bonbright, Albert L. Danielsen, David R. Kamerschen, *Principles of Public Utility Rates*, 2nd Ed., Arlington, Va.: Public Utilities Reports, Inc., March 1988).

reasonable return gives weight to both the cost of attracting capital standard and comparable earnings standard.

In its 1999 decision, the Commission concluded that the distinction drawn between the capital attraction standard and the comparable earnings standard was artificial, that is, if a utility could attract capital, by definition, the comparable earnings standard was met. I disagree with this conclusion. Virtually any company can attract capital, at a cost. The ability to attract capital is not synonymous with being allowed a return comparable with those of similar risk entities. A return that simply allows a utility to attract capital, irrespective of the cost, does not lead to the conclusion that it is compatible with the comparable returns standard.

The fact that the allowed return is applied to an original cost rate base is key to distinguishing between the capital attraction and comparable earnings standards. The base to which the return is applied determines the dollar earnings stream to the utility, which, in turn, generates the return to the shareholder (dividends plus capital appreciation). In the early years of rate of return regulation in North America, there was considerable debate over how to measure the investment base. The controversy arose from the objective that the price for a public utility service should allow a fair return on the fair value of the capital invested in the business. The debate focused on what constituted fair value: Was it historic cost, reproduction cost, or market value? Ultimately, the courts opted for the "reasonableness of the end result" rather than the specification of a particular method of rate base determination.[7] The use of a historic cost rate base became the norm because it provided an objective, measurable point of departure to which the return would be applied. There is no prescription, however, that the historic cost rate base itself constitutes the "fair value" of the investment.

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

Nevertheless, regulators' application of a capital market-derived "cost of attracting capital" to a historic rate base in principle will result in the market value of the investment trending toward the historic cost based on the erroneous assumption that this equates to "fair value". The "fair value equals original cost" result arises from the way "cost" has typically been interpreted and applied in determining other cost elements in the regulation of North American utilities. For most utilities, rates are set on the basis of book costs; that concept has been applied to the cost of debt and depreciation expense, as well as to all operating and maintenance expenses.

For economists, the theoretically appropriate definition of cost is marginal or incremental cost. Historic costs have been substituted for marginal or incremental costs for two reasons: first, as a practical matter, long-run incremental costs are difficult to measure; second, for the capital intensive utility industries, pricing on the basis of short-run marginal costs would not cover total costs incurred.

The determination of the return on common equity for regulated companies has traditionally been a "hybrid" concept. The cost of equity is a forward-looking measure of the equity investors' required return. It is, therefore, an incremental cost concept. The required equity return is not, however, applied to a similarly determined rate base (that is, current cost). It is applied to an original cost rate base. When there is a significant difference between the historic original cost rate base and the corresponding current cost of the investment, application of a current cost of attracting capital to an original cost rate base produces an earnings stream that is significantly lower than that which is implied by the application of that same cost rate to market value. The divergence between the earnings stream implied by the application of the return to book value rather than market value is magnified as a result of the long lives of utility assets.

The current cost of attracting capital is measured by reference to market values. The discounted cash flow test, for example, measures the return that investors

require on the market value of the equity. For a utility regulated on the basis of original cost book value, the current cost of attracting equity capital is only equivalent to the return investors require on book value when the market value of the common stock is equal to its book value. As the market value of the equity of regulated utilities increases above its book value, the application of a market-value derived cost of equity to the book value of that equity increasingly understates investors' return requirements (in dollar terms).

Some would argue that the market value of utility shares should be equal to book value. However, economic principles do not support that conclusion. A basic economic principle establishes the expected relationship between market value and replacement cost which provides support for market prices in excess of original cost book value. That economic principle holds that, in the longer-run, in the aggregate for an industry, market value should equal replacement cost of the assets. The principle is based on the notion that, if the market value of firms exceeds the replacement cost of the productive capacity, there is an incentive to establish new firms. The existence of additional firms would lower prices of goods and services, lower profits and thus reduce market values of all the firms in the industry. In the opposite circumstance, there is an incentive to disinvest, i.e., to not replace depreciated assets. The disappearance of firms would push up prices of goods and services; raise the profits of the remaining firms, thereby raising the market values of the remaining firms. In equilibrium, market value should equal replacement cost. In the presence of inflation, even at moderate levels, absent significant technological advances, replacement cost should exceed the original cost book value of assets. Consequently, the market value of utility shares should be expected to exceed their book value.

Therefore, when the allowed return on original cost book value is set, a market-derived cost of attracting capital must be converted to a fair and reasonable return on book equity. The conversion of a market-derived cost of capital to a fair return

on book value ensures that the stream of dollar earnings on book value equates to the investors' dollar return requirements on market value.

B. PERSPECTIVE ON CURRENT APPROACH TO SETTING ALLOWED RETURN ON EQUITY

1. The Allowed Return on Equity before Automatic Adjustment Mechanisms

A review of the history of the approach to setting the allowed return in Canada reveals that, prior to the widespread adoption of automatic adjustment mechanisms, regulators routinely gave weight to the results of various tests. The three tests, as previously indicated, are the equity risk premium, discounted cash flow and comparable earnings tests. A brief description of each test follows.[8]

The equity risk premium test is a generic term for a methodology that estimates the cost of equity as the sum of a directly observable yield on a security such as a government or corporate bond and a premium to compensate for the additional equity risk assumed by the investor. Canadian regulators have typically applied the equity risk premium test using a long-term Government of Canada bond yield as the point of departure. To that yield is added an equity risk premium reflecting compensation for the additional risk of investing in a regulated utility.

The discounted cash flow test measures the equity investors' expected return as the dividend yield on a stock or group of stocks plus the expected growth in dividends in the long-term.

The comparable earnings test measures the expected returns on book equity of firms that are of similar risk to the utility for which the regulator is setting the fair return.

[8] A more detailed description is provided with the application of each test.

In giving weight to multiple tests, some regulators explicitly recognized the distinction between the capital attraction standard and the comparable earnings standard. To illustrate, the Public Utilities Board of Alberta, in Decision E91093 (December 1991), recognized the difference between original cost and market value, and the resulting relevance of comparable earnings:

> "The Board recognizes that, in the competitive world, pricing and investment decisions are based on the current market values of assets and the current cost of new capital. However, because the investment base for regulatory purposes is stated on original cost book values, a rate of return such as that determined under the comparable earnings test becomes meaningful." (p. 195).

Other Canadian regulators either explicitly or implicitly gave weight to all three tests in setting the allowed return. Some examples include:

In its August 1992 *Reasons for Decision* for Westcoast Energy, the National Energy Board stated that it relied on all three methods used for assessing a fair and reasonable return.

In EBRO 485 (December 1993) for Consumers Gas, the Ontario Energy Board stated that it had taken account of the different results of all the tests.

In the mid-1990s, however, Canadian regulators began to shift from giving weight to multiple tests to virtual sole reliance on a single test, namely the equity risk premium test. In 1994-1995, the BCUC and the NEB began seeking to streamline the process of setting allowed returns, given the time (and cost) required to revisit the fair return issue on an annual basis. The BCUC initially adopted its automatic adjustment mechanism based on the equity risk premium test in April 1994; the NEB adopted a similar approach in early 1995. Their choice of the equity risk premium test reflects in part the fact that its point of departure – the 30-year Canada yield – is observable and objective. Their focus on the equity risk

premium test, to the exclusion of other tests, appears to be largely a function of the economic and capital market conditions prevailing at the time.

2. Economic and Capital Markets in 1994-1995

In 1994-1995, the Canadian economy and capital markets were in the relatively early stages of significant structural changes. These changes had their genesis earlier in the decade with the Federal Government's commitment to low inflation and fiscal restraint. However, the Federal Government had yet to make significant headway in debt reduction; Canada's net debt/GDP ratio reached its peak (over 68%) in 1996. "Nominal" (or alternatively, conventional)[9] long-term Canada bond yields, which averaged approximately 8.6% during 1994-1995, reflected a high real cost of capital due to both concerns with Canada's fiscal condition and a strained relationship with Québec.

a. Inflation Fears and Bond Yields

While inflation had declined dramatically, from an average of 4.7% in 1983-1991 to 1.2% during 1992-1994 (Schedule 7), there remained substantial concern that it would reignite. During 1994-1995 long-term inflation-indexed Government of Canada bonds yielded 4.6% on average, compared to the 8.6% yield on the "nominal" 30-year Canada bonds, a differential of 4.0 percentage points (or 400 basis points) (Schedule 7).

The differential between nominally denominated bonds and inflation-indexed bonds represents the compensation investors in the former require for inflation protection. In 1994-1995, economists were forecasting long-term inflation of only 2.2%[10] well below the 4.0 percentage point average difference between "nominal" and inflation-indexed bonds. The difference of 1.8% (4.0% - 2.2%) is

[9] As contrasted with real return, or inflation-indexed, bonds.
[10] Consensus Economics, *Consensus Forecasts*, April and October of 1994 and 1995.

an estimate of the additional premium required at the time by holders of the conventional bonds to assume the risk that actual inflation would exceed the forecast level. The material difference observed indicates that bond investors perceived conventional bonds to comprise a relatively high level of risk.

b. Equity Markets

In the equity markets, the TSE 300 had just completed five years of mediocre performance (5.6% and 4.5% annual arithmetic and geometric returns respectively for 1990-1994, compared to 9.3% and 9.0% for the S&P 500). Over the same period, returns on conventional long-term Government of Canada bonds outpaced the equity market returns by a significant margin. The average bond returns during 1990-1994 were 10.7% and 9.9% on an arithmetic and geometric basis respectively. The experience of 1990-1994 alone had squeezed the post-World War II achieved Canadian equity risk premiums by 1.3 percentage points; the historic equity risk premium declined from a 1947-1989 arithmetic average of 7.6% to a 1947-1994 average of 6.3%.[11]

c. Early Stages of Market Globalization

In the mid-1990s, Canadian regulators determined the equity market risk premium primarily on the basis of historic Canadian data. The trend toward globalization of capital markets had been raised as an issue, but the shift from largely domestic investments to a mix of domestic/foreign investments was evolutionary, and largely overlooked in cost of capital determinations. Despite the increasing exposure of Canadian investors to foreign equity markets,[12] the returns available

[11] The corresponding reduction in the achieved market risk premium on a geometric average basis was from 6.3% to 5.5%.

[12] The Investment Funds Institute of Canada (IFIC) reported in its "Year 2000 in Review" report of mutual fund industry statistics that the proportion of all Canadian mutual fund assets including money market assets, but excluding the foreign portion of balanced funds, invested in foreign securities was approximately 17% in 1990; in late 1994 that proportion had increased to 29%.

from those markets – particularly from the broader U.S. market – were given little or no weight in the assessment of the equity market risk premium.

d. Corporate Profitability

The outlook for Canadian industrial returns was uncertain. The country had endured a protracted period of recession and restructuring (1990-1994);[13] resulting largely from the combined efforts of the Government to stem inflation and of industry to respond to the prospects of free trade. With the dramatic break in inflation, and the impact of recession and restructuring, the earned returns of Canadian industrials had fallen well below levels experienced during the 1980s.

3. Impact of Market Conditions on Determination of the Allowed Return

The evolving economic/capital market climate raised concerns regarding the reliability of the data underpinning various cost of equity tests. The application of the comparable earnings test had become problematic. Two factors were key to the reliability of the comparable earnings test in the mid-1990s:

1. The sharp decline in inflation in 1992 cast considerable doubt on the relevance of pre-1991 returns on equity – earned during an environment of significantly higher inflation – to a future business cycle.

2. The returns achieved during 1990-1994 reflected the impact of a prolonged recession and restructuring period; the ability of Canadian industry to restructure successfully was not assured.

Related factors reduced the reliability of the discounted cash flow test, which had typically been applied to low risk industrial firms. The discounted cash flow

[13] Average GDP growth from 1990-1994 was only 1.2%; see Schedule 6.

853 model requires estimates of investor expectations of future growth in conjunction
854 with prevailing dividend yields. With the protracted decline in earnings, and
855 concurrent lack of growth (or, in some cases, reductions) in dividends, historic
856 growth rates for industrial firms provided no insight into investor expectations for
857 future growth rates. Further, direct measures of investor growth expectations for
858 publicly-traded Canadian firms (e.g., consensus forecasts of long-term growth
859 rates), were not widely available. Thus, the DCF model could not be reliably
860 applied.
861
862 The equity risk premium test was effectively the only remaining choice, despite
863 its own shortcomings, e.g., the unreliability of beta as a measure of relative risk
864 (as recognized by the BCUC in the 1999 decision). As a result, its initial adoption
865 by Canadian regulators as virtually the sole basis for setting a benchmark return
866 and for designing an automatic adjustment mechanism was not unreasonable. The
867 equity risk premium test provided an objective (observable) means of not only
868 establishing a point of departure, i.e., the long Canada yield, but also for
869 estimating subsequent changes in the equity return requirement.
870
871 The adoption of the equity risk premium test by the BCUC and the NEB was
872 relatively quickly followed by the Ontario Energy Board (1997), the Régie de Gaz
873 (1998), the Public Utilities Board of Newfoundland and Labrador (1998) and the
874 Alberta Energy and Utilities Board (1997).[14] As more regulatory boards adopted
875 a similar approach, each regulator could be relatively confident that the returns of
876 utilities under its jurisdiction would not deviate significantly from those adopted
877 elsewhere in the country.

[14] Although the AEUB did not adopt an automatic adjustment mechanism based on the risk premium test until 2004, it has been using the equity risk premium test virtually exclusively since 1997 (U97065).

4. Key Factors Determining the Level of Allowed Risk Premiums in the Mid-1990s

Since many Canadian utilities are subject to automatic adjustment formulas that have their genesis, explicitly or implicitly, in the mid-1990s, it is worth summarizing the key factors that may explain the level of equity risk premiums that underlie the initial returns allowed by Canadian regulators in establishing automatic adjustment mechanisms in the 1990s.

1. The additional premium in nominal Government of Canada bonds, reflecting the fear that actions of the Federal Government would reignite inflation (often referred to as the "lock-in premium"). The additional premium required by holders of conventional long-term government bonds exceeded that required by equity holders. This is because equities are viewed by investors as a superior hedge against inflation. Thus, the higher "lock-in" premium in government bonds resulted in a contraction in the required equity market risk premium.

2. The mediocre performance of the TSE 300 in the early years of the 1990s helped squeeze the achieved Canadian equity risk premiums; the decline in the achieved equity market returns may have been interpreted as a reduction in the required (forward looking) equity market risk premium.

3. As the transition to a global capital market had yet to be fully appreciated, the determination of the benchmark returns gave little recognition to the alternative investment opportunities outside the Canadian market. Giving weight to the U.S. equity risk premium would have led to higher allowed utility equity risk premiums.

4. The mediocre performance of the overall Canadian equity market relative to that of utilities may have been perceived as an indication that utility investors were being overcompensated.

5. Changes in Economic and Capital Markets Since the Mid-1990s

a. Government Bond Market

Subsequent to the initial adoption of automatic adjustment formulas by the BCUC and the NEB, long Canada bond market conditions began to change dramatically. By 1997, the Federal Government's commitment to containing inflation, by reducing budget deficits and debt levels, began to bear fruit. Interest rates began to decline rapidly in Canada. At the end of 1996, the spread between 30-year Canadas and 30-year U.S. Treasuries – which had been 200 basis points at the beginning of the decade – was only 40 basis points. By mid-1998, the real yields on "nominal" long Canada bonds had declined significantly, as bond investors' fear of inflation abated, to the point where they no longer comprised a "lock-in premium" for unanticipated inflation.[15] The disappearance of the "lock-in premium" was an indication that the perceived riskiness of long Canada bonds had declined. The disappearance of the "lock-in premium" in bond yields unmatched by a change in the perceived riskiness of the equity market translated into a higher equity market risk premium.

In August 1998, the global market crisis that had begun in 1997 came to a head.[16] The crisis sent investors scurrying into safer government securities, precipitating an upward shift in the spreads between utility and government bond yields.

[15] With nominal 30-year Canadas yielding 5.6% in July 1998 and inflation-indexed bonds yielding 3.87%, the differential of 1.7% was slightly less than the consensus forecast of long-term inflation of 1.9% (Consensus Economics, *Consensus Forecasts*, April 1998).

[16] The crisis had been triggered by a recession in Southeast Asia and a fall in commodity prices worldwide. This, in turn, precipitated a collapse in the Russian economy. The crisis then spread to Latin America as investors began liquidating riskier securities and scrambling into safe havens, primarily U.S. Treasury bonds.

The upward shift in utility/government bond spreads can also be traced in part to the improving finances of the Canadian government. In fiscal year 1997-1998, the Federal Government achieved its first budget surplus since 1973.[17] With the budget deficit eliminated, the market anticipated a reduction in long-term government financing. The expectation of a reduced supply of long-term bonds put downward pressure on long-term government bonds yields. The result was a scarcity premium, which was clearly observable from early 2000 through early 2002.[18] When long Canada bond yields reflect a scarcity premium (bond prices are artificially high and yields artificially low), their use in the equity risk premium test, without proper adjustment, will understate the cost of equity.

The Federal Government recognizes the importance of long-term government bonds to investors, particularly institutions such as insurance companies that attempt to match the duration of their assets and liabilities. Consequently, the government has undertaken to maintain a liquid market for 30-year Canadas. Since 2002, the presence of a scarcity premium has not been detectible, as evidenced by a historically normal spread between 10- and 30-year Canadas. Nevertheless, as the Federal Government has continued to post budget surpluses, its external financing requirements have continued to decline. A declining stock of outstanding long-term government bonds makes it more difficult to maintain a liquid market for those bonds, and puts downward pressure on long Canada bond yields.

b. Utility Bond Market

In the utility bond market, the higher spreads that emerged with the global market crisis and the flight to quality persisted even after the 1998 crisis passed. Multiple factors acted to keep spreads high, including the scarcity premium in government

[17] The first surplus has since been followed up with six consecutive surpluses.
[18] The scarcity premium was evidenced by minimal to negative spreads at the long end of the yield curve (10- and 30-year), when the rest of the yield curve was generally upward sloping.

bond yields discussed above and, later, a crisis of confidence in corporate America, as well as a soft global economy.

To put the change in spreads in perspective, the spread between long-term Canadian A-rated utility bonds and 30-year Canadas averaged only 60 basis points from 1996-August 1998, despite the significant financing requirements of the Federal and Provincial Governments. (High government financing requirements tend to crowd out issues of private businesses, raising spreads for private issuers.) Those spreads widened materially subsequent to the August 1998 crisis, peaking in late 2002 at close to 190 basis points. With the rebound of the economy from the 2001 downturn, spreads have since tightened. Nevertheless, the recent spread for long-term (30-year) A rated utility issues remains relatively high (approximately 120 basis points), when viewed in light of the reduced financing needs of the Federal and Provincial Governments and the overall receptiveness of the bond market to new utility issues at the present time. The comparatively high spreads point to a perception by investors of an increased level of utility risk.

c. Relevance of Changes in Debt Markets to Allowed ROEs

With the benefit of the experience in the debt markets since 1994-1995, at least four factors have emerged that are relevant to allowed ROEs that are determined solely by reference to the equity risk premium test, or which have their origins in the mid-1990s by virtue of an automatic adjustment mechanism.

1. The world market events of August 1998 brought into focus the globalization of markets and the ability of investors to seamlessly redeploy vast amounts of capital across borders. The global integration of capital markets requires explicit recognition of alternative investment opportunities beyond domestic boundaries.

2. The scarcity premium reflected in artificially low long-term government bond yields due to an anticipated decline in supply reduced the allowed returns for Canadian utilities for reasons unrelated to the equity cost of capital. Sole reliance on a cost of equity methodology that tracks long-term government bond yields raises the risk that the true cost of equity will be underestimated.

3. Utility stocks are interest sensitive. Since a utility's cost of debt, like its cost of equity, is determined by its business and financial risks, it should be expected that the utility cost of equity will track the utility cost of debt,[19] all other things equal, more closely than it will track the Government of Canada bond yield. Trends in the cost of capital to utilities, which are reflected in their cost of debt, are not directly captured by an equity risk premium model tied to government bond yields.

4. Stated more generally, with sole reliance on the equity risk premium test, the allowed ROE closely tracks changes in government bond yields, to the virtual exclusion of other factors that bear on a fair return on equity for a utility.

d. Equity Markets

i. Globalization

There are also factors specific to the equity markets that need to be considered in evaluating the levels of allowed returns in Canada. Of key importance is the recognition that Canadian investment opportunities are not limited to domestic

[19] The spread between corporate bond yields and government bond yields is frequently utilized in academic studies as a means of tracking changes in investors' relative risk perceptions and the risk premium. Two examples include: Robert S. Harris and Felicia C. Marston, "The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts", *Journal of Applied Finance*, Volume 11, No. 1, 2001; and R. Jagannathan and Z. Wang, "The Conditional CAPM and the Cross-Section of Expected Returns", *Journal of Finance*, 1996.

investments. The risk premium analysis should recognize the increasing globalization of capital markets and the increasing proportion of Canadians' investments in foreign equity securities (particularly U.S. securities).

In the latter half of the 1990s, Canadian investors became increasingly aware of the mediocre performance of the Canadian equity market, and, given the relatively small size of that market relative to the total global market (approximately 2%), pressure mounted to increase the cap on foreign investments held in RRSPs and pension funds.[20] The 2000 Federal Budget introduced an increase to 30% from the then prevailing 20% by 2001. The most recent budget (delivered February 23, 2005) removed the cap entirely.[21]

Investment outside of Canada has continued to grow rapidly as the barriers to foreign investment (in terms of both transactions and information costs as well as the foreign investment cap) have continued to decline. Foreign stock purchases by Canadians have more than quadrupled since 1995. Purchases in 1995 were $83 billion; in 2004, they were $513 billion.[22] In 2004, although the total percentage of foreign assets in the top 100 Canadian pension funds was only approximately 29%, the percentage of foreign equity to total equity was over

[20] The Investment Funds Institute of Canada (IFIC) had estimated in 1999 that raising the cap to 20% would increase returns by 1% and raising the cap to 30% would increase the returns by another 0.5%. "Paving the Way for Change to RRSP Foreign Content Rules", Tom Hockin, President and CEO IFIC, January 31, 2000.

[21] The Pension Investment Association of Canada (PIAC) and the Association of Canadian Pension Management (ACPM) had commissioned a report entitled "The Foreign Property Rule: A Cost-Benefit Analysis" (David Burgess and Joel Fried, University of Western Ontario, November 2002), which supported the removal of the cap. *The Globe and Mail* reported that the removal of the foreign content cap is expected to "have the broadest long-term impact of any personal finance measure in the budget. Global stock markets, accessible to any investor through global equity mutual funds, have historically made higher returns than the Canadian market, which only accounts for just over 2 per cent of the world's stock market value." Rob Carrick, "Finance: Your Bottom Line", Globe and Mail.com, February 23, 2005.

[22] The IFIC's report "Year 2002 in Review" stated,

> "During the period of 1991-1998, the percentage of sales in equity mutual funds that were comprised of non-domestic equities has hovered around the 41-58% range. This has significantly increased in 1999 and onwards. While performance in the markets is the major factor affecting such an increase, these figures can also be attributed to increases in foreign content limits in registered retirement savings plans as well as increased interest and availability of foreign clone funds."

50%.[23] In other words, pension funds have concentrated their foreign investment allocations to the equity markets, with the preponderance of their fixed income allocations in domestic bonds.

ii. Characteristics of Historic Canadian Equity Market

A second key consideration is that there are factors specific to the historic Canadian returns that cast doubt on the premise that the achieved returns are likely to be a good proxy for investors' future expected returns. One factor is the cap on foreign investment that historically has, to some extent, held investment captive in Canada. A second factor is the structural change of the Canadian equity market over the periods typically used to measure historic risk premiums. Although this structural change has occurred gradually, the current make-up of the S&P/TSX Composite, as shown in Table 3 below, is materially different than it was 25 years ago.

The historic Canadian risk premiums reflect in considerable measure a resource-based economy. At the end of 1980, no less than 46% of the market value of the TSE 300 was resource-based stocks.[24] By comparison, over the past two years, the resource-based percentage of the S&P/TSX Composite averaged just over 30%.[25] As the resource sectors have declined in importance, the influence of technology-intensive sectors on the index has risen markedly. Table 3, which compares the year-end 1980 and 2005 (Q1) market weightings of the technology/service sectors, highlights the change over the past 25 years. Investor returns expected from an equity market characterized by technology-intensive stocks may be quite different from returns expected from a market dominated by resource-based stocks.

[23] Benefits Canada, "Pensions without Borders", May 2005.
[24] As measured by the oil and gas, gold and precious minerals, metals/minerals, and pulp and paper products sectors. Excludes "the conglomerates sector", which also contained stocks with significant commodity exposure.
[25] Energy and Materials Industry Sectors; the weight of these sectors has recently increased reflecting the run-up in energy prices over the past 12 months.

Table 3

	1980	2005
Biotechnology/ Pharmaceuticals/ Health Care	0.0%	1.5%
Information Technology	0.9%	5.9%
Telecommunication Services	4.8%	5.3%
Media & Entertainment	0.6%	3.3%
Financial Services	13.5%	32.2%
	19.8%	48.2%

Source: *TSE Review*, December 1980 and March 2005.

Despite the shift in the make-up of the S&P/TSX Composite, the Canadian market remains significantly less diversified than the U.S. market. There are various sectors of a diversified economy that are relatively underrepresented in the Canadian equity market, e.g., pharmaceuticals, retailing and health care.

The average achieved returns on the TSE 300 Index were significantly affected by the relatively poor performance historically of commodity-based equities. Over the 1956-2003 period (the longest period for which consistent data exist for the individual TSE 300 sub-indices), the average returns of the commodity-based sectors were exceeded by the returns of virtually every other sector of the TSE 300.[26] Because the long-term returns of the various sectors are inconsistent with their relative risk, the achieved risk premiums may not accurately reflect what investors had expected.

[26] The average (compound, or geometric) returns of the commodity-based sectors were as follows:

Metals/Minerals	7.8%
Gold	9.5%
Oil and Gas	9.5%
Paper/Forest	7.1%

By comparison, the corresponding simple average of the remaining sectors' returns over the same period was 10.3%.

Third, a further impediment to reliance on the Canadian market as the "market portfolio" has been the undue influence of a small number of companies. In mid-2000, before the debacle in Nortel Networks' stock value and BCE's disposal of its 35% interest in Nortel, Nortel and BCE shares alone accounted for 35% of the total market value of the TSE 300. To put this in perspective, the largest two stocks in the S&P 500 at the same time accounted for only 8% of its total market value. The undue influence of a small number of stocks requires caution in drawing conclusions from the history of the TSE 300 regarding the forward-looking market risk premium.

Further, the Canadian equity market, which historically was proxied by the TSE 300 (1956-2001), has also been criticized for its lack of liquidity. In a speech in early 2002, Joseph Oliver, President and CEO of the Investment Dealers Association of Canada stated,

> "Over the last 25 years, the TSE 300 has steadily declined as a relevant benchmark index. Part of the problem relates to the illiquidity of the smaller component companies and part to the departure of larger companies that were merged or acquired. Over the last two years, 120 Canadian companies have been deleted from the TSE 300.
>
> When a company disappears from a US index due to a merger or acquisition, that doesn't affect the U.S. market's liquidity. An amply supply of large cap, liquid U.S. companies can take its place. In Canada, when a company merges or is acquired by another company, it leaves the index and is replaced by a smaller, less liquid Canadian company. We have seen this over the last two years, -- notably in the energy sector. Over the next few years, we are likely to see it in financial services, where further consolidation is inevitable. Over time, Canada's senior index has become less diversified, with more smaller component companies. As a result, as many as 75 of the TSE 300 will not qualify for inclusion in the new S&P/TSE Composite Index."

When the TSE 300 was overhauled (becoming the S&P/TSX Composite in May 2002), 275 companies were initially included, instead of the previous 300.[27] At March 31, 2005 there were only 226 companies in the Composite.

In mid-2005, the S&P/TSX Composite will be materially changed once again with the inclusion of income trusts. Income trusts, which just five years ago, had a market capitalization of approximately $20 billion, now have a market capitalization of approximately $130 billion, accounting for over 10% of the total market value of the publicly traded equities in Canada. Income trusts have significantly outperformed the "conventional" equity markets during the period for which income trust market data are readily available. The annual total return for the S&P/TSX Capped Income Trust Index over the 1998-2004 period averaged 17.4%, compared to 6.4% for the S&P/TSX Composite Index. The exclusion of income trust returns from the S&P/TSX Composite Index to date means that the measured equity returns understate the actual equity market returns achieved by Canadian investors.

iii. Relevance of U.S. Risk Premium Data

Finally, from 1947-2004, the achieved risk premiums in Canada were 170-180 basis points lower than in the U.S. Of that amount approximately 70 basis points is accounted for by historically higher bond yields in Canada. With the vastly improved economic fundamentals in Canada (particularly the fiscal health), the risk of investing in Canadian government bonds has declined. Consequently, the differential between Canadian and U.S. government bonds that existed historically, on average, is not expected to persist in the future. The most recent consensus long-term forecasts anticipate 10-year bond yields to be slightly lower in Canada than in the U.S. in the future. The most recent long-term forecasts from Consensus Economics anticipate an average yield of 5.5% from 2006-2015

[27] The overhaul of the composite index, which included more stringent criteria for inclusion, did not require that a specific number of companies be included in the index.

for Canada and 5.6% for the U.S. (Consensus Economics, *Consensus Forecasts*, April 2005). With similar interest rates in the two countries, the differential between equity and bond returns should, *ceteris paribus*, be closer in the future than it was historically. Consequently, the U.S. historic equity market risk premium should be considered to estimate the forward-looking equity market risk premium for Canadian investors.

In contrast to the S&P/TSX Composite, the historic U.S. equity returns were generated by a more diversified and liquid market. In addition, the U.S. equity market has historically been the principal alternative to domestic equity investments. The diversified nature of the U.S. equity market, as well as the close relationship between the Canadian and U.S. capital markets and economies, warrant giving significant weight to U.S. historical equity risk premiums in the estimation of the required equity risk premium applicable to Canada. Recognition of the relevance of U.S. market data in estimating the allowed return results in a higher estimate of the equity market risk premium, and in turn, of the equity return requirement for a benchmark utility.

6. Indicators of Inadequate Allowed Returns for Canadian Utilities

There are a number of indications that the strict reliance on equity risk premium models in conjunction with automatic adjustment formulas has resulted in allowed returns for Canadian utilities generally that are too low. These include the achieved returns of low risk (comparable) industrials, allowed returns of U.S. utilities, and concerns expressed by capital market participants.

a. Returns of Low Risk Industrials

The returns of comparable (low) risk industrials indicate an increasing divergence between Canadian utility and industrial returns. The comparable earnings test, discussed later in detail, shows that low risk Canadian industrial returns have

averaged approximately 13.0-13.5% over a full business cycle (1993-2004); they can be expected to remain at or above that level going forward. At 13.0-13.5%, the low risk Canadian industrial returns are some 375 basis points higher than the returns allowed by Canadian regulators for 2005 (13.25% versus 9.5%).

b. Allowed Returns for U.S. Utilities

With respect to allowed returns, the following table compares the allowed returns for Canadian utilities to those allowed for U.S. utilities (electric and gas) since 1994.

Table 4

Year	Average Allowed ROE: Canadian Utilities	Average 30-Year Canada Yield	Risk Premium	Average Allowed ROE: U.S. Utilities	Average 30-Year/ Long-Term Treasury Yield	Risk Premium
1994	11.5%	8.7%	2.9%	11.3%	7.4%	4.0%
1995	12.1	8.4	3.7	11.5	6.8	4.7
1996	11.4	7.8	3.6	11.3	6.7	4.6
1997	10.9	6.7	4.2	11.3	6.6	4.8
1998	10.2	5.6	4.6	11.6	5.5	6.0
1999	9.5	5.7	3.8	10.7	5.9	4.8
2000	9.8	5.7	4.1	11.4	5.9	5.5
2001	9.7	5.8	3.9	11.0	5.5	5.5
2002	9.6	5.7	3.9	11.1	5.4	5.7
2003	9.7	5.3	4.4	11.0	5.0	6.0
2004	9.6	5.1	4.5	10.7	5.1	5.6
2005 Q1	9.5	4.7	4.8	10.5	4.7	5.8

Source: Schedule 5.

Table 4 above shows that Canadian allowed utility returns were at similar levels to U.S. utility returns between 1994-1997. However, while allowed Canadian returns have declined by approximately 200 basis points from 11.5% to 9.5%, the decline in U.S. allowed returns has been more moderate (from about 11.5% to 10.5%).

Given the similarity in the cost of capital environment between Canada and the U.S., it should be expected that the allowed returns in the two countries should, given a similar utility risk environment, have converged. However, as Canadian regulators gravitated toward the equity risk premium test in the mid-1990s, Canadian allowed returns on equity tracked the downward trend in government bond yields to a much closer degree than allowed returns in the U.S. Currently the differential between allowed returns in Canada and the U.S. is about 100 basis points.

Differences in risk do not explain the differences in the level of allowed returns. When the focus is on a comparison of relatively "pure-play" utilities, the debt rating agencies do not view Canadian utilities as facing a materially different level of business risks than their U.S. counterparts. To illustrate, the typical business profile score assigned by S&P to both U.S. gas LDCs and combination electric/gas transmission/distribution utilities rated A- or better is currently "3"[28] (Schedule 4). The typical scores that were assigned to Canadian utilities (electric, gas LDC and gas pipelines), most of which have debt rated in the A category, was also "3".

[28] On a scale of "1" to "10", with "1" being the lowest business risk. The average score of all U.S. regulated companies, including those with significant unregulated operations, is "5".

The scores that were assigned by S&P to major Canadian utilities are as follows:

Table 5

Company	S&P Business Risk Profile
AltaLink L.P.	2.5
CU Inc.	3
Enbridge [1/]	2
Hydro One Inc.	3
Newfoundland Power	3
Nova Gas Transmission	3
Nova Scotia Power	4
Terasen Inc./Terasen Gas	3
TransCanada PipeLines	3
Median	**3**

[1/] Enbridge Inc. and Enbridge Gas Distribution.

Thus, S&P's business risk analysis has placed the typical Canadian utility in a similar business risk category to a typical U.S. gas distribution utility or transmission/distribution electric utility with a debt rating of A- or better.

The possibility that gas and electric utilities in the U.S. face higher business/regulatory risks than the typical Canadian utility is offset by significantly higher allowed common equity ratios in the U.S. The average allowed common equity ratio for the major investor-owned Canadian gas and electric utilities is approximately 37%. In contrast, the average allowed common equity ratio for U.S. gas and electric utilities (2000-2005 Q1) has been approximately 47%, as shown below in Table 6.

Table 6

Allowed Common Equity Ratios for U.S. Gas and Electric Utilities	
2000	48.7%
2001	46.3%
2002	47.2%
2003	49.7%
2004	46.3%
2005 (Q1)	45.3%
Average [1/]	47.2%

[1/] Weighted by number of decisions in each year.

Source: Regulatory Research Associates, *Major Rate Case Decisions, January 2003-December 2004*, January 2005 and *Major Rate Case Decisions – January to March 2005*, April 2005.

The difference in equity ratios between Canadian and U.S. utilities can be quantified, that is, translated into a further differential in equity returns. The ten percentage point differential between the average common equity ratios for the U.S. and Canadian utilities translates into approximately 100 basis points in equity return compensation in favor of U.S. utilities.[29]

c. Concerns of Capital Market Participants

There have been, over the past several years, concerns expressed by market participants regarding the disparity between allowed returns in Canada and the U.S. The Dominion Bond Rating Service (DBRS) has pointed to the low level of Canadian allowed returns. In a May 2003 commentary entitled, "The Rating Process and the Cost of Capital for Utilities: Five Reasons Why Canadian Utilities Have Lower Ratios, and Five Changes to Regulation Which Should Be

[29] Using approaches outlined in Schedule 29.

Introduced in Canada" (May 2003), DBRS called for increasing the allowed returns in Canada in order to make them more consistent with U.S. returns.

The allowed return for utilities in British Columbia has been lower than elsewhere in Canada in recent years. For Terasen Gas, DBRS considers "low allowed ROEs versus Canadian peers" to be a "Challenge" (DBRS, Terasen Gas Inc., June 21, 2005).

In December 2004, subsequent to the EUB's Decision 2004-052, DBRS referred to the low approved returns on equity as a "Challenge" for the ATCO Utilities. The DBRS report for ATCO Ltd. stated:

> "While ATCO's diversified operations, coupled with the Company's prudent management approach, provide a level of earnings stability, additional challenges over the medium term include the relatively low approved returns on equity (ROE) and deemed equity for the regulated businesses, continuing regulatory risk and lag and ATCO's merchant power exposure in Alberta."

Additional recent DBRS reports citing the challenge of low approved returns on equity have been published for other Alberta utilities, i.e., AltaLink (November 2004), and FortisAlberta (September 2004).

Standard & Poor's, in its recent summary report on Terasen Gas Inc. (April 18, 2005), stated,

> "The regulation, however, is considered weak in comparison with international peers with regard to the allowed returns on equity (9.03% for Terasen Gas and 9.53% for TGVI for 2005) and thin deemed equity layers (33% for Terasen Gas and 35% for TGVI, respectively)."

Standard & Poor's has also cited the Alberta utilities' low equity returns and common equity ratios subsequent to the Generic Cost of Capital decision. In its recent report for AltaLink, S&P stated,

> "Like many Canadian regulated utilities, AltaLink's modest financial position is constrained by a comparatively low approved ROE and thin equity base." (S&P, AltaLink, April 19, 2005).

A CIBC World Markets Report entitled "Pipelines and Utilities: Time to Lighten Up", published December 2001, stated, in reference to the-then recent formulaic reduction in Newfoundland Power's allowed return:

> "The magnitude of the reduction in the case of Newfoundland Power illustrates the flaw in using a brief snapshot of existing rates rather than a forecast of rates that are expected to persist during the upcoming year. More importantly, however, it shows the shortcoming of the formula approach itself. Mechanically tying allowed returns on equity to long bond yields is an approach that is simple for regulators to apply; however, in recent years, with a steady decline in bond yields, it has produced-allowed returns that are out of sync with the cost of capital, and returns that are being achieved with comparable nonregulated companies or regulated returns that are achievable in the U.S."

In her August 15, 2003 "Research Industry Comment: Utilities", entitled "It's the Grid, Silly" (following the power outage in Canada and the U.S.), RBC Capital Markets' analyst Maureen Howe pointed to the relatively low level of Canadian utility returns. In her "Investment Opinion", she stated,

> "Allowed returns on equity (ROEs) in Canada for regulated transmission and distribution utilities are relatively low compared to the U.S. For example, the Alberta Energy and Utilities Board recently approved an allowed ROE of 9.4% based on a 34% deemed common equity component for AltaLink. In comparison, the U.S. Federal Energy Regulatory Commission (FERC) approved an allowed ROE of 13.88% for International Transmission Co., which took over DTE Energy's transmission assets in April 2003. To encourage new transmission investment, FERC has proposed additional incentives that would boost allowed ROEs for transmission investments. With renewed emphasis on new investment in the power grid, Canadian regulators could follow suit."

7. Conclusions

The factors discussed above indicate:

1. The prevailing ROEs for Canadian utilities, generally, are too low. The benchmark low risk utility ROE in British Columbia, in turn, is approximately 45 basis points lower than the allowed ROEs set by other regulators that may also be characterized as benchmark returns.[30]

   The generally low allowed ROEs in Canada make Canadian utilities relatively unattractive investments versus their U.S. peers. In turn, the lower allowed ROEs in British Columbia penalize that province's utilities relative to their Canadian peers. As indicated in the following table, the British Columbia utilities' risk compensation (the weighted equity return component of the allowed return on rate base) has been materially lower than their peers.

[30] AEUB, NEB, OEB, La Régie and Newfoundland and Labrador Public Utilities Board (See Schedule 5).

Table 7

	Allowed Common Equity Ratio (1)	Allowed Return at Forecast 5.25% Long Canada (2)	Weighted Equity Return Component (Col 1 x Col 2)
Terasen Gas	**33.0%**	**8.75%**	**2.89%**
Comparables			
ATCO Gas	38.0%	9.28%	3.52%
Enbridge Gas	35.0%	9.15%	3.20%
Gaz Metro	38.5%	9.28%	3.57%
TransCanada Pipelines	36.0%	9.24%	3.33%
Union Gas	35.0%	9.30%	3.25%
AVERAGE	36.5%	9.25%	3.38%
TGVI	**35.0%**	**9.25%**	**3.24%**
Comparables			
AltaGas Utilities	41.0%	9.28%	3.80%
EGNB	50.0%	13.00%	6.50%
Gazifère	40.0%	9.68%	3.87%
Heritage	45.0%	13.00%	5.85%
Natural Resource Gas	40.0%	9.15%	3.66%
AVERAGE	43.2%	10.82%	4.74%
FortisBC	**40.0%**	**9.15%**	**3.66%**
Comparables			
AltaGas Utilities	41.0%	9.28%	3.80%
FortisAlberta	37.0%	9.28%	3.43%
Ontario MEUs [1/]	40.0%	9.05%	3.62%
Newfoundland Power	44.5%	9.47%	4.21%
AVERAGE	40.6%	9.27%	3.77%
Pacific Northern Gas	**36.0%**	**9.40%**	**3.38%**
Comparables			
AltaGas Utilities	41.0%	9.28%	3.80%
ATCO Pipelines	43.0%	9.28%	3.99%
Gazifère	40.0%	9.68%	3.87%
Natural Resource Gas	50.0%	9.15%	4.58%
AVERAGE	43.5%	9.34%	4.06%

[1/] Rate base $250 million to $1 billion

2. Changes in capital and economic conditions warrant a re-estimation of the fair return for a benchmark low risk utility; these changes are supportive of higher allowed returns in Canada than those currently prevailing.

3. The re-estimation of the fair return should give weight to each of the tests that have traditionally been used, that is, the equity risk premium test, the discounted cash flow test and the comparable earnings test. My estimation of the fair return on equity for a benchmark low risk utility using the three tests follows.

C. EQUITY RISK PREMIUM TEST

1. Conceptual Underpinnings

The equity risk premium test is derived from the basic concept of finance that there is a direct relationship between the level of risk assumed and the return required. Since an investor in common equity takes greater risk than an investor in bonds, the former requires a premium above bond yields in compensation for the greater risk. The equity risk premium test is a measure of the market-related cost of attracting capital, i.e., a return on the market value of the common stock, not the book value.

The estimation of the required equity risk premium, for either the market as a whole or a specific utility, is not an exact science. Hence, it is necessary to evaluate a broad spectrum of data and apply alternative risk premium estimation approaches to arrive at a reasonable determination of the required equity risk premium.

There are two broad approaches to estimating the equity risk premium for a utility. The first begins with an estimate of the expected equity risk premium for the entire equity market (i.e., the equity market portfolio), subsequently adjusted to reflect the risk of a utility relative to the market as a whole. The second approach develops the risk premium directly for a particular stock or industry (e.g., utilities). In both approaches, the estimated equity risk premiums are obtained by subtracting the estimated risk-free rate from the estimated expected

return on the market portfolio or the individual industry/stock. The expected equity risk premium can be developed: (1) from an analysis of historic market risk premiums and (2) from prospective market risk premiums based on discounted cash flow (DCF) estimates of the expected market return. DCF-based estimates of the cost of equity comprise the dividend yield plus investor expectations of longer-term growth.

The equity risk premium test, similar to the other tests used to arrive at a fair return, is forward-looking, that is, it is intended to estimate investors' future equity return requirements. The magnitude of the differential between the required/expected return on equities and the risk-free rate is a function of investors' willingness to take risks and their views of such key factors as inflation, productivity and profitability.

Because the risk premium test is forward-looking:

1. Historic risk premium data need to be evaluated in light of prevailing economic/capital market conditions; and,

2. Direct estimates of the forward-looking risk premium need to supplement measurement of the risk premium by reference to historic data.

2. Risk-Free Rate

The point of departure for applying the equity risk premium test is a forecast of the risk-free rate to which the equity risk premium is applied. Reliance on a long-term government bond yield as the risk-free rate recognizes (1) the administered nature of short-term rates; and (2) the long-term nature of the assets to which the equity return is applicable. The risk-free rate, for purposes of this analysis, is the

forecast 30-year Canada yields, as has been used by the BCUC in establishing the allowed return under the automatic adjustment mechanism.

The forecast 30-year yield is based on a consensus forecast of 10-year Canada bonds plus the spread between 10- and 30-year Canadas. *Consensus Forecasts*, Consensus Economics (May 2005), anticipates that the 10-year yield 3-months and 12-months hence will be 4.5% and 4.9% respectively, for an average of 4.7%. The average April 2005 spread between 10- and 30-year Canadas was 44 basis points, which, when added to the 10-year forecast, indicates a long-term (30-year) Canada bond yield of 5.14%, rounded for purposes of applying the risk premium tests to 5.25%.

3. Risk-Adjusted Equity Market Risk Premium Test

a. Conceptual and Empirical Considerations

The risk-adjusted equity market risk premium approach to estimating the required utility equity risk premium entails (1) estimating the equity risk premium for the equity market as a whole; (2) estimating the relative risk adjustment required for the benchmark low risk Canadian utility; and (3) applying the relative risk adjustment to the equity market risk premium, to arrive at the benchmark utility equity risk premium. The cost of equity is thus estimated as:

$$\text{Risk-Free Rate} + \left\{ \text{Relative Risk Adjustment} \times \text{Market Risk Premium} \right\}$$

The risk-adjusted equity market risk premium test is a variant of the Capital Asset Pricing Model (CAPM). The CAPM attempts to measure what an equity investor should require as a return within the context of a diversified portfolio. Its focus is on the minimum return that will allow a company to attract equity capital. In its simplest form, the CAPM posits the following relationship between the required

return on the risk-free investment and the required return on an individual equity security (or portfolio of equity securities):

$$R_E = R_F + b_e (R_M - R_F)$$

where,

R_E = Required return on individual equity security
R_F = Risk-free rate
R_M = Required return on the equity market as a whole
b_e = Beta on individual equity security.

The CAPM relies on the premise that an investor requires compensation for non-diversifiable risks only. Non-diversifiable risks are those risks that are related to overall market factors (e.g., interest rate changes, economic growth). Company-specific risks, according to the CAPM, can be diversified away by investing in a portfolio of securities; therefore, the shareholder requires no compensation to bear those risks.

In the CAPM, non-diversifiable risk is captured in the beta, which, in principle, is a forward-looking (expectational) measure of the volatility of a particular stock or portfolio of stocks, relative to the market. Specifically, the beta is equal to:

$$\frac{\text{Covariance } (R_E, R_M)}{\text{Variance } (R_M)}$$

The variance of the market return is intended to capture the uncertainty related to economic events as they impact the market as a whole. The covariance between the return on a particular stock and that of the market reflects how responsive the required return on an individual security is to changes in events, which also change the required return on the market.

In practice, the beta is a calculation of the historical correlation between the overall equity market, as proxied in Canada by the S&P/TSX Composite, and individual stocks or portfolios of stocks.

The CAPM, framed in an elegant, simple construct, has an intuitive appeal. However, in addition to its restrictive premises, it has disadvantages, which call into question placing sole reliance on it for purposes of determining a fair return on equity. The disadvantages are summarized in Appendix A.

The body of evidence on CAPM leads to the conclusion that, while betas do measure relative volatility, the proportionate relationship between risk (beta) and return posited by the CAPM has not been established. A summary of various studies, published in a guide for practitioners, concluded,

> "Empirical tests of the CAPM have, in retrospect, produced results that are often at odds with the theory itself. Much of the failure to find empirical support for the CAPM is due to our lack of ex ante, expectational data. This, combined with our inability to observe or properly measure the return on the true, complete, market portfolio, has contributed to the body of conflicting evidence about the validity of the CAPM. It is also possible that the CAPM does not describe investors' behavior in the marketplace.
>
> Theoretically and empirically, one of the most troubling problems for academics and money managers has been that the CAPM's single source of risk is the market. They believe that the market is not the only factor that is important in determining the return an asset is expected to earn." (Diana R. Harrington, *Modern Portfolio Theory, The Capital Asset Pricing Model & Arbitrage Pricing Theory: A User's Guide*, Second Edition, Prentice-Hall, Inc., 1987, page 188.)

Fama and French in "The CAPM: Theory and Evidence" (Summer 2004), Journal of Economic Perspectives, Volume 18, Number 3, pp. 25-26:

> "The attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk. Unfortunately, the empirical record of the model is poor – poor enough to invalidate the way it is used in applications. The

> CAPM's empirical problems may reflect theoretical failings, the result of many simplifying assumptions. But they may also be caused by difficulties in implementing valid tests of the model. For example, the CAPM says that the risk of a stock should be measured relative to a comprehensive 'market portfolio' that in principle can include not just traded financial assets, but also consumer durables, real estate and human capital. Even if we take a narrow view of the model and limit its purview to traded financial assets, is it legitimate to limit further the market portfolio to U.S. common stocks (a typical choice), or should the market be expanded to include bonds, and other financial assets, perhaps around the world? In the end, we argue that whether the model's problems reflect weaknesses in the theory or in its empirical implementation, the failure of the CAPM in empirical tests implies that most applications of the model are invalid."

Fama and French have developed an alternative model which incorporates two additional explanatory factors in an attempt to overcome the problems inherent in the single variable CAPM.[31]

To quote Burton Malkiel in *A Random Walk Down Wall Street*, New York: W. W. Norton & Co., 2003:

> "Beta, the risk measure from the capital-asset pricing model, looks nice on the surface. It is a simple, easy-to-understand measure of market sensitivity. Alas, beta also has its warts. The actual relationship between beta and rate of return has not corresponded to the relationship predicted in theory during long periods of the twentieth century. Moreover, betas for individual stocks are not stable from period to period, and they are very sensitive to the particular market proxy against which they are measured.
>
> I have argued here that no single measure is likely to capture adequately the variety of systematic risk influences on individual stocks and portfolios. Returns are probably sensitive to general market swings, to changes in interest and inflation rates, to changes in national income, and, undoubtedly, to other economic factors such as exchange rates. And if the best single risk estimate were to be chosen, the traditional beta measure is unlikely to be everyone's first choice. The mystical perfect risk measure is still beyond our grasp." (page 240)

[31] The additional factors are size and book to market.

One of the key developers of the Arbitrage Pricing Model, Dr. Stephen Ross, has stated,

> "Beta is not very useful for determining the expected return on a stock, and it actually has nothing to say about the CAPM. For many years, we have been under the illusion that the CAPM is the same as finding that beta and expected returns are related to each other. That is true as a theoretical and philosophical tautology, but pragmatically, they are miles apart."[32]

My analysis to test for the presence of a positive relationship between market return and beta in the Canadian equity market is set out in Appendix A. This analysis generally shows a negative relationship between the calculated, or "raw", beta and return, the opposite of the model's premise.

In brief, the observations and analysis caution against reliance on beta as the sole measure of risk and the predictor of equity returns. The estimate of the relative risk adjustment should consider relative total risk, not solely the systematic market risk that beta is intended to measure. Moreover, they highlight the importance of reliance on multiple equity risk premium tests, as well as the other traditional tests (DCF and comparable earnings) in estimating a fair return on equity.

b. Equity Market Risk Premium

i. Factors to Consider

My estimate of the expected/required equity market risk premium was made by reference to an analysis of historic (experienced) market risk premiums. Analysis of historic risk premiums should not be limited to the Canadian experience, but

[32] Dr. Stephen A. Ross, "Is Beta Useful?" *The CAPM Controversy: Policy and Strategy Implications for Investment Management*, AIMR, 1993.

should also take into account the U.S. equity market to be a relevant benchmark for estimating the equity risk premium from the perspective of Canadian investors. The rationale is two-pronged. First, as discussed in Section IV, the historic Canadian equity and government bond returns incorporate various factors that make them questionable as a good representation of future returns (e.g., capital held captive in Canada, lack of market liquidity and diversity, higher risk of Government of Canada bond market historically, which has since dissipated). Second, the U.S. economy and capital market, which is increasingly integrated with the Canadian economy and capital market, has historically been the largest recipient of Canadian investment funds outside of Canada, and is considered a broadly diversified global benchmark market.

The estimation of the expected/required market risk premium from achieved market risk premiums is premised on the notion that investors' return expectations and requirements are linked to their past experience. Basing calculations of achieved risk premiums on the longest periods available reflects the notion that it is necessary to reflect as broad a range of event types as possible to avoid overweighting periods that represent "unusual" circumstances. On the other hand, the objective of the analysis is to assess investor expectations in the current economic and capital market environment. Hence, focus should be placed on periods whose economic characteristics, on balance, are more closely aligned with what today's investors are likely to anticipate over the longer-term. The focus on the longer-term reflects the perpetual nature of equity.

Key structural economic changes have occurred since the end of World War II, including:

1. The globalization of the North American economies, which has been facilitated by the reduction in trade barriers of which GATT (1947) was a key driver;

2. Demographic changes, specifically suburbanization and the rise of the middle class, which have impacted on the patterns of consumption;

3. Transition from a resource-oriented/manufacturing economy to a service-oriented economy;

4. Technological change, particularly in the areas of telecommunications and computerization, which have facilitated both market globalization and rising productivity.

Consequently, I focused on post-World War II returns, that is, 1947-2004.

ii. Historic Risk Premiums

As previously discussed, in arriving at an estimation of the market risk premium, I looked to both Canadian and U.S. historic returns and risk premiums. The average post-World War II U.S. and Canadian historic risk premiums show the following:

Table 8

Historic Average Risk Premiums (1947-2004)		
	Arithmetic	**Geometric**
Canada	5.3%	4.5%
U.S.	7.0%	6.2%

Source: Schedule 8.

In light of the increase in Canadian investors' purchases of U.K. equities,[33] I also looked at the historic U.K. indicated market risk premiums over the same period. The U.K. historic premiums were in the range of 5.6% to 6.0% (geometric and arithmetic averages respectively) from 1947-2004 (see Schedule 8).

iii. Superiority of Arithmetic Averages

When historic risk premiums are used as a basis for estimating the expected risk premium, arithmetic averages, not geometric (compound) averages, should be used. Expressed simply, the arithmetic average recognizes the uncertainty in the stock market; the geometric average removes the uncertainty by smoothing over annual differences.

In Robert F. Bruner, Kenneth M. Eades, Robert S. Harris, and Robert C. Higgins, "Best Practices in Estimating the Cost of Capital: Survey and Synthesis", *Financial Practice and Education*, Spring/Summer 1998, pp. 13-28, the authors found that 71% of the texts and tradebooks in their survey supported use of an arithmetic mean for estimation of the cost of equity. One such textbook, Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance,* Boston: Irwin McGraw Hill, 2000 (p. 157), states, "Moral: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return."

The appropriateness of using arithmetic averages, as opposed to geometric averages, for this purpose is succinctly explained in Ibbotson Associates; *Stocks, Bonds, Bills and Inflation*, *1998 Yearbook*, pp. 157-159:

> "The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which when

[33] In 1995, U.K. equities represented only 4.5% of all foreign equities purchased by Canadian investors. In 2004, they represented 53%. Purchases of U.S. and U.K. equities, in total, accounted for 88% of all foreign equities purchased by Canadian investors in 2004 (Statistics Canada).

> compounded over multiple periods, gives the mean of the probability distribution of ending wealth values . . .in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital."[34]

Triumph of the Optimists: 101 Years of Global Investment Returns by Elroy Dimson, Paul Marsh and Mike Staunton, Princeton: Princeton University Press, 2002 (p. 182), stated,

> "The arithmetic mean of a sequence of different returns is always larger than the geometric mean. To see this, consider equally likely returns of +25 and –20 percent. Their arithmetic mean is 2½ percent, since (25 – 20)/2 = 2½. Their geometric mean is zero, since (1 + 25/100) x (1 – 20/100) – 1 = 0. But which mean is the right one for discounting risky expected future cash flows? For forward-looking decisions, the arithmetic mean is the appropriate measure.
>
> To verify that the arithmetic mean is the correct choice, we can use the 2½ percent required return to value the investment we just described. A $1 stake would offer equal probabilities of receiving back $1.25 or $0.80. To value this, we discount the cash flows at the arithmetic mean rate of 2½ percent. The present values are respectively $1.25/1.015 = $1.22 and $0.80/1.025 = $0.78, each with equal probability, so the value is $1.22 x ½ + $0.80 x ½ = $1.00. If there were a sequence of equally likely returns of +25 and –20 percent, the geometric mean return will eventually converge on zero. The 2½ percent forward-looking arithmetic mean is required to compensate for the year-to-year volatility of returns."

In its 1999 decision, the Commission concluded that my risk premium "which relies exclusively on a one year holding period, is likely to be upwardly biased." In arriving at that conclusion, the Commission considered using the arithmetic average to estimate the expected risk premium to be synonymous with an investment holding period of one year. Reliance on the arithmetic average to estimate the future equity risk premium is not premised on a one year holding period. It is premised on the uncertainty with respect to each year's return during the holding period, whatever that may be. When the arithmetic average of historic annual returns is used to develop the expected value of the return, every

[34] An illustration from Ibbotson Associates demonstrating why the arithmetic average is more appropriate than the geometric average for estimating the expected risk premium is found in Appendix A.

achieved return considered becomes one possible future outcome for each year the security will be held. Each historic return is thus implicitly assigned an equal probability of occurring during each year of the holding period. The resulting expected value of the risk premium is the arithmetic average of all of the past premiums considered, whether the expected future holding period is one year or twenty years.

iv. Future vs. Historic Risk Premiums

The equity market "bubble and bust" has spawned a number of studies of the equity market risk premium that have speculated the U.S. market risk premium will be lower in the future than in the past. The speculation stems in part from the hypothesis that the magnitude of the achieved risk premiums is due to an increase in price/earnings ratios. That is, the historic U.S. equity market returns reflect appreciation in the value of stocks in excess of that supported by the underlying growth in earnings or dividends. The increase in P/E ratios, it has been argued, reflects a decline in the rate at which investors are discounting future earnings, i.e., a lower cost of capital.

However, the preponderance of the increase in price/earnings ratios in the U.S. market occurred during the 1990s. The P/E ratio[35] of the S&P 500 averaged 14 times from 1926-1989, with no discernible upward trend.[36] From 14.7 in 1989, the P/E ratio rose to a high of 32.3 in 1998, and averaged 23 from 1990-2000. At the height of the equity market (1998 to mid-2000), frequently described as a "speculative bubble", investors believed the only risk they faced was not being in the equity market. In mid-2000, the bubble burst, as the U.S. economy began to lose steam. The events of September 11, 2001, the threat of war, the loss of credibility on Wall Street, accounting misrepresentations and outright fraud, led to a loss of confidence in the market and a sense of pessimism about the equity

[35] Coincident price and earnings.
[36] The average from 1947-1989 was 13.3 times.

market. These events led to a heightened appreciation of the inherent risk of investing in the equity market, all of which translated into a "bearish" outlook for the U.S. equity market and sent investors to the sidelines.[37] Nevertheless, the P/E ratio for the S&P 500 remained at a somewhat elevated level relative to history.[38]

To assess the impact of rising P/E ratios, I analyzed the equity returns of the S&P 500 achieved prior to 1990, that is, the post-World War II period prior to the upward trend in P/E ratios. That analysis indicates that the achieved equity returns for the S&P 500 averaged 12.3% (geometric average) to 13.5% (arithmetic average) from 1947-1989. The corresponding returns from 1947-2004 were 11.9% (geometric average) to 13.2% (arithmetic average). Hence, despite the increase in P/E ratios experienced during the 1990s, the average equity market returns were actually lower over the entire 1947-2004 period than over the 1947-1989 period. Consequently, based on history, an expected value for the U.S. equity market return of 12.0-13.0% is not unreasonable. At the 2006 forecast of the long-term (20-year) Treasury bond yield of 5.5%,[39] this equates to an expected value for the equity risk premium of approximately 7.0%. Relative to the consensus forecast yield over the longer-term of approximately 6.0%,[40] the risk premium would be 6.0-7.0%.

My review of Canadian equity returns over the same period indicates similar results. The returns for the Canadian equity market were 11.9% (geometric average) to 13.1% (arithmetic average), very similar to the U.S. returns. In

[37] Lowered expectations for the equity market have led investors to focus elsewhere for superior risk/reward opportunities, e.g., real estate, and private equity, suggesting that the expectations for the public equity market at present may be out-of-line with return requirements. As previously noted, investors' experiences during the equity market "bust" have been a key factor in explaining the recent burgeoning of the income trust market in Canada.

[38] At the end of May 2005, the S&P 500 forward P/E ratio was 16, based on current price/forecast 2005 earnings.

[39] For first three quarters of 2006, Blue Chip *Financial Forecasts*, June 1, 2005.

[40] From Consensus Economics, *Consensus Forecasts* (April 10, 2005); equals the forecast of 10-year Treasury notes of 5.6% for 2006-2015 plus a 10-year/long-term Treasury spread of 43 basis points.

relation to the near-term (5.25%) and longer-term forecasts (5.75%)[41] of the 30-year Canada bond yield, an expected value of the equity market returns in the range of 12.0-13.0% indicates an expected value for the equity risk premium of approximately 6.5%.

While the above analysis demonstrates no trend in market equity returns, the measured risk premiums have declined. The arithmetic average achieved risk premium in Canada from 1947-1989 was 7.6%; in the U.S. it was 8.5%. By comparison, the corresponding Canadian and U.S. 1947-2004 risk premiums were 5.3% and 7.0% respectively. An analysis of the underlying causes shows that high bond returns over the period 1980-2004 are the primary factor in the experienced decline in risk premiums, not a downward trend in stock returns. (See Appendix A for a full discussion).

With interest rates currently at historically low levels, and more likely to increase rather than decrease further, the recent average bond returns (12% over the past 25 years) overstate a reasonable forward-looking expectation of bond returns, as embedded in current yields. The current low level of long-Canada yields limits the possibility of future capital gains. Thus, a reasonable expected value of the long Canada bond return is the forecast long Canada yields, rather than the historic average.

Given the absence of any upward or downward trend in the historic equity market returns, a reasonable expected value of the future equity market return is a range of 11.5-12.5%, based on both the Canadian and U.S. equity market returns. (See Appendix A). Based on the near-term forecast for long Canadas of 5.25%, and an expected equity market return of 11.5-12.5%, the indicated Canadian equity market risk premium would be in the range of 6.25-7.25%, or approximately 6.75%.

[41] Long-term (2006-2015) forecast for 10-year Canada bond yields of 5.4% plus historic spread between 10- and 30-year Canadas of approximately 35 basis points, from Consensus Economics, *Consensus Forecasts*, April 2005.

v. Estimate of Equity Market Risk Premium

Based on the analysis of the historic risk premiums, primarily in Canada and the U.S., with focus on the arithmetic averages and with consideration given to trends in the equity and government bond markets in both countries, a reasonable estimate of the expected value of the equity market risk premium at the forecast level of long-term government bond yields is 6.0-6.5%. The 6.0-6.5% estimate of the equity market risk premium explicitly recognizes the expected value of the equity market return developed from historic values in conjunction with the current and forecast low levels of interest rates.

c. Relative Risk Adjustment

The relative risk adjustment that is applicable to a benchmark low risk utility is approximately 0.65, based on total risk as measured by standard deviations of market returns and adjusted betas. The analysis that follows explains how the relative risk adjustment was derived.

i. Total Market Risk

My analysis of the relative risk adjustment starts with a recognition that investors are not perfectly diversified and that they expect some compensation for assuming company-specific risk. It also recognizes that, while investors can diversify their portfolios, the stand-alone utility to which the allowed return is applied cannot. Thus, a risk measurement which reflects those considerations is relevant. These considerations point to a focus on total market risk, rather than solely the non-diversifiable risk which beta attempts to measure. The infirmities of beta as a measure of risk, as well as the absence of an observable relationship between "raw" betas and the market return on equity provide further support for reliance on other measures of risk.

The standard deviation of market returns is the principal measurement of total market risk. To compare the relative total risk of Canadian utilities, the monthly standard deviations of total market returns for the S&P/TSX Index and for each of the 10 major Sectors of the S&P/TSX Index were calculated, over recent five-year periods. The standard deviations for the Utilities Index show that the absolute volatility of utility stocks has risen significantly since the middle of the 1990s. The standard deviation of returns for the Utilities Index for the five-year period ending 2004 was approximately 30% higher than the corresponding value for the five-year period ending 1997 (Schedule 15).

To translate the standard deviation of market returns into a relative risk adjustment, utility standard deviations must be related to those of the overall market. The relative market volatility of Canadian utility stocks was measured by comparing the standard deviations of the Utilities Index to the standard deviations of the S&P/TSX Index and the simple mean of the standard deviations of the 10 Sectors. Table 9 below shows the ratios of the standard deviations of the Utilities Index to those of the S&P/TSX Index and the 10 S&P/TSX Sectors. Focusing on the relationship between the standard deviation of the Utilities Index and the mean and median standard deviations of the 10 major Sector Indices suggests a relative risk adjustment of approximately 0.60-0.70.

Table 9

Five-Year Period Ending	Standard Deviation of S&P/TSX Utilities Index as a Percent of:		
	Standard Deviation of S&P/TSX	Standard Deviation of 10 S&P/TSX Sectors	
		Mean	Median
1997	88%	64%	74%
1998	81%	65%	65%
1999	83%	63%	61%
2000	89%	69%	71%
2001	86%	67%	73%
2002	84%	62%	68%
2003	90%	63%	70%
2004	89%	61%	72%

Source: Schedule 15.

ii. Historic "Raw" Betas

Since beta remains the risk measure that underpins the application of the simple CAPM (of which the risk-adjusted equity market risk premium test is a variant), I also considered betas in arriving at the estimated relative risk adjustment for a benchmark utility. The following table summarizes "raw" betas[42] for individual major publicly-traded Canadian regulated electric and gas companies, the TSE Gas/Electric Index, and the S&P/TSX Utilities Sector over five-year periods ending 1993 through 2004.[43] The betas were divided into two periods: betas ending in the years 1993-1998 and betas ending in the years 1999-2004. The

[42] The "raw" beta refers to the simple regression between 60 monthly percentage changes in the price of a utility or utility index and the corresponding percentage change in the price of the equity market index (the S&P/TSX Composite).

[43] The S&P/TSX Utilities Sector was created in 2002 (with historic data calculated from year-end 1987), when the TSE 300 was revamped to create the S&P/TSX Composite. The Utilities Sector was essentially an amalgamation of the former TSE 300 Gas/Electric and Pipeline sub-indices. In May 2004, the pipelines were moved to the Energy Sector.

betas were divided into two separate periods to highlight the impact of the "tech bubble" on the measured betas.

Table 10

Canadian Utility "Raw" Betas (Average of 60 month betas ending in each of indicated years)			
Ending in Years:	**Individual Canadian Utilities (Median)**	**TSE 300 Gas/Electric Utility Index**	**S&P/TSX Utilities Sector**
1993-1998	0.47	0.49	0.60
1999-2004	0.14	0.23	0.00

1/ Canadian Utilities Ltd., Emera Inc., Enbridge Inc., Fortis Inc., Terasen Inc., and TransCanada Corp.

Source: Schedule 11.

The observed recent decline in the measured utility betas in 1999-2004 can be traced to three factors: (1) the technology sector bubble in general; (2) the dominance in the TSE 300 of two firms during this period, Nortel Networks and BCE; [44] and (3) the negative impact of rising interest rates on utility stocks while the equity market composite was soaring. Chart 1 in the Statistical Exhibit graphically demonstrates the decoupling between utility stocks and the S&P/TSX Composite between 1999 and mid-2002 period, when the equity market "boom and bust" was most prevalent. As a result, the disparate movements in utility equities relative to the TSE 300 during this period produced lower measured utility betas.

The decoupling between utility shares and the rest of the market during the technology bubble (and subsequent melt-down of Nortel and other high tech

[44] The impact on the S&P/TSX Utilities Index "raw" beta due solely to the dominance of Nortel Networks in the TSE 300 can be estimated by excluding Nortel from the TSE 300 and recalculating the beta. The recalculated "raw" 1997-2001 beta, for example, was 0.18, versus -0.03 inclusive of Nortel; see Schedules 11 and 12.

stocks) should not be interpreted as a change in the relative riskiness of utility shares, but rather as a further indication of the weakness of beta as the sole measure of the relative equity return requirement.[45]

However, a further review of Chart 1 shows that, beginning in mid-2002, the equity market composite and the utility equities began to once again exhibit a correlation that, graphically, resembles more closely the typical relationship observed prior to the market "boom and bust". Indeed, when betas are calculated over recent periods that largely eliminate the "boom and bust" period, utility betas are higher. The calculations of the "raw" betas (including and excluding Nortel, the latter to eliminate any lingering impact of Nortel) over the 36-month period 1/2002-12/2004 and the 30-month period 7/2002-12/2004 shows the following:

Table 11

Canadian Utility Raw Betas				
	Period			
	1/2002-12/2004		**7/2002-12/2004**	
	Including Nortel	Excluding Nortel	Including Nortel	Excluding Nortel
Individual Canadian Utilities:				
Mean	0.28	0.36	0.35	0.42
Median	0.31	0.38	0.39	0.42
S&P/TSX Utilities Sector	0.34	0.46	0.44	0.55

Source: Schedule 14.

Table 11 indicates that the betas of the utilities have been gradually rising as the Nortel impact has been disappearing from the equity market composite index.

[45] Schedule 13 shows that utilities were not the only companies whose betas were negatively impacted by the speculative bubble and subsequent market decline. To illustrate, the 60 month beta ending 1997 of the Consumer Staples Sector was 0.62; the corresponding betas ending 2003 and 2004 were -0.08 and -0.07 respectively. In contrast, over the same periods, the beta of the Information Technology Sector rose from 1.57 to 2.87.

iii. Impact of Interest Sensitivity on Relative Risk

Utilities are interest-sensitive stocks and thus tend to move with interest rates, which frequently move counter to the equity market. Consequently, utility equity price movements are correlated not only with the stock market, but also with movements in the bond market. Thus, the interest-sensitivity of utility shares is not fully captured in the calculated "raw" betas, which simply measure the covariability between a stock and the equity market composite.[46]

A regression of the monthly returns on the TSE Gas/Electric Index against the TSE 300 over the period 1970-August 1999[47] shows the following:

$$\begin{array}{lll} \text{Monthly TSE Gas/Electric Return} & = & 0.0054 + 0.58 \left\{ \text{Monthly TSE 300 Return} \right\} \\ \text{t-statistic} & = & \qquad\quad 16.5 \\ R^2 & = & 43.3\% \end{array}$$

The relationship quantified in the above equation suggests a relative risk adjustment of close to 0.60. However, the R^2, which measures how much of the variability in utility stock prices is explained by volatility in the equity market as a whole, is only 43%. That means 57% of the volatility remains unexplained.

When the analysis is expanded to include Government of Canada bond returns, the following regression is produced:

$$\begin{array}{lll} \text{Monthly TSE Gas/Electric Return} & = & 0.0018 + 0.48 \left\{ \text{Monthly TSE 300 Return} \right\} + .52 \left\{ \text{Monthly Long Canada Bond Return} \right\} \\ \text{t-statistics} & = & \qquad\quad 14.5 \qquad\qquad\qquad\qquad\quad 9.5 \\ R^2 & = & 55.0\% \end{array}$$

[46] In theory, the beta should be measured against the entire "capital market" including short-term debt securities, bonds, real estate, etc. In practice, it is measured using the equity market only.
[47] Excludes the anomalous market "boom and bust"/"Nortel effect" period.

When interest rates (as proxied by government bond returns) are added as a further explanator of the observed volatility in utility stock prices, significantly more of the volatility is explained (55% versus 43%).

The second regression equation suggests that utility shares have had approximately 50% of the volatility of the equity market as well as approximately 50% of the volatility of the bond market, consistent with utility common stocks' interest sensitivity. Using an expected equity market return of 12.0%, and a long Canada bond return (equal to the forecast yield) of 5.25%, the equation indicates an expected utility return of 10.8%. When the 10.8% utility return is expressed as an equity risk premium relative to the 5.25% long Canada yield, the indicated relative risk adjustment is close to 80-85%.[48]

iv. Use of Adjusted Betas

The deficiencies in "raw" betas can be mitigated by using adjusted betas. Adjusting betas entails moving betas above and below the market mean of 1.0 toward the market mean. The adjustment that is used by the major commercial suppliers of betas uses a formula that gives approximately two-thirds weight to the stock's own beta and one-third weight to the market mean beta of 1.0.[49] Use of adjusted betas implicitly recognizes that "raw" utility betas are not adequate explanators of utility returns; for example, they do not capture utilities' interest rate sensitivity. The objective of the relative risk adjustment is to predict the investors' required return. Adjusted betas provide a better correlation between utility risk and return than "raw" betas.

[48] $\frac{10.8\% - 5.25\%}{12.0\% - 5.25\%} = .82.$

[49] *Value Line*, Bloomberg and Merrill Lynch all publish adjusted betas. Their formulas for adjusting the calculated raw betas are slightly different, but all give approximately two-thirds weight to the "raw" beta of the specific stock and one-third weight to the market beta of 1.0.

Table 12 below summarizes the average of the adjusted five-year betas ending in 1993 to 1999 (pre-"Nortel effect") and those calculated over the longest recent period excluding the Nortel effect (30-month period 7/2002-12/2004).[50]

Table 12

Canadian Utility Adjusted Betas			
Periods	**Individual Canadian Utilities (Median)**	**TSE 300 Gas/Electric Utility Index**	**S&P/TSX Utilities Index**
Five-Year Betas ended 1993 to 1998 (Average)	0.64	0.66	0.73
30-Month Betas (7/2002 to 12/2004)	0.61	N/A	0.70

Source: Schedules 11 and 14.

The adjusted betas indicate a relative risk adjustment of approximately 0.60-0.70.

v. Relative Risk Adjustment

Based on the preceding analysis of standard deviations of market returns and betas, in my opinion, the relative risk adjustment for a benchmark low risk utility is approximately 0.65.

d. Benchmark Utility Equity Risk Premium

I estimated the equity market risk premium at a long Canada yield of 5.25%, at approximately 6.0-6.5%. At an equity market risk premium of 6.0-6.5% and a relative risk adjustment of 0.65, the indicated benchmark utility equity risk premium is 4.0%.

[50] Adjusted utility beta = 2/3 ("raw" beta) + 1/3 (market beta of 1.0); the 7/2002-12/2004 "raw" betas were calculated excluding Nortel from the S&P/TSX Composite Index (see Schedule 14).

4. Utility-Specific Equity Risk Premium Analysis

The risk-adjusted equity market risk premium test (discussed above) estimates the required utility equity risk premium indirectly. That is, it estimates an equity risk premium for the equity market as a whole, then adjusts it for the relative risk of a benchmark utility. The following analyses estimate the equity risk premium for a benchmark utility directly, by analyzing utility equity return data. The analyses below focus on both long-term historic utility equity risk premiums and an equity risk-premium test derived from forward-looking monthly estimates of the required utility equity return.

The following two sections provide the results of that analysis.

a. Historic Utility Equity Risk Premiums

The historic experienced returns for utilities provide an additional perspective on a reasonable expectation for the forward-looking utility equity risk premium. Reliance on achieved equity risk premiums for utilities as an indicator of what investors expect for the future is based on the proposition that over the longer term, investors' expectations and experience converge. The more stable an industry, the more likely it is that this convergence will occur.

Over the longer-term (1956-2004),[51] achieved utility equity risk premiums were 3.8-4.4% for Canadian gas and electric utilities, based on both geometric and arithmetic average returns.[52] For U.S. gas utilities, the corresponding historic equity risk premiums averaged approximately 5.4-6.0% over the entire post-World War II period (1947-2004). The corresponding risk premiums for U.S. electric utilities were 4.3-5.0% (Schedule 16). The historic equity risk premiums for both Canadian and U.S. utilities support an expected equity risk premium

[51] The longest period for which Canadian utility data are available from the TSE.
[52] Based on the Gas/Electric Index of the TSE 300 (through 1987) and on the S&P/TSX Utilities Index from 1988-2004.

estimate for a benchmark Canadian utility in the range of 4.25-5.0%, or approximately 4.75%.

b. DCF-Based Equity Risk Premium Test

i. Derivation of Model

A forward-looking equity risk premium test was also performed, using the discounted cash flow model (DCF) to estimate expected utility returns over time. The discounted cash flow model, discussed in more detail in Section IV.D, estimates the utility required return on equity at a point in time. The required return on equity is estimated as the dividend yield on the stock plus the expected growth in dividends over the longer-term. The very nature of the discounted cash flow estimate of the required return lends itself to an analysis of the relationship between utility equity risk premiums and interest rates. Each DCF "point in time" estimate of the required return can be matched with a corresponding "point in time" interest rate. The difference between the two is thus an indicator of the required utility equity risk premium at a given level of interest rates.

Monthly cost of equity estimates were constructed using the DCF model for a sample for the period 1993-2004.[53] The DCF costs of equity were estimated as the sum of the consensus of analysts' forecasts of long-term normalized earnings growth,[54] plus the expected dividend yield. The equity risk premium is equal to the difference between the average DCF cost of equity for the sample and the corresponding 30-year Treasury yield for the period.[55]

[53] Subsequent to Open Access implemented via FERC Order 636.
[54] The consensus forecasts are obtained from I/B/E/S, a leading provider of earnings expectations data. The data are collected from over 7,000 analysts at over 1,000 institutions worldwide, and cover companies in more than 60 countries.
[55] A full explanation of the sample selection and the construction of the model is found in Appendix B.

ii. Choice of Utility Sample

In conducting this test, I relied on U.S. local gas distribution utilities (LDCs) as a proxy for a benchmark low risk utility. The reasons for choosing U.S. LDCs are as follows:

First, there are an insufficient number of forward-looking estimates of long-term growth rates for Canadian utilities that would permit the creation of a consistent series of DCF costs of equity and corresponding risk premiums from Canadian data. A consensus estimate of investors' growth expectations is key to the application of the discounted cash flow model.

Second, U.S. and Canadian utilities are reasonable proxies for one another, particularly in today's global capital market. Although there may be company-specific differences in business and financial risk, the impact of those differences is minimized by selecting only relatively pure-play LDCs with similar debt ratings to the typical Canadian utility.

Third, relatively pure-play LDCs were selected for this specific purpose because they have not experienced the same degree of restructuring as other regulated industries in the U.S., e.g., electric utilities. Reliance on relatively pure-play gas distribution utilities mitigates the impact on the required returns of changes in the business risk environment, and thus allows the relationship between the utility equity risk premium and interest rates to be isolated.

Fourth, the selected U.S. LDCs are of relatively low business risk, on average, of a similar level to that of an average risk investor-owned Canadian utility.

iii. Investor Growth Expectations

In the application of the DCF-based equity risk premium test, the Commission, in its 1999 decision, raised the issue of the reliability of the earnings growth forecasts as a measure of investor expectations. The issue of reliability arises because of the documented optimism of analysts' forecasts historically. However, as long as investors have believed the forecasts, and have priced the securities accordingly, the resulting DCF costs of equity are an unbiased estimate of investors' expected returns. That proposition can be tested indirectly. For the sample of LDCs used in the DCF-based risk premium test, the average expected long-term growth rate, as estimated using analysts' forecasts, for the entire 1993-2004 period of analysis was 5.2%. That growth rate is quite similar to the long-term expected nominal growth in the economy as a whole over the same period.[56] An expected growth rate close to that of the economy as a whole is not out-of-line with the level of growth investors in a relatively mature industry like gas distribution could reasonably expect over the longer-term.

A second means of assessing the reasonableness of the forecast growth rates is to compare the resulting DCF costs to the returns that have been allowed for U.S. LDCs over the same period. Since the DCF test has traditionally been the principal model relied on by U.S. regulators, the allowed returns for U.S. gas LDCs should track their DCF costs of equity. Moreover, since different analysts and regulators rely on different DCF models and measures of growth expectations, the allowed returns will reflect the results of the various DCF models and measures of growth (e.g., constant growth versus multi-stage models; forecast versus historic growth rates). Consequently, the allowed returns should not, in the aggregate, represent either an upwardly or downwardly biased measure of the utility cost of equity.

[56] The average expected long-term nominal rate of growth in the U.S. economy, based on consensus forecasts (Blue Chip *Economic Indicators*, March editions, 1993-2004), has been 5.3% over the same period covered by the DCF-based risk premium test.

The average DCF cost in my DCF-based risk premium model from 1993-2004 was 10.2%; the average allowed return for U.S. gas LDCs from 1993-2004 was approximately 11.1%[57] The actual allowed returns for LDCs were, on average, some 90 basis points higher than the indicated DCF costs of equity in my equity risk premium study. On this basis, there is no reason to conclude that the DCF estimates in the DCF-based equity risk premium test are upwardly biased.

iv. DCF-Based Utility Equity Risk Premium

For the sample of U.S. LDCs, the DCF-based risk premium test indicates an average risk premium over the 1993-2004 period of 4.2% (Schedule 17); the corresponding average long-term government bond yield was 6.0%, close to the longer-term forecasts for both Canada and the U.S, but higher than the near-term forecast yield of 5.25%.

The data suggest that there has been a relationship between the risk-free rate (as proxied by the long-term government bond yield) and utility equity risk premiums. To test the relationship between interest rates and risk premiums, a simple regression analysis between the monthly 30-year Treasury yields and the corresponding equity risk premiums was conducted. The indicated relationship was:

$$\begin{aligned} \text{Equity Risk Premium} &= 8.20 - 0.66 \left\{ \text{30-Year Treasury yield} \right\} \\ \text{t-statistic} &= -11.4 \\ R^2 &= 48\% \end{aligned}$$

[57] Regulatory Research Associates, *Regulatory Focus: Major Rate Case Decisions, January 1990-December 2004*.

At the forecast 30-year government bond yield of 5.25%, the indicated utility equity risk premium is 4.7%.

I also tested the relationship between the spreads between long-term utility and government bond yields in conjunction with the change in the yield on long-term government bond yields. As indicated in Section IV.B.5.b, the magnitude of the spread between corporate bond yields and government bond yields is frequently used as a proxy for changes in investors' perception of risk.[58]

To estimate the relationship, I performed a regression analysis over the 1993-2004 period using the utility risk premium[59] as the dependent variable, with the corresponding long-term government bond yield and spread between long-term high grade utility[60] and government bond yields as the two independent variables.

The analysis indicated the following:

LDC Risk Premium = 5.3 - .37 TY + .81 Spread

where,

TY = 30-year Treasury Yield

Spread = Spread between High Grade Utility Bond Yields and 30-year Treasury Yields

Thus, the data indicate that, while the utility risk premium has been negatively related to the level of government bond yields, it has been positively related to the spread between utility bond yields and government bond yields.[61]

[58] Or, alternatively, willingness to take risks.
[59] Measured, as in the prior analysis, as the DCF cost of equity minus the long-term government bond yield.
[60] Based on Moody's long-term A rated utility bond index.
[61] Statistics for the equation:

R^2	68.0%
t-statistics:	
Long-term bond yield:	-6.8
Utility/government bond yield spread:	9.5

The spread between 30-year Canadian A-rated utility bonds and 30-year Canadas was approximately 120 basis points at the end of May 2005. Using a forecast long Canada yield of 5.25% and an A-rated utility bond/long Canada spread of 120 basis points, the indicated utility risk premium is 4.3%.

Based on both the single and two independent variable approaches, the DCF-based risk premium test results indicate a utility equity risk premium in the range of 4.3-4.7%, or a mid-point of 4.5%, at a long-term government bond yield of 5.25%.

5. Equity Risk Premium Test "Bare-Bones" Cost of Equity

The estimated equity risk premiums based on the three methodologies are as follows:

Risk Premium Test	Risk Premium
Risk-Adjusted Equity Market	4.0%
Historic Utility	4.75%
DCF-Based	4.5%

On balance, the three approaches indicate an equity risk premium applicable to a benchmark Canadian utility of 4.0-4.75%. At a forecast long Canada yield of 5.25%, the "bare-bones" cost of equity is 9.25-10.0%. An allowance for financing flexibility needs to be added to this result.

6. Financing Flexibility Allowance

An adjustment to the equity risk premium test result for financing flexibility is required because the measurement of the return requirement based on market data results in a "bare-bones" cost. It is “bare-bones” in the sense that, theoretically, if this return is applied to (and earned on) the book equity of the rate base (assuming the expected return corresponds to the approved return), the market value of the utility would be kept close to book value.

The financing flexibility allowance is an integral part of the cost of capital as well as a required element of the concept of a fair return. The allowance is intended to cover three distinct aspects: (1) flotation costs, comprising financing and market pressure costs arising at the time of the sale of new equity; (2) a margin, or cushion, for unanticipated capital market conditions; and (3) a recognition of the "fairness" principle. Fairness dictates that regulation should not seek to keep the market value of a utility stock close to book value when industrials of comparable investment risk have been able to consistently maintain the real value of their assets considerably above book value.

The financing flexibility allowance recognizes that return regulation remains, fundamentally, a surrogate for competition. Competitive industrials of reasonably similar risk to utilities have consistently been able to maintain the real value of their assets significantly in excess of book value, consistent with the proposition that, under competition, market value will tend to equal the replacement cost, not the book value, of assets.

Utility return regulation should not seek to target the market/book ratios achieved by such industrials, but, at the same time, it should not preclude utilities from achieving a level of financial integrity that gives some recognition to the longer run tendency for the market value of industrials to equate to the replacement cost

of their productive capacity. This is warranted not only on grounds of fairness, but also on economic grounds, to avoid misallocation of capital resources. To ignore these principles in determining an appropriate financing flexibility allowance is to ignore the basic premise of regulation. The adjustment for financing flexibility recognizes that the market return derived from the equity risk premium test needs to be translated into a return that is fair and reasonable when applied to book value.

This premise was recognized by the Independent Assessment Team (IAT), retained by the Alberta Department of Resource Development to determine the cost parameters for the Power Purchase Arrangement (PPAs) for existing regulated generating plants, concluded in its 1999 report, regarding flotation costs,

> "This is sometimes associated with flotation costs but is more properly regarded as providing a financial cushion which is particularly applicable given the use of historic cost book values in traditional rate of return regulation in Canada. No such adjustment has ever been made in UK utility regulation cases which tend to use market values or current cost values." [62]

The Report of the IAT was accepted by the Alberta Energy and Utilities Board in Decision U99113 (December 1999).

At a minimum, the financing flexibility allowance should be adequate to allow a utility to maintain its market value, notionally, at a slight premium to book value, i.e., in the range of 1.05-1.10. At this level, a utility will be able to recover actual financing costs, as well as be in a position to raise new equity (under most market conditions) without impairing its financial integrity. A financing flexibility

[62] *Independent Assessment Team Power Purchase Arrangement Report*, July 1999, page XLV, footnote 99.

allowance adequate to maintain a market/book in the range of 1.05-1.10 is approximately 50 basis points.[63]

The concept of a financing flexibility or flotation cost allowance has been accepted by most Canadian regulators. In both G-80-99 and G-35-94, the BCUC explicitly included a 50 basis point flotation cost adjustment when it set the benchmark return on equity.

7. Equity Risk Premium Test Results

The indicated return on equity for a benchmark average risk utility using the equity risk premium approach is in the range of 9.75-10.5%. The following table summarizes the components of the test.

Table 13

Risk-Free Rate	5.25%
Equity Risk Premium	4.0-4.75%
"Bare-Bones" Cost of Equity	9.25-10.0%
Financing Flexibility Allowance	0.50%
Return on Equity	9.75-10.5%

[63] The financing flexibility allowance is estimated using the following formula developed from the discounted cash flow formula:

$$\text{Return on Book Equity} = \frac{\text{Market/Book Ratio x "bare-bones" cost of equity}}{1 + [\text{retention rate } (M/B - 1.0)]}$$

For a market/book ratio of 1.075 (mid-point of 1.05 and 1.10), assuming a dividend payout ratio of 65% and a cost of equity of 10.0%, the indicated ROE is:

$$\text{ROE} = \frac{1.075 \times 10\%}{1 + [.35\ (1.075 - 1.0)]}$$

$$\text{ROE} = 10.5\%$$

The difference between the ROE and the "bare-bones" cost of equity of 50 basis points is the financing flexibility allowance.

D. DISCOUNTED CASH FLOW TEST

1. Conceptual Underpinnings

The discounted cash flow approach proceeds from the proposition that the price of a common stock is the present value of the future expected cash flows to the investor, discounted at a rate that reflects the riskiness of those cash flows. If the price of the security is known (can be observed), and if the expected stream of cash flows can be estimated, it is possible to approximate the investor's required return (or capitalization rate) as the rate that equates the price of the stock to the discounted value of future cash flows.

Although it has flaws, the DCF model has one distinct advantage over risk premium estimates, particularly those made using the CAPM. It allows the analyst to directly estimate the utility cost of equity. In contrast, the CAPM (or more generally the equity risk premium test as applied by Canadian regulators) indirectly estimates the cost of equity. In light of the recent volatility in the equity markets, and rapid shifts in investors' risk perceptions, it is important to rely on multiple approaches to estimating the cost of capital. The DCF model provides a widely used alternative to CAPM.

The principal issues in the application of the discounted cash flow test are:

a. The determination of the appropriate form or forms of the model to be applied.
b. The selection of a sample of utilities of reasonably comparable risk to the benchmark low risk utility to which the model or models will be applied.
c. The determination of the appropriate measure of investor growth expectations to be utilized.

2. DCF Models

There are multiple versions of the discounted cash flow model available to estimate the investor's required return. An analyst can employ a constant growth model or a multiple period model to estimate the cost of equity. The constant growth model rests on the assumption that investors expect cash flows to grow at a constant rate throughout the life of the stock. Similarly, a multiple period model rests on the assumption that growth rates will change over the life of the stock. In determining the DCF cost of equity for a benchmark utility, I utilized both a constant growth and a two-stage model.[64]

3. Proxy Utilities

The discounted cash flow test was applied to a sample of relatively low risk U.S. gas and electric utilities that are intended to serve as a proxy for the Canadian benchmark utility.[65]

4. Investors' Growth Expectations

The growth component of the DCF model is an estimate of what investors expect over the longer-term. For a regulated utility, whose growth prospects are tied to allowed returns, the estimate of growth expectations is subject to circularity because the analyst is, in some measure, attempting to project what returns the regulator will allow, and the extent to which the utilities will exceed or fall short

[64] The two-stage model is a form of multiple period model. A complete description of the construction of the models is found in Appendix C.

[65] The reasons for reliance on U.S. utilities are identical to those set forth in Section IV.C.4.b. However, a broader sample of utilities was employed for purposes of applying the DCF test than for the DCF-based equity risk premium test. The DCF-based equity risk premium test estimates the relationship between the utility equity risk premium and interest rates over time. Consequently, it is necessary to focus on utilities that remained relatively "pure-play" over the test period. The DCF test conducted in this section estimates the current cost of equity; the suitability of a utility as a proxy for the benchmark low risk utility depends only on its current risk profile. Selection criteria are provided in Appendix C.

of those returns. To mitigate that circularity, it is important to rely on proxies, rather than the subject company.

Further, to the extent feasible, one should rely on estimates of longer-term growth readily available to investors, rather than superimpose on the analysis one's own view of what growth should be. Thus, in applying the DCF test, I relied solely on published forecast growth rates that are readily available to investors. The reasons for sole reliance on forecast growth rates are as follows:

First, various studies have concluded that analysts' forecasts are a better predictor of growth than naïve forecasts equivalent to historic growth. Moreover, analysts' forecasts have been shown to be more closely related to investors' expectations than historic growth rates.[66]

[66] Empirical studies that conclude that investment analysts' growth forecasts serve as a better surrogate for investors expectations than historic growth rates include: Lawrence D. Brown and Michael S. Rozeff, "The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from Earnings", *The Journal of Finance*, Vol. XXXIII, No. 1, March 1978; Dov Fried and Dan Givoly, "Financial Analysts Forecasts of Earnings, A Better Surrogate for Market Expectations", *Journal of Accounting and Economics,* Vol. 4 (1982); R. Charles Moyer, Robert E. Chatfield, Gary D. Kelley, "The Accuracy of Long-Term Earnings Forecasts in the Electric Utility Industry", *International Journal of Forecasting* Vol. I (1985); Robert S. Harris, "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return", *Financial Management*, Spring 1986, and, James H. Vander Weide and William T. Carleton, "Investor Growth Expectations: Analysts vs. History", *The Journal of Portfolio Management*, Spring 1988; David Gordon, Myron Gordon and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

The Vander Weide and Carleton study cited

> "found overwhelming evidence that the consensus analysts' forecast of future growth is superior to historically oriented growth measures in predicting the firm's stock price [and that these results] also are consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy-and-sell decisions."

The Gordon, Gordon and Gould study concluded,

> "…the superior performance by KFRG [forecasts of [earnings] growth by securities analysts] should come as no surprise. All four estimates [securities analysts' forecasts plus past growth in earnings and dividends and historic retention growth rates] rely upon past data, but in the case of KFRG a larger body of past data is used, filtered through a group of security analysts who adjust for abnormalities that are not considered relevant for future growth."

Second, to the extent history is relevant in deriving the outlook for earnings, it should already be reflected in the forecasts. Therefore, reliance on historic growth rates is at best redundant, and, at worst, potentially double counting growth rates which are irrelevant to future expectations.

Third, to the extent that restructuring in the utility industries altered investors' growth expectations relative to history, historical growth rates are highly suspect as a measure of investor expectations.

Fourth, reliance on historic growth rates to measure investor expectations to some extent renders the replication of that growth a self-fulfilling prophecy. Reliance on forecast growth rates avoids the circularity inherent in historic growth rates.

In Section IV.C.4.b.*iii*, in my application of the DCF-based equity risk premium test, I addressed the Commission's concern in Decision G-80-99 that growth forecasts are vulnerable to analyst optimism. The same discussion applies here. In addition, in my application of the discounted cash flow test, I have addressed the Commission's concern directly by incorporating *Value Line* forecasts of earnings growth in addition to the I/B/E/S[67] consensus forecasts. As an independent research firm, *Value Line*, has no incentive to "inflate" its estimates of earnings growth in an attempt to make stocks more attractive to investors, as analysts associated with investment banking firms might have. Therefore, incorporating *Value Line* estimates of earnings growth is a means of assessing the reasonableness of the results obtains through use of the I/B/E/S consensus estimates.

The median *Value Line* expected long-term earnings growth rate for the utility sample was 4.5%; the corresponding I/B/E/S forecast was also 4.5% (see Schedules 20 and 21). This comparison suggests no upward bias in the I/B/E/S forecasts.

[67] As noted earlier, I/B/E/S is a leading provider of earnings expectations data.

5. DCF "Bare Bones" Cost of Equity

The results of the constant growth and two-stage DCF models indicate a required "bare-bones" return on equity of approximately 9.25%, as delineated in detail in Appendix C, and shown on Schedules 20-22.

6. The DCF Test and the Fair Return on Equity

The 9.25% DCF cost represents the return investors expect to earn on the current market value of their utility common equity investments. It is not, however, the return that investors expect the utilities to earn on the book value of their common equity. *Value Line*, which publishes its projections of utility ROEs quarterly, anticipates that the return on average common equity for the sample of utilities over the period 2008-2010 will be approximately 11.8% (Schedule 19).

There is a "disconnect" in logic if investors expect the allowed return on equity to be equal to the DCF cost of equity. When the market value deviates materially from the original cost book value to which the allowed return is applied. This has clearly been the case during the last business cycle. The average market/book ratio of the U.S. utility sample from 1993-2004 was approximately 170-175% (Schedule 19).

To illustrate the problem, assume that a utility has a market/book ratio of 175%. If the investor now expects the utility to earn a return on book value equal to the DCF cost of equity, the utility stock price would decline to book value. The investor then experiences a capital loss of over 40%. The idea that an investor is willing to pay a price equal to 175% of book value in order to see the market value of his investment drop by over 40% is illogical.

There is no reason to conclude that market value should equal book value when one recognizes that regulation is intended to emulate competition. Under competition, equity market values tend to gravitate toward the replacement cost of the underlying assets. Absent inflation, the market value of firms operating in a competitive environment would tend to equal their book value or cost. This is due to the proposition that, if the discounted present value of expected returns (market value) exceeds the cost of adding capacity, firms will expand until an equilibrium is reached, when the market value equals the replacement cost of the productive capacity of the assets. However, the fact that inflation has occurred changes the above analysis. With inflation, under competition, the market value of a firm trends toward the current cost of its assets. The book value of the assets in contrast, reflects the historic depreciated cost of the assets. Since there have been moderate to relatively high levels of inflation over the past two business cycles, one would expect the market value of utilities to deviate systematically from the book value.

In principle, for a market-derived cost of equity (e.g., derived via the DCF or equity risk premium test) to produce a return compatible with the premise that regulation is a surrogate for competition, the cost of equity should be adjusted to reflect the replacement cost/book value ratio. Economic theory indicates that the replacement cost/book value ratio should correspond to the long-run equilibrium market/book ratio.[68] The replacement cost/book value ratio is, in turn, an estimate of the expected long-run equilibrium market value/book ratio that should be anticipated under competition.

[68] By repricing the equity of the utilities for past inflation, an approximation of the replacement cost can be made. To reprice the equity, each annual increment to common equity must be increased to reflect inflation experienced from the time the equity was added to the present. The total repriced equity is a proxy for replacement cost. The total repriced equity is then compared to the original cost book value of the equity to arrive at an estimate of the replacement cost/book value ratio. The resulting replacement cost/book value for the sample of utilities was 1.6, well in excess of 1.0 (See Schedule 19). Adjusting the DCF cost of equity of 9.25% to a return compatible with a long-run market/book ratio of 1.6, using the *Value Line* forecast earnings retention rate of approximately 35% (see Schedule 19), the indicated return on book equity would be close to 12.25%.

To mitigate the problem created by the divergence between market and book values, at a minimum, the DCF test result should be augmented by the same allowance for financial flexibility as applicable to the equity risk premium test results, i.e., a minimum allowance of 50 basis points. An adjustment to the DCF cost of equity of 9.25% for financing flexibility results in a return on book equity of 9.75%. Thus, the DCF test indicates a return on equity for a benchmark low risk Canadian utility of approximately 9.75%.

E. COMPARABLE EARNINGS TEST

1. Conceptual Underpinnings

The comparable earnings test provides a measure of the fair return based on the concept of opportunity cost. Specifically, the test arises from the notion that capital should not be committed to a venture unless it can earn a return commensurate with that available prospectively in alternative ventures of comparable risk. Since regulation is a surrogate for competition, the opportunity cost principle entails permitting utilities the opportunity to earn a return commensurate with the levels achievable by competitive firms facing similar risk. The comparable earnings test, which measures returns in relation to book value, is the only test that can be directly applied to the equity component of an original cost rate base without an adjustment to correct for the discrepancy between book values and current market values. Neither the equity risk premium results nor the DCF results, if left without adjustment, recognizes the discrepancy.

The comparable earnings test is an implementation of the comparable earnings standard, as distinguished from the cost of attracting capital standard. The comparable earnings standard recognizes that utility costs are measured in vintaged dollars and that rates are based on accounting costs, not economic costs. In contrast, the cost of attracting capital standard relies on costs expressed in

dollars of current purchasing power, i.e., a market-related cost of capital. In the absence of experienced inflation, the two concepts would be quite similar, but the impact of inflation has rendered them dissimilar and distinct.

The concept that regulation is a surrogate for competition may be interpreted to mean that the combination of an original cost rate base and a fair return should result in a value to investors commensurate with that of competitive ventures of similar risk. The fact that an original cost rate base provides a starting point for the application of a fair return does not mean that the original cost of the assets is a measure of their fair value. The concept that regulation is a surrogate for competition implies that the regulatory application of a fair return to an original cost rate base should result in a value to investors commensurate with that of similar risk competitive ventures. The comparable earnings standard, as well as the principle of fairness, suggest that, if competitive industrial firms facing a level of total risk similar to utilities are able to maintain the value of their assets considerably above book value, the return allowed to utilities should not seek to maintain the value of utility assets at book value. It is critical that the regulator recognize the comparable earnings standard when setting a just and reasonable return.

The comparable earnings test remains the only test that explicitly recognizes that, in the North American regulatory framework, the return is applied to an original cost (book value) rate base. The persistence of moderate inflation continues to create systematic deviations between book and market values. Application of a market-derived cost of capital to book value ignores that distinction. To illustrate, if the market value of an investment is $15 and the required return is 10%, the return, in dollars, expected by investors is $1.50. However, regulatory convention applies the market-derived return to the book value of the investment. If the book value of the investment is $10.00, application of a 10% return to the book value will result in a return, in dollars, of only $1.00. The cost of attracting capital tests, i.e., equity risk premium and discounted cash flow, do not make any allowance

for the discrepancy between the return on market value and the corresponding fair return on book value. The comparable earnings test, however, does. It applies "apples to apples", i.e., a book value-measured return is applied to a book value-measured equity investment.

Depending on the economic/capital market environment, the reliability of the various tests used to estimate the fair return will vary. In the early 1990s, there was a dramatic shift in the inflationary environment. In combination with the restructuring of Canadian industry, and a prolonged recession, the reliability of the comparable earnings test was reduced. At that time, the fundamental changes in the economy rendered past earnings as an estimate of future earnings problematic.

Fourteen years have now transpired since the low inflation targets were adopted by the government; at no time during that period has the annual inflation rate exceeded three percent. In addition, there have been ten years of experience (1994-2004) since the industrial restructuring in Canada. A full business cycle has transpired, a cycle characterized, on average, by moderate growth and low to moderate inflation. The economic fundamentals of that cycle are similar to those expected for the next cycle. Under current economic circumstances, the usefulness of the comparable earnings test has been restored.

In its 1999 decision, the Commission expressed concern with (1) the use of accounting data in the comparable earnings test and (2) with sample selection. These two concerns are addressed below

a. Use of Accounting Data

The comparable earnings method is used to estimate the prospective rate of return expressed in relation to book values rather than the prospective rate of return expressed in relation to market values. It is, by necessity, calculated using

accounting data. The comparable earnings method, using the reported earnings on book value, provides a means by which the broad trends in corporate profits can be pushed down to the level of comparable risk companies.

Much of the concern surrounding the use of accounting data at the time of Order G-80-99 can be traced to problems associated with the wide-scale restructuring of the Canadian economy in the early part of the last decade. As noted in Section IV.A, a full cycle of earnings subsequent to restructuring is now available, which permits a reliable application of the comparable earnings method. However, recognizing that non-recurring items for individual companies could impact the sample average, the focus is on the sample median values, which mitigates the effect of any potential outliers.

b. Sample Selection

The Commission's concern that the results of the comparable earnings test are sensitive to the sample selection is addressed through the designation of the selection criteria. The selection of a sample of companies from industrial sectors that is comparable to a benchmark utility must be made through the application of clearly defined, objective criteria designed to produce a low risk sample. By limiting the criteria to market factors (i.e., no accounting measures of risk), the potential for selection bias is eliminated. The selection criteria are set out in Appendix D.

2. Application of Comparable Earnings Test to Canadian Industrials

The principal issues in the application of the comparable earnings test are:

a. The selection of a sample of industrials of reasonably comparable risk to a benchmark low risk utility.

b. The selection of an appropriate time period over which returns are to be measured in order to estimate prospective returns.

c. The need for any adjustment to the "raw" comparable earnings results if the selected industrials are not of precisely equivalent risk to the low risk benchmark utility.

The application of the comparable earnings test first requires the selection of a sample of industrials of reasonably comparable risk to a benchmark Canadian utility. The selection should conform to investor perceptions of the risk characteristics of utilities, which are generally characterized by relative stability of earnings, dividends and market prices. These were the principal criteria for the selection of the Canadian industrial companies (from consumer-oriented industries), resulting in a sample of 17 companies.[69]

Next, since industrials' returns on equity tend to be cyclical, the selection of an appropriate period for measuring industrial returns must be determined. The period selected should encompass an entire business cycle, covering years of both expansion and decline. That cycle should be representative of a future normal cycle, e.g., similar in terms of inflation and real economic growth. The period 1993-2004 provides a reasonable proxy for a future business cycle. The experienced returns on equity of the sample of 17 industrials over this period were in the approximate range of 13.0-13.5% (see Appendix D and Schedule 24).

The final step is to assess whether or not there is a need to adjust the "raw" comparable earnings results to reflect the differential risk of LDCs relative to the selected industrials. The comparative risk data indicate, on balance, the Canadian industrials and utilities are in a similar investment risk class. However, the industrials' one-notch lower debt ratings indicate that the industrials are of slightly higher investment risk than a benchmark utility (see Appendix D and Schedule 23). To recognize the industrials' marginally higher risk, the

[69] See Appendix D.

comparable earnings test, applied to a benchmark Canadian utility, should be interpreted as indicating a return of no less than 13.0%.

3. Application of Comparable Earnings Test to U.S. Low Risk Industrials

Due to the relatively small size of the Canadian sample – in large part a function of the size and make-up of the Canadian equity market – I also selected a sample of low risk U.S. industrials to serve as a check on the reasonableness of the Canadian results. The selection criteria were similar to those used for the Canadian industrial sample (see Appendix D). The greater breadth of the U.S. market allowed the selection of a sample of close to 200 companies in the same stable industries used to select the Canadian industrials. The experienced returns of the U.S. industrials were in the range of 14.0-14.75% (see Appendix D and Schedule 26). The comparative risk data indicate that the U.S. industrials are of similar risk to the Canadian industrials (see Schedule 25), and thus of slightly higher risk than a benchmark low risk Canadian utility. The returns of the U.S. sample of industrials underscore the reasonableness of the comparable earnings results as applied to the sample of Canadian industrials.

F. SUMMARY OF CONCLUSIONS ON FAIR RETURN ON EQUITY

The results of the three tests used to estimate a reasonable return on equity for a benchmark Canadian utility are summarized below:

Table 14

Test	"Bare-Bones" Cost of Equity	Fair Return on Equity
Equity Risk Premium	9.25-10.0%	9.75-10.5%
Discounted Cash Flow	9.25%	9.75%
Comparable Earnings	N/A	No less than 13.0%

In arriving at a reasonable return for a benchmark utility, I have given primary weight to the cost of attracting capital, as measured by both the equity risk premium and DCF tests. The "bare-bones" cost of attracting capital based on these two tests is approximately 9.5%. Including the allowance for financing flexibility, the indicated return on equity is 10.0%. However, the comparable earnings test is also entitled to significant weight when setting a fair return that balances both ratepayer and shareholder interests. Based on all three test results, a fair return for a benchmark utility is 10.5%.

V. AUTOMATIC ADJUSTMENT MECHANISM FOR RETURN ON EQUITY

The Commission has had a mechanism in place to annually adjust allowed returns on equity since 1994. I support the continuation of such a mechanism. An automatic adjustment mechanism for setting returns on equity reduces the regulatory burden which annual return on equity analyses impose. Further, it results in increased predictability of the allowed returns and avoids any potential arbitrariness of the outcome.

There are, however, some disadvantages. The key disadvantage is that the flipside of greater predictability is the constraint placed on the regulator's flexibility in setting the allowed return, which may have adverse consequences for a utility in areas such as financing flexibility. Nevertheless, if there are adequate safeguards which permit the formula to be revisited or the utility to seek relief in circumstances of financial duress, I concur, in principle, with the implementation of a formula.

I condition my concurrence with "in principle" since the validity of any automatic adjustment formula depends on two key factors: (1) the reasonableness of the point of departure, that is, the benchmark return on equity, and (2) the reasonableness of the formula itself.

The current formula utilized by the Commission changes the allowed return by 100% of the change in forecast long Canada yields when long Canada bond yields are below 6.0% and changes the allowed return by 80% of the change in forecast long Canada bond yields when long Canada bond yields are between 6.0% and 8.0%. In my opinion, the different sliding scales for interest rates above and below 6.0% are not warranted and unfairly penalize the British Columbia utilities. There is no quantitative basis for the asymmetry of the formula, and its results put

the British Columbia utilities at a distinct disadvantage relative to their peers. In its 1999 decision, the Commission implemented the 80% sliding scale at interest rates above 6% because "failing to have a sliding scale within that range could produce inadequate returns for the Utilities and result in capital attraction difficulties." Unfortunately, it is the 100% sliding scale at low levels of interest rates rather than the 80% sliding scale at higher (above 6%) levels of interest rates that is more likely to result in inadequate returns and capital attraction difficulties.

To be able to demonstrate the relationship between interest rates and equity risk premiums with any accuracy, it is necessary to develop a time series of costs of equity which can then be compared with the corresponding yield on long Canada bonds. The form of the equity risk premium test that has been adopted by Canadian regulators[70] does not lend itself to estimating the relationship. The derivation of the results is largely based on the assumption that the equity risk premium is the same at different levels of interest rates, i.e., that there is a one-for-one correlation between the equity market return and the risk-free rate.[71] In other words, the application of the test has generally entailed estimating a long term average market risk premium.

The construction of the DCF-based equity risk premium test, on the other hand, allows the relationship between the utility cost of equity and interest rates to be estimated. As discussed in Section IV.C.4.b, when the utility/government bond yield spread is explicitly accounted for, the relationship between the utility DCF cost of equity and long-term government bond yields has been, on average, an approximately 60 basis point change in the utility cost of equity for every one percentage point change in long-term government bond yields. The estimated relationship implies that the utility cost of equity is less sensitive to changes in government bond yields than implied by the Commission's current automatic

[70] The equity risk premium test that has been widely adopted by Canadian regulators is akin to, or a variant of, the CAPM.
[71] That assumption, however, is in direct conflict with a basic underlying premise of the Capital Asset Pricing Model: the risk-free rate and the expected return on the market are completely uncorrelated.

adjustment formula. In other words, the application of an 80% sliding scale overstates the change in the cost of equity that corresponds to a change in long-term government bond yields.

Focusing specifically on the Canadian equity markets the ratio of the utility dividend yield to the long-term Canada bond yield provides an indicator of the relationship between the utility cost of equity and the long-term government bond yields.

On average over the period 1996-2004, the average ratio of the dividend yields of the six major publicly-traded utilities and pipelines[72] to the long Canada bond yields has been approximately 75% (see Schedule 27). For the dividend to bond yield ratio to remain at 75%, the utility dividend yield must change by 75% of the change in the long Canada bond yield. Using only the change in dividend yields as an indicator of the cost of equity/interest rate relationship ignores any corresponding changes in expected growth rates. Nevertheless, there is no reason to presume that the long-term expected growth rates of utilities vary in a systematic fashion with changes in long term government bond yields. Thus, the relationship between utility dividend yields and long Canada bond yields is itself an indicator of the change in the utility cost of equity due to changes in the risk-free rate.

The 75% "sliding scale" suggested by the dividend yield/bond yield relationship has support from the impact of the different personal taxation rates of dividends, capital gains and interest. Schedule 28 demonstrates that, for a taxable investor, a one percentage point change in the before-tax yield on a long-term Canada bond requires an approximately 70 basis point change in the utility return on equity to maintain a similar after-tax equity risk premium.[73] However, a significant proportion of outstanding utility shares are held by non-taxable investors (e.g.,

[72] Canadian Utilities Ltd., Emera Inc., Enbridge Inc., Fortis Inc., Terasen Inc., and TransCanada Corp.
[73] Assuming, as has been the case historically, 40% of the return is dividends and 60% is capital appreciation.

pension funds), and thus do not make investment decisions on the basis of the taxability of various securities. As such, the 70% factor should be interpreted only as a further indicator of the quantitative relationship between the utility cost of equity and long-term Canada bond yields.

I recommend that the Commission implement a symmetric 75% "sliding scale" factor to adjust the allowed return. A factor of 75% recognizes that interest rates and the cost of equity do not rise and fall in tandem; it also recognizes the validity of the objectives of maintaining a stable financial profile, as well as stable rates. The 75% symmetric "sliding scale" will also put the British Columbia utilities on a similar footing to their Canadian peers, the majority of whose returns are governed by symmetric formulas with a 75% sliding scale.[74]

Given the recent low levels of interest rates, and the relative lack of experience with interest rates at this level, I also recommend that the formula should be reviewed if forecast long Canada yields fall below 4% or exceed 8%. Long Canada yields outside of the range of 4.0-8.0% may indicate a materially altered relationship between long Canadas and the utility cost of equity. The 8% ceiling is the same as was adopted by the Commission in its 1999 decision.

The specification of 4% as the bottom end of the range recognizes there has been no experience with long-term Canada yields at or below this level since the 1950s. With respect to the upper end of the range, if long Canadas were to reach 8%, the real cost of capital or inflation would be materially higher than that which is currently anticipated. Both circumstances would warrant a review of the validity of the formula.

[74] The symmetric 75% sliding scale formula has been adopted by the National Energy Board (used since 1995, reconfirmed in 2002); the Ontario Energy Board (since 1997, reconfirmed in 2004); La Régie de L'Energie (adopted in 1998, reconfirmed in 2004); and the Alberta Energy and Utilities Board (adopted in 2004).

CONCEPTUAL UNDERPINNINGS OF THE CAPITAL ASSET PRICING MODEL

The Capital Asset Pricing Model (CAPM) is a theoretical, formal model of the equity risk premium test which posits that the investor requires a return on a security equal to:

$$R_F + \beta(R_M - R_F),$$

Where:

R_F	=	risk-free rate
β	=	covariability of the security with the market (M)
R_M	=	return on the market.

The model is based on restrictive assumptions, including:

1. Perfect, or efficient, markets exist where,

   (a) each investor assumes he has no effect on security prices;
   (b) there are no taxes or transaction costs;
   (c) all assets are publicly traded and perfectly divisible;
   (d) there are no constraints on short-sales; and,
   (e) the same risk-free rate applies to both borrowing and lending.

2. Investors are identical with respect to their holding period, their expectations and the fact that all choices are made on the basis of risk and return.

The CAPM relies on the premise that an investor requires compensation for non-diversifiable risks only. Non-diversifiable risks are those risks that are related to overall

market factors (e.g., interest rate changes, economic growth). Company-specific risks, according to the CAPM, can be diversified away by investing in a portfolio of securities whose expected returns are not perfectly correlated. Therefore the shareholder requires no compensation to bear company-specific risks.

DISADVANTAGES OF CAPM

Risk-Free Rate

1. The theoretical CAPM assumes that the risk-free rate is uncorrelated with the return on the market. In other words, the assumption is that there is no relationship between the risk-free rate and the equity market return (i.e., the risk-free rate has a zero beta). However, the application of the model typically assumes that the return on the market is highly correlated with the risk-free rate, that is, that the equity market return and the risk-free rate move in tandem.

   An ROE formula that is premised on a constant equity market risk premium assumes the risk-free rate and the return on the market are perfectly correlated. An ROE formula that is predicated on a close tracking between the allowed return and the risk-free rate assumes the risk-free rate and the return on the market are highly correlated. For example, the Commission's current formula, which for interest rates below 6%, changes the allowed ROE by 100% of the change in long Canada yields is effectively premised on perfect correlation between the required equity return and the risk-free rate.

2. The theoretical CAPM calls for using a risk-free rate, whereas the typical application of the model in the regulatory context employs a long-term government bond yield as a proxy for the risk-free rate. Long-term government bond yields may reflect various factors that render them problematic as an estimate of the "true" risk-free rate, including:

(a) The yield on long-term government bonds reflects the impact of monetary and fiscal policy; e.g., as discussed in Section IV.A, the existence of a scarcity premium.

(b) Yields on long-term government bonds may reflect shifting degrees of investors' risk aversion; e.g., "flight to quality" (as discussed in Section IV.A). An increase in the equity risk premium arising from a reduction in bond yields due to a "flight to quality" is not likely to be captured in the typical application of the CAPM.

(c) Long-term government bond yields are not risk-free; they are subject to interest rate risk. The size of the equity market risk premium at a given point in time depends in part on how risky long-term government bond yields are relative to the overall equity market. The ability to capture and measure changes in the risk of the so-called risk-free security introduces a further complication in the application of the CAPM.

Equity Market Risk Premium

1. The equity market risk premium is typically measured largely by reference to historic data. Adjustments are then made to capture (a) changes that have occurred in the underlying markets over time, or (b) perceived differences between what investors actually achieved and what they may have expected on an *ex ante* basis. There are a wide range of views on what constitutes an appropriate period for estimating the historic risk premium, on what constitutes the appropriate averaging technique, and on whether various time-specific or country-specific outcomes diminish the reliability of history as a predictor of the future risk premium. In summary, the link between the historic and the future risk premium is subject to considerable judgement.

2. Canadian historic risk premium data, as discussed in Section IV.A, are problematic. In summary,

(a) The Canadian equity market has undergone significant structural change over the periods typically used to measure historic risk premiums. The historic premiums reflect in considerable measure a resource-based economy.

(b) The historic average achieved returns on the TSE 300 Index were significantly affected by the relatively poor performance of commodity-linked securities.

(c) The TSE 300 Index has been criticized for its lack of liquidity and for the quality and size of the stocks it has contained.

(d) The performance of the Canadian equity market as the "market portfolio" has been unduly influenced by a small number of companies.

(e) Despite the structural shift in the TSE Composite away from its historic resource-base, the Canadian market remains significantly less diversified than the U.S. market. Thus, the TSE Composite has, to some extent, had characteristics of a market sector rather than a diversified market portfolio.

(f) The achieved equity market risk premiums in Canada have been squeezed by the performance of the government bond market. The radical change in Canada's fiscal performance over the past decade, leading to the recent low levels of interest rates, indicates that the historic returns on long-term Government of Canada bonds overstate likely future bond returns, and therefore understates the future equity risk premium.

Beta

Impediments to reliance on beta as the sole relative risk measure, as the CAPM indicates, include:

1. The assumption that all risk for which investors require compensation can be captured and expressed in a single risk variable;

2. The only risk for which investors expect compensation is non-diversifiable equity market risk; no other risk is considered (and priced) by investors; and,

3. The assumption that the observed calculated betas (which are simply a calculation of how closely a stock's or portfolio's price changes have mirrored those of the overall equity market)[1] are a good measure of the relative return requirement.

4. Use of beta as the relative risk adjustment allows for the conclusion that the cost of equity capital for a firm can be lower than the risk-free rate, since stocks that have moved counter to the rest of the equity market could be expected to have betas that are negative. Gold stocks, for example, which are regarded as a quintessential counter-cyclical investment, could reasonably be expected to exhibit negative betas. In that case, the CAPM would posit that the cost of equity capital for a gold mining firm would be less than the risk-free rate, despite the fact that, on a total risk basis, the company's stock could be very volatile.

---

[1] The beta is equal to:

$$\frac{\text{Covariance } (R_E, R_M)}{\text{Variance } (R_M)}$$

Betas are typically calculated by reference to historical relative volatility using simple regression analysis of the change in the market portfolio return and the corresponding change in an individual stock or portfolio of stock returns.

RELATIONSHIP BETWEEN BETA AND RETURN IN THE CANADIAN EQUITY MARKET

To test the actual relationship between beta and return in a Canadian context, the betas (using monthly total return data) were calculated for various periods for each of the 15 major sub-indices of the "old" TSE 300 as were the corresponding actual geometric average total returns. Simple regressions of the betas on the achieved market returns were then conducted to determine if there was indeed the expected positive relationship. The regressions covered (a) 1956-2003, the longest period for which data for the TSE 300 and its sub-index components are available; (b) 1956-1997, which eliminates the major effects of the "technology bubble", and (c) all potential non-overlapping 10-year periods from 2003 backwards.

The analysis showed the following:

Table A-1

Returns Measured Over:	Coefficient on Beta	R^2
1956-2003	-.088	47%
1956-1997	-.082	44%
1964-1973	-.020	1%
1974-1983	-.008	1%
1984-1993	-.056	11%
1994-2003	-.054	9%

Source: Schedule 10.

The analysis suggests that, over the longer term, the relationship between beta and return has been negative, rather than the positive relationship posited by the CAPM. For

example, as indicated in Table A-1 above, for the period 1956-2003, the R^2 of 47% means that the betas explained 47% of the variation in returns among the key sectors of the TSE 300 index. However, since the coefficient on the beta was negative, this means that the higher beta companies actually earned lower returns than the low beta companies.

A series of regressions was also performed on the 10 major sectors of the S&P/TSX Composite. These regressions covered (a) 1988-2004, the longest period for which data for the new Composite and its sector components are available; (b) 1988-1997,[2] and (c) the most recent 10-year period ending 2004.

That analysis showed the following:

Table A-2

Returns Measured Over:	Coefficient on Beta	R^2
1988-2004	-.034	15%
1988-1997	-.017	1%
1995-2004	-.066	30%

Source: Schedule 10.

These analyses indicate that, historically, the relationship between beta and return in the Canadian equity market has been the reverse (higher beta = lower return) than the posited relationship.

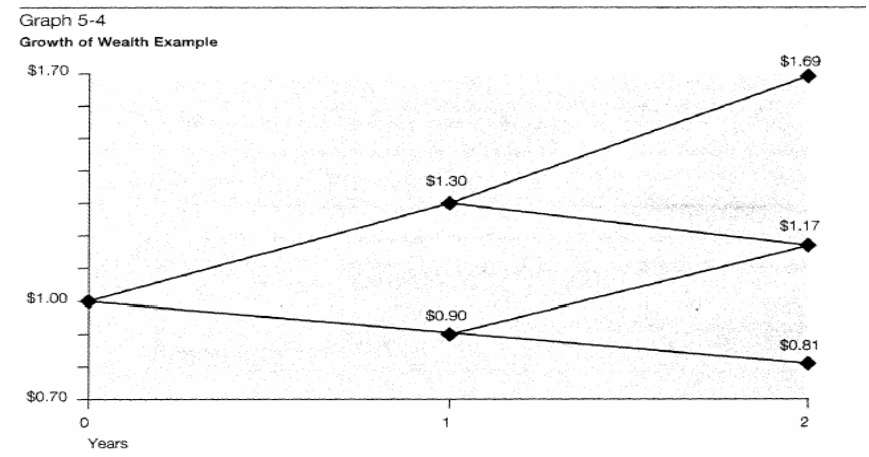
[2] The use of this sub-period was intended to ensure elimination of the impacts of any anomalous market behavior during the technology "bubble" and "bust", which occurred mainly from 1999 through mid-2002.

USE OF ARITHMETIC AVERAGES TO ESTIMATE THE EQUITY MARKET RISK PREMIUM

Illustration of Why Arithmetic Average Should be Used

In Ibbotson Associates, *Stocks, Bonds, Bills and Inflation: Valuation Edition, 2005,* the following discussion was included:

> "To illustrate how the arithmetic mean is more appropriate than the geometric mean in discounting cash flows, suppose the expected return on a stock is 10 percent per year with a standard deviation of 20 percent. Also assume that only two outcomes are possible each year -- +30 percent and -10 percent (i.e., the mean plus or minus one standard deviation). The probability of occurrence for each outcome is equal. The growth of wealth over a two-year period is illustrated in Graph 5-4.



The most common outcome of $1.17 is given by the geometric mean of 8.2 percent. Compounding the possible outcomes as follows derives the geometric mean:

$$[(1+0.30)x(1-0.10)]^{½} - 1 = 0.082$$

However, the expected value is predicted by compounding the arithmetic, not the geometric, mean. To illustrate this, we need to look at the probability-weighted average of all possible outcomes:

	(0.25 x $1.69)	=	$0.4225
+	(0.50 x $1.17)	=	$0.5850
+	(0.25 x $0.81)	=	$0.2025
	Total		$1.2100

Therefore, $1.21 is the probability-weighted expected value. The rate that must be compounded to achieve the terminal value of $1.21 after 2 years is 10 percent, the arithmetic mean.

$1 x $(1+0.10)^2$ = $1.21

The geometric mean, when compounded, results in the median of the distribution:

$1 x $(1+0.0.082)^2$ = $1.17

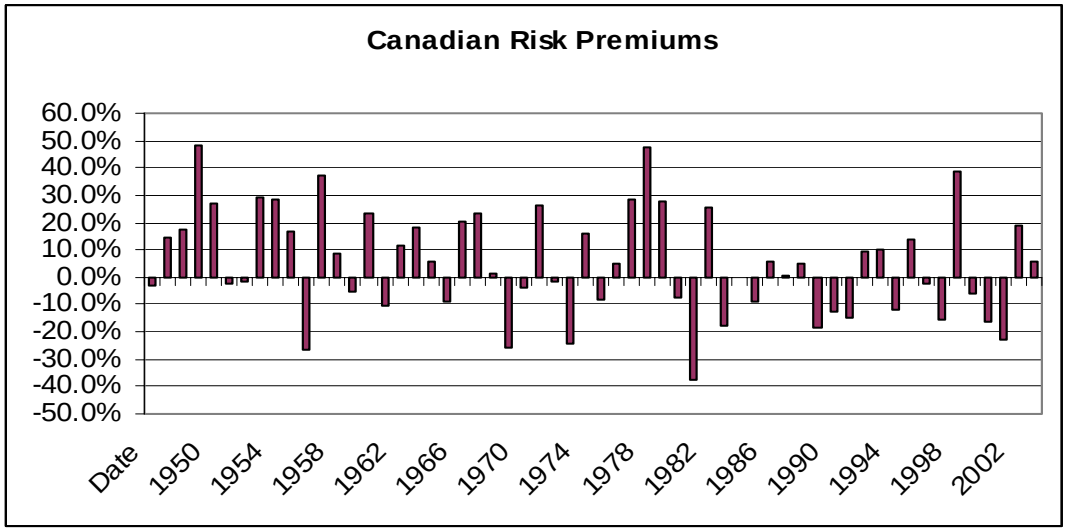
The arithmetic mean equates the expected future value with the present value; it is therefore the appropriate discount rate.

Randomness of Annual Equity Market Risk Premiums

The use of arithmetic averages is premised on the unpredictability of future risk premiums. The following graphs illustrate the uncertainty in the future risk premiums by reference to the historic annual risk premiums. The graphs for both Canada and the U.S. suggest that each year's actual risk premium has been random, that is, not serially correlated with the preceding year's risk premium.[3]

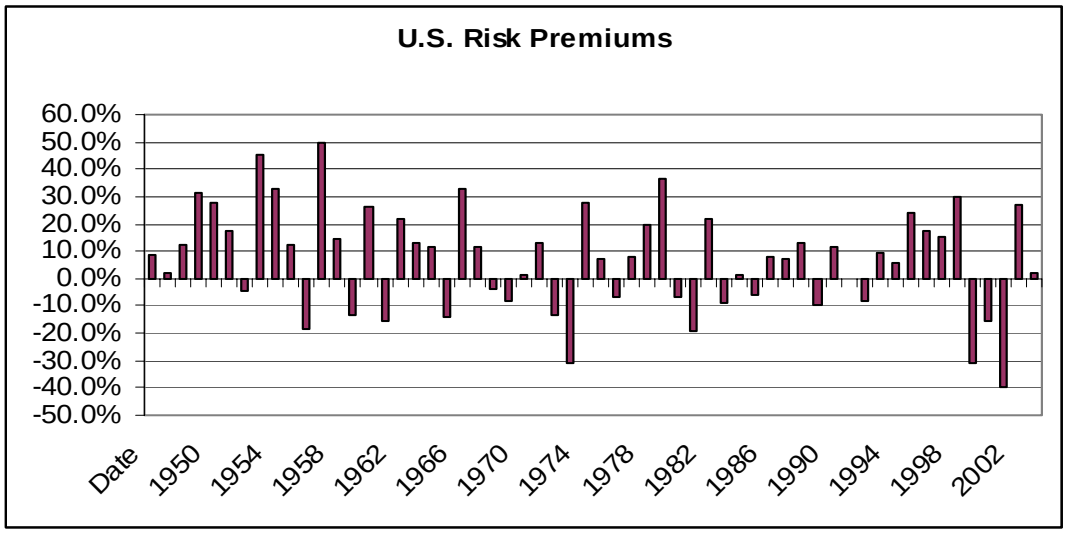
[3] A test for serial correlation between the year-to-year equity risk premiums shows that the serial correlation between the current year's risk premium and that of the prior year for the period 1947-2004 is .06 for Canada and .05 for the U.S. If the current year's risk premium were predictable based on the prior year's risk premium the serial correlation would be close to positive or negative 1.0.

Figure A-1



Source: Canadian Institute of Actuaries, *Report on Canadian Economic Statistics, 1924-2004.*

Figure A-2



Source: Ibbotson Associates, *Stocks, Bonds, Bills & Inflation, 2005 Yearbook.*

ANALYSIS OF TRENDS IN CANADIAN AND U.S. STOCK AND BOND RETURNS

Table A-3 below compares the historic Canadian and U.S. stock returns, bond returns, and equity risk premiums, by decade.

Table A-3

Time Period	Stock Returns		Bond Returns		Risk Premiums	
	Canada	U.S.	Canada	U.S.	Canada	U.S.
1940s	10.0%	10.3%	3.9%	3.3%	6.0%	7.0%
1950s	17.0%	20.8%	0.4%	0.0%	16.5%	20.8%
1960s	10.8%	8.7%	2.9%	1.6%	7.9%	7.1%
1970s	12.1%	7.5%	6.1%	5.7%	6.0%	1.8%
1980s	13.1%	18.2%	13.7%	13.5%	-0.6%	4.7%
1990s	11.6%	19.0%	11.8%	9.5%	-0.2%	9.5%
1995-2004	11.2%	14.0%	10.9%	10.4%	0.2%	3.6%

Source: Canadian Institute of Actuaries, *Report on Canadian Economic Statistics, 1924-2004*, and Ibbotson Associates, *Stocks, Bonds, Bills & Inflation, 2005 Yearbook.*

The decade-by-decade averages suggest that there has been no upward or downward trend in the stock returns. By comparison, the bond returns generally exhibit an increase over time. The pattern in the bond returns results from:

(1) low bond returns in the 1950s-1970s, as rising interest rates produced capital losses on bonds;

(2) high bond returns in the 1980s, corresponding to the high rates of inflation, which pushed up bond yields; and,

(3) high bond returns in the 1990s and early 2000s, reflecting the decline in interest rates and resulting capital appreciation of bonds, leading to total returns well in excess of the yields.[4]

A similar conclusion regarding trends in the risk premium can be drawn from an analysis of rolling and cumulative averages of Canadian and U.S. stock and bond returns. The following averages were calculated for this analysis:

(1) Twenty-five year rolling arithmetic averages of Canadian and U.S. equity and long-term government bond returns (1947-2004).

(2) A series of cumulative average equity and bond returns for Canada and the U.S. The first average starts in 1947, covering 25 years (1947-1971). The second average incorporates 26 years, etc. The final average encompasses the full 1947-2004 period.

(3) A second series of cumulative average returns, where the first average includes the most recent 25 year period (1980-2004); each subsequent average includes an additional prior year.

[4] The bond yield is, in fact, an estimate of the expected return.

The following table summarizes the resulting averages for the equity market returns.[5] The summary of the various averages indicates that the historic equity market returns have not exhibited a secular upward or downward trend, but are within the following ranges:

Table A-4

	Canada	U.S.
25-Year Rolling Averages:		
Range	9.6-14.5%	9.4-18.0%
Average of Averages	11.8%	12.4%
± 1 standard deviation	10.7-12.9%	10.3-14.6%
Increasing Averages (1947+):		
Range	11.4-13.6%	11.5-14.6%
Average of Averages	12.6%	13.1%
± 1 standard deviation	12.0-13.1%	12.4-13.9%
Increasing Averages (2003+):		
Range	10.7-12.8%	11.7-14.9%
Average of Averages	11.5%	12.9%
± 1 standard deviation	10.9-12.2 %	11.9-13.9%

Source: Schedule 9.

The analysis also shows achieved total bond returns have experienced an upward trend, similar to that identified in the decade-by-decade returns described earlier. That trend is unlikely to continue, as recent low levels of interest rates limit future capital gains; it is more likely, in an environment of rising interest rates that bonds would experience capital losses, and the achieved risk premiums will rise.

Given the absence of any upward or downward trend in the historic equity market returns, a reasonable expected value of the future equity market return is a range of 11.5-12.5%, based on both the Canadian and U.S. equity market returns. Based on the near-term forecast for long Canadas of 5.25%, and an expected equity market return of 11.5-12.5%, the indicated market risk premium would be in the range of 6.25-7.25%, or approximately 6.75%.

[5] All of the averages appear on Schedule 9.

SELECTION OF PROXY UTILITIES

A sample of U.S. LDCs was selected, comprised of all LDCs satisfying the following criteria:

(1) classified by *Value Line* as a gas distributor;

(2) with no less than 80% of assets (2003) devoted to natural gas distribution operations;

(3) whose Standard & Poor's debt rating is A- or higher; and,

(4) for which, on average over the period of analysis, at least three analysts' long-term earnings growth rate forecasts have been available from the major data base that provides long-term consensus forecasts, i.e., I/B/E/S International, to ensure that the results capture the market view, and not simply the view of a single analyst.

The seven LDCs that met these criteria are listed on Schedule 17.

CONSTRUCTION OF THE DCF-BASED EQUITY RISK PREMIUM TEST

The constant growth DCF model was used to construct a monthly series of expected utility returns for each of the seven utilities in the sample over the period 1993-2004.[80] The monthly DCF cost for each utility was estimated as the sum of the LDC's I/B/E/S median earnings growth forecast (published monthly) **(g)** and the corresponding expected monthly dividend yield **(DY_e)**. The dividend yield **(DY)** was calculated as the most recent quarterly dividend paid, annualized, divided by the monthly closing price. The expected dividend yield was then calculated by adjusting the monthly dividend yield for one-half the I/B/E/S median earnings growth forecast **(DY_e=DY*(1+.5g))**. The individual utilities' monthly DCF estimates **(DY_e + g)** were then averaged to produce a time series of monthly DCF estimates **(DCF_s)** for the sample. The monthly equity risk premium **(ERP)** for the sample was calculated by subtracting the corresponding 30-year Treasury yield **(TY)** from the average DCF cost of equity **(ERP_s=DCF_s–TY)**. (Schedule 18). The monthly sample average ERP_s were used to estimate the regression equations found in Section IV.C.4.b of the testimony.

[80] Subsequent to Open Access implemented via FERC Order 636.

DCF MODELS

CONSTANT GROWTH MODEL

The constant growth model rests on the assumption that investors expect cash flows to grow at a constant rate throughout the life of the stock. The assumption that investors expect a stock to grow at a constant rate over the long-term is most applicable to stocks in mature industries.

Growth rates in these industries will vary from year to year and over the business cycle, but will tend to deviate around a long-term expected value. As a pragmatic matter, the application of a constant growth model is compatible with the likelihood that investors do not forecast beyond five years. Hence, in that context the current market price and dividend yield would not explicitly anticipate any changes in the outlook for growth.

The constant growth model is expressed as follows:

$$\text{Cost of Equity } \mathbf{(k)} = \frac{\mathbf{D_1}}{\mathbf{P_o}} + \mathbf{g},$$

where,

$\mathbf{D_1}$	=	next expected dividend[1]
$\mathbf{P_o}$	=	current price
g	=	constant growth rate

This model, as set forth above, reflects a simplification of reality. First, it is based on the notion that investors expect all cash flows to be derived through dividends. Second, the underlying premise is that dividends, earnings, and price all grow at the same rate.

[1]Alternatively expressed as D_o (1 + g), where D_o is the most recently paid dividend.

However, it is likely that, in the near-term, investors expect growth in dividends to be lower than growth in earnings.[2]

The model can be adapted to account for the potential disparity between earnings and dividend growth by recognizing that all investor returns must ultimately come from earnings. Hence, focusing on investor expectations of earnings growth will encompass all of the sources of investor returns (e.g., dividends and retained earnings).

TWO-STAGE MODEL

The two-stage model is based on the premise that investors expect the growth rate for the utilities to be equal to the company-specific growth rates for the near-term (Stage 1 Growth), but, in the longer-term (from Year 6 onward) to migrate to the expected long-run rate of growth in the economy (GDP Growth). All industries go through various stages in their life cycle. Utilities are considered to be the quintessential mature industry. Mature industries are those whose growth parallels that of the overall economy.

The use of forecast GDP growth as the long-term growth component is a widely utilized approach. For example, the Merrill Lynch discounted cash flow model for valuation utilizes nominal GDP growth as a proxy for long-term growth expectations. The Federal Energy Regulatory Commission relies on GDP growth to estimate expected long-term nominal GDP growth in its standard DCF models for gas and oil pipelines.

[2] To illustrate, the average growth rate in dividends forecast by *Value Line* for the proxy sample of utilities for the period through 2008-2010 is 2.8%; the corresponding average *Value Line* forecast of earnings growth for the same period is 4.5%.

Using the two-stage DCF model, the DCF cost of equity is estimated as the internal rate of return that causes the price of the stock to equal the present value of all future cash flows to the investor.

The cash flow per share in Year 1 is equal to:

Last Paid Annualized Dividend x (1 + Stage 1 Growth)

For Years 2 through 5, cash flow is defined as:

Cash Flow $_{t-1}$ x (1 + Stage 1 Growth)

Cash flows from Year 6 onward are estimated as:

Cash Flow $_{t-1}$ x (1 + GDP Growth)

SELECTION OF PROXY UTILITIES

A sample of low risk U.S. utilities was selected, comprised of all electric utilities and LDCs, satisfying the following criteria:

(1) Classified by *Value Line* as a gas distributor or an electric utility;

(2) Standard & Poor's business risk profile score of "5" or less;

(3) Standard & Poor's debt rating of A- or higher; and,

(4) For which, on average, over the past 12 months, at least three analysts' long-term earnings forecasts have been available from I/B/E/S.

The 14 utilities that met these criteria are listed on Schedule 19.

INVESTOR GROWTH EXPECTATIONS

The application of the constant growth model relies principally on the consensus of investment analysts' forecasts of long-term earnings growth compiled by I/B/E/S. It also relies on the *Value Line* forecasts of earnings growth as an alternative to the I/B/E/S estimates. The application of the two-stage model relies upon the I/B/E/S consensus earnings forecasts as the estimate of investor growth expectations during Stage 1. The expected long-run rate of growth in the economy (GDP) is based on the consensus of economists' long-term forecasts (published twice annually) found in Blue Chip *Financial Forecasts* (June 1, 2005).

APPLICATION OF THE DCF MODELS

CONSTANT GROWTH MODEL

The constant growth DCF model was applied to the sample of U.S. gas and electric utilities using the following inputs to calculate the dividend yield:

(1) the most recent annualized dividend paid as of May 31, 2005 as D_o; and,

(2) the average of the high and low monthly prices for the three months ending May 31, 2005 as P_o.

For the expected growth rates, the most recent I/B/E/S (May 2005) consensus (median) earnings growth forecasts and the most recent *Value Line* forecasts of earnings growth[3] were used to estimate "g" in the growth component and to adjust the current dividend yield to the expected dividend yield.

Table C-1 below summarizes the results of the constant growth model.

[3] Estimates issued between April 1, 2005 and June 17, 2005.

Table C-1

Earnings Growth Forecast	DCF Cost of Equity	
	Mean	Median
I/B/E/S	8.8%	8.8%
Value Line	8.8%	8.8%

Source: Schedules 20 and 21.

TWO-STAGE MODEL

The two-stage model relies on the I/B/E/S consensus of analysts' earnings forecasts for the first five years (Stage 1), and forecast growth in the economy thereafter (Stage 2). The consensus long-run (2007-2016) expected nominal rate of growth in GDP is 5.5%.

The two-stage DCF model estimates of the cost of equity for the utility sample (Schedule 22) are as follows:

Mean	9.7%
Median	9.7%

RESULTS OF THE CONSTANT GROWTH AND TWO-STAGE MODELS

The results of the two models indicate a required "bare-bones" return on equity of in the range of 8.8-9.7%, or approximately 9.25%.

SELECTION OF CANADIAN INDUSTRIALS

The selection process starts with the recognition that industrials are generally exposed to higher business risk, but lower financial risk, than an average risk Canadian utility. The selection of industrials focuses on total investment risk, i.e., the combined business and financial risks. The comparable earnings test is based on the premise that industrials' higher business risks are offset by a more conservative capital structure, i.e., higher equity ratios, thus permitting selection of industrial samples of reasonably comparable investment risk to an average risk, or benchmark, Canadian utility.

Utilities are generally characterized by relatively low volatility with respect to both earnings and stock market performance. Consequently, the initial universe consisted of all firms on the TSX in Global Industry Classification Standard (GICS) sectors 20-30. The sectors represented by the GICS codes in this range are: Industrials, Consumer Discretionary and Consumer Staples.[1] The resulting universe contained 432 firms. From this group of 432 companies, all firms with missing book equity or negative common equity during the period 1993-2003 were removed (64 companies remaining). Next, all companies that paid no dividends in any year 1999-2003 were removed (43 companies remaining). To remove small and/or thinly traded companies, all companies that traded fewer than 125,000 shares in 2003 were eliminated (leaving 41 companies). To ensure that low risk companies were selected, all companies with five-year betas ending 2003 over 1.0 were removed.[2] The resulting group contained 34 companies. Next, those companies whose 1993-2003 returns were greater than ± 1 standard deviation from the average were removed to eliminate companies whose earnings have been chronically depressed or which have been extraordinarily profitable. Finally, those companies whose

[1] Included in these sectors are major industries such as: Food Retail, Food Distributors, Tobacco, Packaged Foods, Soft Drinks, Distillers, Household Appliances, Aerospace and Defense, Electrical Components & Equipment, Industrial Machinery, Publishing & Printing, Department Stores, and General Merchandise.

[2] SNC-Lavalin was removed due to its purchase of regulated electric transmission assets in Alberta; Canadian Pacific Railway was also eliminated due to its reorganization in 2000, which rendered its historic data series inconsistent; North West Co. Fund was removed because it is an income trust; Molson was removed due to the company's merger with Coors.

stock was ranked "Higher Risk" or "Speculative" by the Canadian Business Service (CBS),[3] whose debt is rated non-investment grade i.e., BB+ or below by either DBRS or Standard and Poor's, or for which none of the agencies report a rating, were eliminated. The final sample of low risk Canadian industrials is comprised of 17 companies (Schedule 23).

TIME PERIOD FOR MEASURING RETURNS

Since industrials' returns on equity tend to be cyclical, the appropriate period for measuring industrial returns should encompass an entire business cycle, covering years of both expansion and decline. That cycle should be representative of a future normal cycle, e.g., similar in terms of inflation and real economic growth. Over the period 1993-2004, the experienced returns on equity of the sample of 17 industrials were as follows.

Table D-1

Returns on Average Common Equity
for Low Risk Canadian Industrials
(1993-2004)

Average:	13.6%
Median	13.3%
Average of annual medians:	13.0%

Source: Schedule 24.

Based on these data, the returns are in the approximate range of 13.0-13.5%.

[3] Canadian Business Service (CBS) ranks stocks "Very Conservative", "Conservative", "Average", "Higher Risk", or "Speculative".

The average nominal economic growth during the 1993-2004 cycle was 5.2%, compared to the consensus forecast for real growth of approximately 2.7%, and for inflation (CPI) of 1.9% for the next decade (2005-2015)[4], which suggests nominal long-term GDP growth of approximately 4.6%. With nominal growth expected to be only moderately lower relative to the past business cycle, the experienced returns on book equity, absent extraordinary events, provide a reasonable proxy for the future.

RELATIVE RISK COMPARISON

With respect to the relative investment risk of the Canadian industrials compared to an average risk benchmark Canadian utility, the business risk of the industrials exceeds that of utilities; however, this difference is largely offset by the industrials' significantly lower financial risk resulting from higher equity ratios (approximately 66% compared to 40% on average for Canadian utilities; see Schedules 24 and 1).

Comparisons of the industrials' and utilities' bond ratings and stock ratings indicate that they are in a similar risk class. The median CBS stock rating for the industrials is "Very Conservative", equal to the median for a sample of six investor-owned Canadian gas and electric utilities with publicly-traded stock.[5] The median S&P and DBRS debt ratings for the industrials are BBB+ and A(low)/BBB(high) respectively, compared to the major Canadian utilities' median ratings of A- and A (See Schedules 23 and 3). The median adjusted betas for the industrials were 0.48 and 0.56 for the five year periods ending 2003 and 2004 respectively (see Schedule 23), compared to my estimate of the relative risk adjustment factor for a benchmark utility of 0.65.

[4] Consensus Economics, *Consensus Forecasts*, April 2005.
[5] Canadian Utilities Ltd., Enbridge Inc., Emera Inc., Fortis Inc., Terasen Inc., and TransCanada Corporation.

The estimate of a normal cycle average level of returns for low risk Canadian industrials is in the approximate range of 13.0-13.5%. Since the level of investment risk faced by the industrials is marginally higher than that of an average risk benchmark Canadian utility, a fair return for the latter based on the comparable earnings test is no less than 13.0%.

SELECTION OF U.S. INDUSTRIALS

The U.S. industrials were selected using similar criteria to the selection of Canadian industrials. The initial universe consisted of all firms actively traded in the U.S. from S&P's Compustat database in Global Industry Classification Standard (GICS) sectors 20-30. The sectors represented by the GICS codes in this range are: Industrials, Consumer Discretionary and Consumer Staples.[6] The resulting universe contained 2,808 firms. From this group of 2,808 companies, all firms with missing or negative common equity during the period 1993-2003 or with 2003 common equity less than $50 million were removed (770 companies remaining). To ensure that low risk companies were selected, all companies with five-year betas ending 2003 over 1.0 were removed. To remove thinly traded companies, all companies that traded fewer than 125,000 shares in 2003 were eliminated (leaving 527 companies). All non-U.S. companies were then removed, leaving 487. Next, all companies that paid no dividends in any year 1999-2003 were removed (240 companies remaining).[7] Next, those companies whose 1993-2003 returns were greater than ± 1 standard deviation from the average were removed to eliminate companies whose earnings have been chronically depressed or which have been extraordinarily profitable. Finally, those companies whose debt is rated non-investment grade i.e., BB+ or below by Standard and Poor's, or for which the *Value Line* Safety

[6] Included in these sectors are major industries such as: Food Retail, Food Distributors, Tobacco, Packaged Foods, Soft Drinks, Distillers, Household Appliances, Aerospace and Defense, Electrical Components & Equipment, Industrial Machinery, Publishing & Printing, Department Stores, and General Merchandise.
[7] USF, Sears and Molson Coors were removed due to their recent mergers.

Rank was equal to "4" or "5",[8] were eliminated. The final sample of low risk U.S. industrials is comprised of 188 companies (Schedule 25). The returns for the sample of U.S. industrials are summarized in Table D-2 below.

Table D-2

Returns on Average Common Equity for Low Risk U.S. Industrials (1993-2004)	
Average:	14.8%
Median	14.1%
Average of annual medians:	14.6%

Source: Schedule 26.

Based on these data, the returns are in the approximate range of 14.0-14.75%.

As with the Canadian industrials, the business risk of the U.S. industrials exceeds that of utilities; however, this difference is largely offset by the industrials' significantly lower financial risk resulting from higher equity ratios (approximately 75% compared to 40% on average for Canadian utilities; see Schedules 25 and 1).

Comparisons of the industrials' and utilities' bond ratings and stock ratings indicate that they are in a similar risk class. The median *Value Line* Safety Ranking for the U.S. industrials is "3", somewhat weaker than the Safety Ranking of "2" for TransCanada Corporation, the only Canadian regulated firm for which a ranking is provided.[9] The median S&P debt rating for the industrials is A-, identical to the major Canadian utilities'

[8] *Value Line*'s Safety Ranking is a measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other *Value Line* indexes – the Price Stability Index and the Financial strength Rating. Safety Ranks range from "1" (highest) to "5" (lowest).
[9] The average Safety Rank for the proxy samples of U.S. utilities used to perform the DCF-based equity risk premium test and the DCF test is also "2".

median rating of A- (See Schedules 25 and 3). The median adjusted betas for the industrials were 0.66 and 0.67 for the five year periods ending 2003 and 2004 respectively (see Schedule 25), compared to my estimate of the relative risk adjustment factor for a benchmark utility of 0.65.

The returns for the U.S. industrials indicate that the results of the comparable earnings test applied to the Canadian industrials are reasonable.

APPENDIX E
QUALIFICATIONS OF KATHLEEN C. McSHANE

Kathleen McShane is a Senior Vice President and senior consultant with Foster Associates, Inc., where she has been employed since 1981. She holds an M.B.A. degree in Finance from the University of Florida, and M.A. and B.A. degrees from the University of Rhode Island. She has been a CFA charterholder since 1989.

Ms. McShane worked for the University of Florida and its Public Utility Research Center, functioning as a research and teaching assistant, before joining Foster Associates. She taught both undergraduate and graduate classes in financial management and assisted in the preparation of a financial management textbook.

At Foster Associates, Ms. McShane has worked in the areas of financial analysis, energy economics and cost allocation. Ms. McShane has presented testimony in more than 125 proceedings on rate of return and capital structure before federal, state, provincial and territorial regulatory boards, on behalf of U.S. and Canadian telephone companies, gas pipelines and distributors, and electric utilities. These testimonies include the assessment of the impact of business risk factors (e.g., competition, rate design, contractual arrangements) on capital structure and equity return requirements. She has also testified on various ratemaking issues, including deferral accounts, rate stabilization mechanisms, excess earnings accounts, cash working capital, and rate base issues. Ms. McShane has provided consulting services for numerous U.S. and Canadian companies on financial and regulatory issues, including financing, dividend policy, corporate structure, cost of capital, automatic adjustments for return on equity, form of regulation (including performance-based regulation), unbundling, corporate separations, stand-alone cost of debt, regulatory climate, income tax allowance for partnerships, change in fiscal year end, treatment of inter-corporate financial transactions, and the impact of weather normalization on risk.

Ms. McShane was principal author of a study on the applicability of alternative incentive regulation proposals to Canadian gas pipelines. She was instrumental in the design and preparation of a study of the profitability of 25 major U.S. gas pipelines, in which she developed estimates of rate base, capital structure, profit margins, unit costs of providing services, and various measures of return on investment. Other studies performed by Ms. McShane include a comparison of municipal and privately owned gas utilities, an analysis of the appropriate capitalization and financing for a new gas pipeline, risk/return analyses of proposed water and gas distribution companies and an independent power project, pros and cons of performance-based regulation, and a study on pricing of a competitive product for the U.S. Postal Service. She has also conducted seminars on cost of capital for regulated utilities, with focus on the Canadian regulatory arena.

Publications, Papers and Presentations

- "Utility Cost of Capital Canada vs. U.S.", presented at the CAMPUT Conference, May 2003.
- "The Effects of Unbundling on a Utility's Risk Profile and Rate of Return", (co-authored with Owen Edmondson, Vice President of ATCO Electric), presented at the Unbundling Rates Conference, New Orleans, Louisiana sponsored by Infocast, January 2000.
- Atlanta Gas Light's Unbundling Proposal: More Unbundling Required?" presented at the 24th Annual Rate Symposium, Kansas City, Missouri, sponsored by several Commissions and Universities, April 1998.
- "Incentive Regulation: An Alternative to Assessing LDC Performance", (co-authored with Dr. William G. Foster), presented at the Natural Gas Conference, Chicago, Illinois sponsored by the Center for Regulatory Studies, May 1993.
- "Alternative Regulatory Incentive Mechanisms", (co-authored with Stephen F. Sherwin), prepared for the National Energy Board, Incentive Regulation Workshop, October 1992.

APPENDIX E
QUALIFICATIONS OF KATHLEEN C. McSHANE

Expert Testimony/Opinions

on

Rate of Return & Capital Structure

Alberta Natural Gas	1994
AltaGas Utilities	2000
Ameren (Central Illinois Public Service)	2000, 2002
Ameren (Illinois Power)	2004
Ameren (Union Electric)	2000 (2 cases), 2002 (2 cases), 2003
ATCO Electric	1989, 1991, 1993, 1995, 1998, 1999, 2000, 2003
ATCO Gas	2000, 2003
ATCO Pipelines	2000, 2003
Bell Canada	1987, 1993
Benchmark Utility Cost of Equity (British Columbia)	1999
Canadian Western Natural Gas	1989, 1998, 1999
Centra Gas B.C.	1992, 1995, 1996, 2002
Centra Gas Ontario	1990, 1991, 1993, 1994, 1996
Direct Energy Regulated Services	2005
Dow Pool A Joint Venture	1992
Edmonton Water/EPCOR Water Services	1994, 2000
Enbridge Gas Distribution	1988, 1989, 1991-1997, 2001, 2002
Enbridge Gas New Brunswick	2000
FortisBC	1995, 1999, 2001, 2004
Gas Company of Hawaii	2000
Gaz Metropolitain	1988
Gazifère	1993, 1994, 1995, 1996, 1997, 1998
Generic Cost of Capital, Alberta (ATCO and AltaGas Utilities)	2003
Heritage Gas	2002
Hydro One	1999, 2000

Insurance Bureau of Canada (Newfoundland)	2004
Laclede Gas Company	1998, 1999, 2001, 2002, 2005
Mackenzie Valley Pipeline	2005
Maritimes NRG (Nova Scotia) and (New Brunswick)	1999
Multi-Pipeline Cost of Capital Hearing (National Energy Board)	1994
Natural Resource Gas	1994, 1997
Newfoundland & Labrador Hydro	2001, 2003
Newfoundland Power	1998, 2002
Newfoundland Telephone	1992
Northwestel, Inc.	2000
Northwestern Utilities	1987, 1990
Northwest Territories Power Corp.	1990, 1992, 1993, 1995, 2001
Nova Scotia Power Inc.	2001, 2002
Ozark Gas Transmission	2000
Pacific Northern Gas	1990, 1991, 1994, 1997, 1999, 2001, 2005
Platte Pipeline Co.	2002
St. Lawrence Gas	1997, 2002
Southern Union Gas	1990, 1991, 1993
Stentor	1997
Tecumseh Gas Storage	1989, 1990
Telus Québec	2001
Terasen Gas	1992, 1994
TransCanada PipeLines	1988, 1989, 1991 (2 cases), 1992, 1993
TransGas and SaskEnergy LDC	1995
Trans Québec & Maritimes Pipeline	1987
Union Gas	1988, 1989, 1990, 1992, 1994, 1996, 1998, 2001
Westcoast Energy	1989, 1990, 1992 (2 cases), 1993
Yukon Electric Co. Ltd./Yukon Energy	1991, 1993

Expert Testimony/Opinions

on

Other Issues

Client	Issue	Date
Ontario Electricity Distributors	Stand-Alone Income Taxes	2005
Caisse Centrale de Réassurance	Collateral Damages	2004
Enbridge Gas New Brunswick	AFUDC	2004
Heritage Gas	Deferral Accounts	2004
ATCO Electric	Carrying Costs on Deferral Account	2001
Newfoundland & Labrador Hydro	Rate Base, Cash Working Capital	2001
Gazifère Inc.	Cash Working Capital	2000
Maritime Electric	Rate Subsidies	2000
Enbridge Gas Distribution	Principles of Cost Allocation	1998
Enbridge Gas Distribution	Unbundling/Regulatory Compact	1998
Maritime Electric	Form of Regulation	1995
Northwest Territories Power	Rate Stabilization Fund	1995
Canadian Western Natural Gas	Cash Working Capital/ Compounding Effect	1989
Gaz Metro/ Province of Québec	Cost Allocation/ Incremental vs. Rolled-In Tolling	1984

TERASEN GAS INC.
and
TERASEN GAS (VANCOUVER ISLAND) INC.

Statistical Exhibit

to accompany

Prepared Testimony

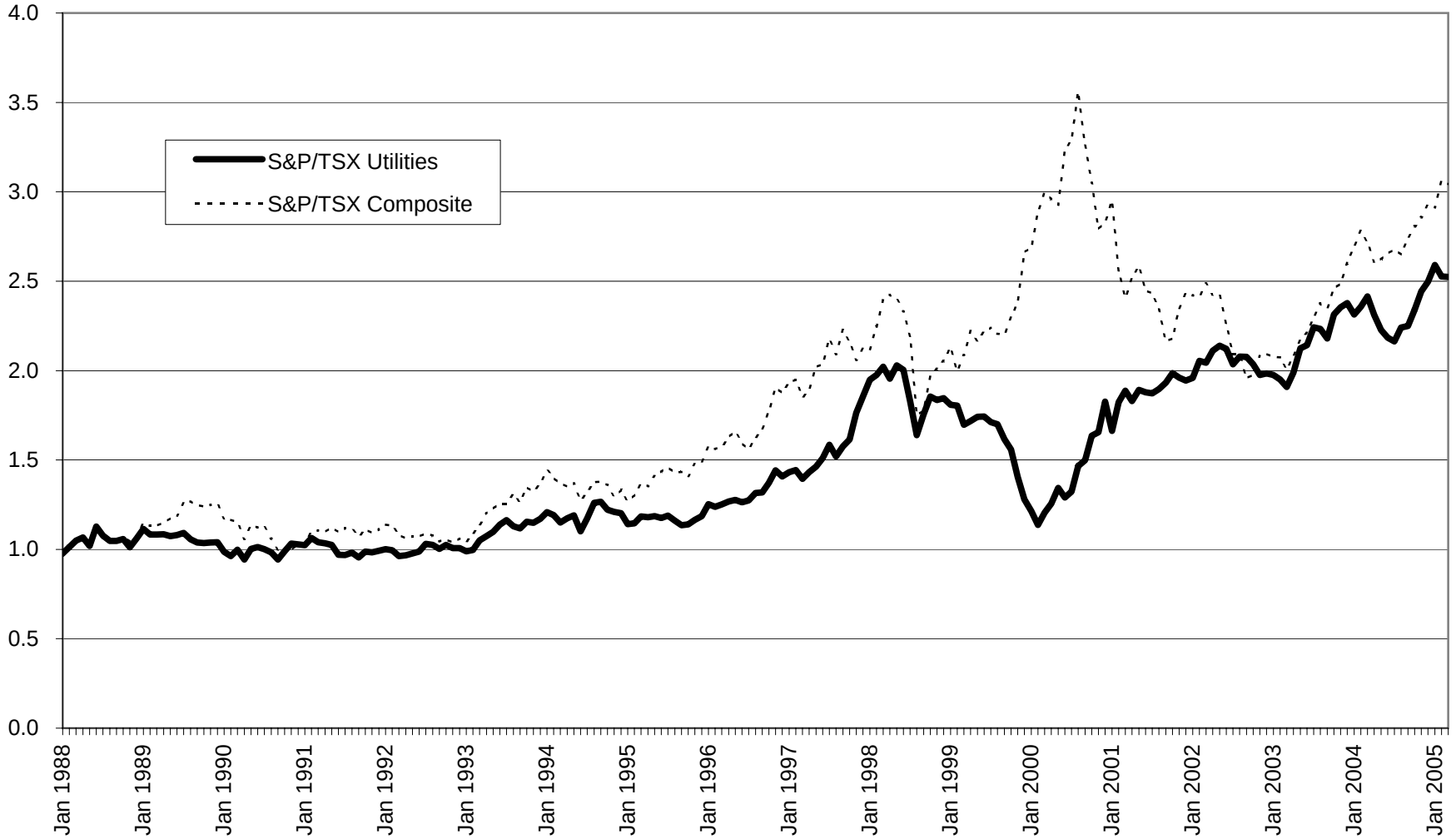
of

KATHLEEN C. McSHANE

FOSTER ASSOCIATES, INC.
Bethesda, MD. 20814
June 2005

TABLE OF CONTENTS

TREND IN S&P/TSX UTILITIES AND S&P/TSX PRICE INDICES
(January 1988 to March 2005)



Source: TSX Review

CAPITAL STRUCTURE RATIOS
OF MAJOR CANADIAN ELECTRIC AND GAS UTILITIES
(2004)

Company	Long-term Debt a/	Short-Term Debt	Preferred Stock b/	Common Stock Equity c/
Electric Utilities				
AltaLink L.P.	60.9	0.0	0.0	39.1
CU Inc.	54.7	0.3	6.8	38.3
Epcor Utilities Inc.	44.1	0.0	9.5	46.4
FortisAlberta Inc.	57.1	0.0	0.0	42.9
FortisBC Inc.	59.4	0.0	0.0	40.6
Hydro One Inc.	53.1	0.3	3.3	43.3
Maritime Electric	42.9	10.3	0.0	46.8
Newfoundland Power	46.1	8.2	1.3	44.4
Nova Scotia Power	52.5	0.2	9.4	38.0
Gas Distributors				
Enbridge Gas Distribution	47.1	16.1	2.1	34.7
Gaz Metropolitain	57.0	1.3	0.0	41.7
Pacific Northern Gas	50.2	3.5	2.9	43.3
Terasen Gas	61.3	4.5	0.0	34.2
Union Gas	58.4	4.6	3.1	34.0
Pipelines				
Enbridge Pipelines	51.8	3.6	0.0	44.6
Nova Gas Transmission Ltd.	52.2	10.7	0.0	37.1
TransCanada PipeLines Ltd. d/	56.5	2.9	5.7	34.9
Westcoast Energy Inc.	56.3	2.8	5.2	36.9
Means				
Electric Utilities	**52.3**	**2.1**	**3.4**	**42.2**
Gas Distributors	**54.8**	**6.0**	**1.6**	**37.6**
All Companies	**53.4**	**3.8**	**2.7**	**40.1**

a/ Includes current portion of long-term debt and preferred securities classified as debt.

b/ Includes minority interest in preferred shares of subsidiary companies and preferred securities.

c/ Includes minority interest in common shares of subsidiary companies.

d/ Excludes non-recourse debt

Source: Reports to Shareholders, DBRS

PRE-TAX INTEREST COVERAGE RATIOS FOR MAJOR CANADIAN UTILITIES

Company	1995	1996	1997	1998	1999	2000	2001	2002	2003
Electric Utilities									
AltaLink L.P.	na	na	na	na	na	na	na	2.0 [1/]	1.9 [2/]
CU Inc.	3.1	3.2	3.3	3.3	3.1	2.8	2.6	2.8	3.0
FortisAlberta Inc.	na	na	na	na	na	na	2.0	3.0	2.2
FortisBC Inc.	2.5	2.7	2.7	2.2	2.2	2.2	2.4	1.8	2.1
Hydro One Inc. [/3]	na	na	na	na	2.5	2.5	2.6	2.5	3.0
Maritime Electric	3.6	3.1	2.7	2.1	2.3	0.9	2.1	2.2	2.5
Newfoundland Power	2.7	2.8	2.8	2.4	2.5	2.6	2.7	2.6	2.4
Nova Scotia Power	1.8	1.9	2.1	2.1	2.3	2.3	2.3	2.3	2.8
Mean	**2.7**	**2.7**	**2.7**	**2.4**	**2.5**	**2.2**	**2.4**	**2.4**	**2.5**
Median	**2.7**	**2.8**	**2.7**	**2.2**	**2.4**	**2.4**	**2.4**	**2.4**	**2.5**
Gas Distributors									
Enbridge Gas Distribution	2.0	2.6	2.6	2.1	2.2	2.2	2.8	2.7	2.7
Gaz Metropolitain	2.6	2.6	2.7	2.7	2.4	2.7	2.5	2.9	2.9
Pacific Northern Gas	2.1	2.7	2.6	2.3	2.3	2.3	2.3	2.5	2.3
Terasen Gas	1.8	2.0	2.3	2.3	2.3	1.9	1.8	2.0	2.0
Union Gas	2.2	2.3	2.4	2.0	1.8	2.0	1.9	2.1	2.1
Mean	**2.1**	**2.4**	**2.5**	**2.3**	**2.2**	**2.2**	**2.2**	**2.4**	**2.4**
Median	**2.1**	**2.6**	**2.6**	**2.3**	**2.3**	**2.2**	**2.3**	**2.5**	**2.3**
Pipelines									
Enbridge Pipelines (Mainline)	2.5	2.6	2.5	1.7	2.3	2.8	2.8	3.0	3.9
Nova Gas Transmission Ltd.	1.6	1.8	2.1	2.1	2.2	2.3	2.3	2.4	2.4
TransCanada PipeLines Ltd.	1.9	2.0	1.9	1.7	1.7	2.0	2.1	2.3	2.3
Westcoast Energy Ltd.	1.6	1.8	1.8	1.5	1.5	1.7	2.0	2.1	1.9
Mean	**1.9**	**2.0**	**2.1**	**1.7**	**1.9**	**2.2**	**2.3**	**2.5**	**2.6**
Median	**1.8**	**1.9**	**2.0**	**1.7**	**2.0**	**2.2**	**2.2**	**2.3**	**2.4**
All Company Mean	**2.3**	**2.4**	**2.5**	**2.2**	**2.2**	**2.2**	**2.3**	**2.4**	**2.5**
All Company Median	**2.1**	**2.6**	**2.5**	**2.1**	**2.3**	**2.3**	**2.3**	**2.4**	**2.4**

/1 12 months ended April 2003
/2 12 months ended April 2004
/3 Post restructuring

Source: DBRS Inc., Annual Report to Shareholders (Maritime Electric).

DEBT AND COMMON STOCK QUALITY RATINGS
OF MAJOR CANADIAN GAS AND ELECTRIC UTILITIES

Company	Debt Rated	DBRS Bond Rating	Moody's Bond Rating	S&P Bond Rating	CBS Stock Ranking
AltaLink L.P.	Senior Secured	A(high)		A-	NR
CU Inc.	Senior Unsecured	A(high)		A	Very conservative
Enbridge Gas Distribution	Senior Unsecured	A		A-	Very conservative
Enbridge Pipelines	Senior Unsecured	A(high)		A-	Very conservative
Epcor Utilities Inc	Senior Unsecured	A(low)	Baa2	BBB+	NR
FortisAlberta Inc.	Senior Unsecured	A(low)	Baa1		Very conservative
FortisBC Inc	Secured Debentures	BBB(high)	Baa3		Very conservative
Gaz Metropolitain	Senior Secured	A		A	NR
Hydro One	Senior Unsecured	A	A2	A	NR
Maritime Electric	Senior Secured	NR		BBB+	Very conservative
Newfoundland Power	Senior Secured	A	Baa1	A-	Very conservative
NOVA Gas Transmission	Senior Unsecured	A	A2	A-	Very conservative
Nova Scotia Power	Senior Unsecured	A(low)	Baa1	BBB+	Very conservative
Pacific Northern Gas	Senior Secured	BBB(low)		NR [1/]	Average
Terasen Gas	Senior Secured Senior Unsecured	A A	A1 A2	A- BBB	Very conservative
TransCanada PipeLines	Senior Unsecured	A	A2	A-	Very conservative
Union Gas Limited	Senior Unsecured	A		BBB	Very conservative
Westcoast Energy	Senior Unsecured	A(low)		BBB	Very conservative
Median		**A**	**A3**	**A-**	**Very conservative**

1/ Withdrawn by company; BB- prior to withdrawal.

Note: Debt ratings are for utility; Stock rankings are for parent.

Source: DBRS Bond Ratings, Moodys.com, Standard & Poor's, The Blue Book of CBS Stock Reports.

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. A-RATED LDCs

	S&P Debt Rating	Business Profile	FFO Interest Coverage (x)	FFO/ Avg. Total Debt (%)	Total Debt/Capital (%)
Nicor Inc.	AA	3	5.9	43.1	54.6
Washington Gas Light Co.	AA-	2	4.6	23.7	48.5
WGL Holdings Inc.	AA-	3	4.7	22.5	49.2
New Jersey Natural Gas Co.	A+	2	5.4	19.1	55.3
Northwest Natural Gas Co.	A+	1	4.1	21.1	52.8
KeySpan Corp.	A	4	4.1	17.3	63.6
Laclede Group Inc. (The)	A	3	3.2	12.7	61.0
Piedmont Natural Gas Co. Inc.	A	2	3.5	17.2	55.1
Southern California Gas Co.	A	1	7.9	52.1	44.2
AGL Resources Inc.	A-	4	3.3	17.9	62.3
Alabama Gas Corp.	A-	2	4.9	30.8	47.8
Equitable Resources Inc.	A-	7	6.5	33.3	46.5
Indiana Gas Co. Inc.	A-	1	3.4	14.1	58.5
North Shore Gas Co.	A-	2	5.7	31.1	40.6
Pivotal Utility Holdings (NUI Utilities)	A-	4	3.7	14.2	68.1
Peoples Energy Corp.	A-	5	4.4	20.2	56.6
Peoples Gas Light & Coke Co. (The)	A-	2	5.6	22.5	49.8
Public Service Co. of North Carolina Inc.	A-	2	4.5	29.3	25.1
Questar Gas Co.	A-	3	3.8	19.7	52.8
Wisconsin Gas Co.	A-	2	6.9	25.1	34.7
Mean All Companies	**A**	**3**	**4.8**	**24.3**	**51.4**
Median All Companies	**A-**	**2**	**4.5**	**21.8**	**52.8**

Source: S&P "U.S. Utility and Power Ranking List" (June 17, 2005); and the following S&P Credit Stats (August 2004) tables:

Energy Utilities--Diversified
Gas Distribution Utilities--Integrated
Gas Transmission & Distribution Utilities--Regulated

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. A-RATED REGULATED ELECTRIC TRANSMISSION, DISTRIBUTION AND COMBINATION UTILITIES

	S&P Debt Rating	Business Profile	FFO Interest Coverage (x)	FFO/ Avg. Total Debt (%)	Total Debt/Capital (%)
Boston Edison Co.	A	1	5.3	25.5	55.0
Central Hudson Gas & Electric Corp.	A	3	4.0	28.0	47.8
Consolidated Edison Co. of New York Inc.	A	2	3.1	16.7	54.9
Consolidated Edison Inc.	A	2	3.2	16.6	54.6
NSTAR	A	1	3.7	17.4	62.3
New England Power Co.	A	1	12.8	38.3	30.4
Orange and Rockland Utilities Inc.	A	2	4.0	22.2	51.9
San Diego Gas & Electric Co.	A	5	4.1	21.7	54.1
Central Illinois Light Co.	A-	5	5.4	27.1	49.3
Central Illinois Public Service Co.	A-	3	2.9	12.0	48.8
CILCORP Inc.	A-	5	2.2	9.7	60.5
Commonwealth Edison Co.	A-	4	3.4	22.5	49.8
Illinois Power Co.	A-	4	2.9	12.8	59.2
PECO Energy Co.	A-	4	4.0	22.8	85.1
PPL Electric Utilities Corp.	A-	4	2.6	10.8	55.2
Mean All Companies	**A/A-**	**3**	**4.2**	**20.3**	**54.6**
Median All Companies	**A**	**3**	**3.7**	**21.7**	**54.6**

Source: S&P "U.S. Utility and Power Ranking List" (June 17, 2005); and the following S&P Credit Stats (August 2004) tables:

Electric & Gas Transmission & Distribution Utilities--Regulated
Electric Transmission & Distribution Utilities--Regulated
Electric Transmission & Transport Utilities--Regulated

EQUITY RETURN AWARDS AND CAPITAL STRUCTURES ADOPTED BY REGULATORY BOARDS FOR INVESTOR-OWNED CANADIAN UTILITIES
(Percentages)

	Decision Date	Order/ File Number	Debt	Preferred Stock	Common Stock Equity		Equity Return	Forecast 30-Year Bond Yield	
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	
Electric Utilities									
AltaLink	11/04	EUB 2004-423	65.00	0.00	35.00	a/	9.50	5.55	
ATCO Electric									
Transmission	11/04	EUB 2004-423	61.00	6.00	33.00		9.50	5.55	
Distribution	11/04	EUB 2004-423	56.10	6.90	37.00		9.50	5.55	
FortisAlberta Inc.	11/04	EUB 2004-423	63.00	0.00	37.00		9.50	5.55	
FortisBC Inc.	11/04; 5/05	L-55-04; G-52-5	60.00	0.00	40.00		9.43	5.53	
Newfoundland Power	12/04	PU 50 (2004)	54.06	1.39	44.55		9.24	4.96	
Nova Scotia Power	3/05	NSUARB-NSPI-P-881	53.30	9.20	37.50		9.55	na	b/
Gas Distributors									
ATCO Gas	11/04	EUB 2004-423	55.10	6.90	38.00		9.50	5.55	
Enbridge Gas Distribution Inc	1/04;12/04	RP-2002-0158; RP-2003-0203	61.91	3.09	35.00		9.57	5.81	
Gaz Metropolitain	9/04	D-2004-196	54.00	7.50	38.50		9.69	5.80	c/
Pacific Northern Gas	11/03; 7/04	L-57-03; G-69-04	60.32	3.69	36.00		9.80	5.65	d/
Terasen Gas	11/04	L-55-04	67.00	0.00	33.00		9.03	5.53	
Union Gas	1/04;3/04	RP-2002-0158; RP-2003-0063	61.50	3.50	35.00		9.62	5.68	
Gas Pipelines									
Alberta Natural Gas	11/04	RH-2-94	70.00	0.00	30.00		9.46	5.55	
Foothills Pipe Lines (Yukon) Ltd.	11/04	RH-2-94	70.00	0.00	30.00		9.46	5.55	
TransCanada PipeLines	11/04; 4/05	RH-3-94/RH-2-2004	64.00	0.00	36.00		9.46	5.55	
Trans Quebec & Maritimes Pipeline	11/04	RH-2-94	70.00	0.00	30.00		9.46	5.55	
Westcoast Energy	8/04; 11/04	RH-2-94; RH-1-2004	69.00	0.00	31.00		9.46	5.55	

a/ EUB 2004-052 set the equity ratio at 35% (33% for transmission plus 2% in recognition of AltaLink's tax status).
b/ The Board approved an ROE of 9.55% for ratemaking purposes and set the earnings range at 9.30-9.80%.
c/ Gaz Metro is allowed to earn an additional 1.95% based on expected productivity gains for the 2005 fiscal year.
d/ 2005 rate application currently pending.

Source: Board Decisions.

RATES OF RETURN ON COMMON EQUITY ADOPTED BY
REGULATORY BOARDS FOR INVESTOR-OWNED CANADIAN UTILITIES

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Electric Utilities																
AltaLink	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.40	9.60	9.50
ATCO Electric	13.50	13.50	13.25	11.88	NA	NA	11.25	a/	a/	a/	a/	a/	a/	9.40	9.60	9.50
FortisAlberta Inc.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.50	9.50	9.60	9.50
FortisBC Inc.	13.50	NA	11.75	11.50	11.00	12.25	11.25	10.50	10.25	9.50	10.00	9.75	9.53	9.82	9.55	9.43
Newfoundland Power	13.95	13.25	NA	NA	NA	NA	11.00	NA	9.25	9.25	9.59	9.59	9.05	9.75	9.75	9.24
Nova Scotia Power	NA	NA	NA	11.75	NA	NA	10.75	NA	NA	NA	NA	NA	10.15	NA	NA	9.55
TransAlta Utilities	13.50	13.50	13.25	11.88	NA	12.25	11.25	a/	b/	9.25	9.25	NA	9.40	NA	NA	NA
Mean of Electric Utilities	**13.61**	**13.42**	**12.75**	**11.75**	**11.00**	**12.25**	**11.10**	**10.50**	**9.75**	**9.33**	**9.61**	**9.67**	**9.53**	**9.57**	**9.62**	**9.45**
Gas Distributors																
Atco Gas	13.25	13.25	12.25	12.25	NA	NA	NA	10.50	9.38	NA	NA	9.75	9.75	9.50	9.50	9.50
Centra Gas Ontario	13.50	13.75	13.50	12.50	11.85	12.13	NA	11.25	10.69	c/	c/	c/	c/	c/	c/	c/
Enbridge Gas Distribution	13.25	13.13	13.13	12.30	11.60	11.65	11.88	11.50	10.30	9.51	9.73	9.54	9.66	9.69	NA	9.57
Gaz Metro	14.25	14.25	14.00	12.50	12.00	12.00	12.00	11.50	10.75	9.64	9.72	9.60	9.67	9.89	9.45	9.69
Pacific Northern Gas	15.00	14.00	13.25	NA	11.50	12.75	11.75	11.00	10.75	10.00	10.25	10.00	9.88	10.17	9.80	d/
Terasen Gas	NA	NA	12.25	NA	10.65	12.00	11.00	10.25	10.00	9.25	9.50	9.25	9.13	9.42	9.15	9.03
Union Gas	13.75	13.50	13.50	13.00	12.50	11.75	11.75	11.00	10.44	9.61	9.95	9.95	NA	NA	9.62	9.62
Mean of Gas Distributors	**13.83**	**13.65**	**13.13**	**12.51**	**11.68**	**12.05**	**11.68**	**11.00**	**10.33**	**9.60**	**9.83**	**9.68**	**9.62**	**9.73**	**9.50**	**9.48**
Gas Pipelines (NEB)																
TransCanada PipeLines	13.25	13.50	13.25	12.25	11.25	12.25	11.25	10.67	10.21	9.58	9.90	9.61	9.53	9.79	9.56	9.46
Westcoast Energy	13.25	13.75	12.50	12.25	11.50	12.25	11.25	10.67	10.21	9.58	9.90	9.61	9.53	9.79	9.56	9.46
Mean of Gas Pipelines	**13.25**	**13.63**	**12.88**	**12.25**	**11.38**	**12.25**	**11.25**	**10.67**	**10.21**	**9.58**	**9.90**	**9.61**	**9.53**	**9.79**	**9.56**	**9.46**
Mean of All Companies	**13.66**	**13.58**	**12.99**	**12.19**	**11.54**	**12.13**	**11.36**	**10.88**	**10.20**	**9.52**	**9.78**	**9.67**	**9.57**	**9.68**	**9.56**	**9.47**

Note: A rate freeze was in effect for BC Gas (now Terasen Gas) in 1990 and 1991, BCUC regulation resumed in late 1991.
Nova Scotia Power was privatized in 1992.

a/ Negotiated settlement, details not available.
b/ Negotiated settlement, implicit ROE made public is 10.5%.
c/ Merged with Union Gas.
d/ 2005 rate application currently pending.

Source: Regulatory Decisions

COMPARISON BETWEEN ALLOWED EQUITY RISK PREMIUMS
FOR CANADIAN AND U.S. UTILITIES

	Canadian Utilities			U.S. Utilities		
Year	Allowed ROE	Average Long Canada Yield	Equity Risk Premium	Allowed ROE	Average Long Treasury Yield	Equity Risk Premium
1990	13.66	10.69	2.97	12.69	8.61	4.08
1991	13.58	9.72	3.87	12.51	8.14	4.37
1992	12.99	8.68	4.37	12.06	7.67	4.39
1993	12.19	7.86	4.30	11.37	6.59	4.78
1994	11.54	8.69	2.88	11.34	7.39	3.95
1995	12.13	8.41	3.72	11.51	6.85	4.66
1996	11.36	7.75	3.61	11.29	6.73	4.56
1997	10.88	6.66	4.22	11.34	6.58	4.76
1998	10.20	5.59	4.61	11.59	5.54	6.05
1999	9.52	5.72	3.80	10.74	5.91	4.83
2000	9.78	5.71	4.07	11.41	5.88	5.53
2001	9.67	5.77	3.90	11.04	5.50	5.54
2002	9.57	5.67	3.92	11.10	5.41	5.69
2003	9.68	5.31	4.37	10.98	5.03	5.95
2004	9.56	5.11	4.45	10.73	5.08	5.65
2005 [a/]	9.47	4.72	4.75	10.48	4.70	5.78
Means:						
1990-1993	**13.10**	**9.24**	**3.88**	**12.16**	**7.75**	**4.41**
1994-1998	**11.22**	**7.42**	**3.81**	**11.41**	**6.62**	**4.80**
1999-2005Q1	**9.60**	**5.43**	**4.18**	**10.93**	**5.36**	**5.57**

Note: For U.S. Treasury yields, 30-year maturities used through January 2002; theoretical 30-year yield from February 2002 forward.

a/ Includes all U.S. returns determined in the first quarter of 2005.

Sources: Regulatory Focus, Regulatory Research Associates; Various Canadian Regulatory Decisions; Bank of Canada; Federal Reserve, U.S. Treasury.

SELECTED INDICATORS OF ECONOMIC ACTIVITY
(1989 = 100)

		Canada					United States				
		Gross Domestic Product					Gross Domestic Product				
Year		Constant Dollars (1)	Current Dollars (2)	Industrial Production (3)	GDP Deflator Index (4)	Consumer Price Index (5)	Constant Dollars (6)	Current Dollars (7)	Industrial Production (8)	Implicit Price Index a/ (9)	Consumer Price Index (l0)
1989		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990		100.2	103.4	97.2	103.2	104.8	101.9	105.8	100.9	103.9	105.4
1991		98.1	104.2	93.5	106.2	110.7	101.7	109.3	99.4	107.5	109.8
1992		99.0	106.5	94.5	107.6	112.3	105.1	115.6	102.2	110.0	113.2
1993		101.3	110.6	98.8	109.2	114.4	107.9	121.4	105.6	112.5	116.5
1994		106.1	117.2	105.1	110.4	114.6	112.2	129.0	111.3	114.9	119.5
1995		109.1	122.7	109.9	112.9	117.1	115.0	134.9	116.6	117.2	122.9
1996		110.9	126.8	111.8	114.7	118.9	119.3	142.5	121.6	119.5	126.5
1997		115.6	133.5	118.0	116.1	120.8	124.7	151.4	130.4	121.5	129.5
1998		120.3	139.2	122.2	115.6	122.0	129.9	159.5	138.0	122.8	131.5
1999		127.0	149.4	129.8	117.6	124.1	135.7	169.0	144.2	124.6	134.4
2000		133.6	163.5	139.1	122.5	127.5	140.6	179.0	150.5	127.3	138.9
2001		136.0	168.5	135.1	123.9	130.8	141.7	184.7	145.1	130.4	142.8
2002		140.7	176.1	137.8	125.1	133.7	144.3	191.2	144.7	132.5	145.1
2003		143.5	185.3	138.7	129.1	137.4	148.7	200.6	144.7	134.9	148.4
2004		147.5	196.6	143.2	133.3	139.9	155.3	214.0	150.7	137.8	152.3
2001	1Q	135.6	169.6	137.1	125.1	129.4	141.5	182.7	147.7	129.2	141.7
	2Q	135.8	169.9	136.5	125.1	131.5	141.9	184.7	145.9	130.2	143.2
	3Q	135.6	167.5	134.0	123.5	131.6	141.4	184.8	144.2	130.7	143.4
	4Q	137.0	167.0	132.8	122.0	130.5	141.9	186.5	142.6	131.4	143.0
2002	1Q	138.8	170.5	135.5	122.9	131.3	143.1	188.5	143.4	131.7	143.5
	2Q	140.1	175.4	137.9	125.2	133.3	144.0	190.5	145.0	132.3	145.0
	3Q	141.6	177.7	139.2	125.6	134.7	144.9	192.3	145.6	132.7	145.6
	4Q	142.2	180.5	138.6	126.9	135.4	145.2	193.6	144.8	133.4	146.1
2003	1Q	143.2	184.7	139.3	129.0	137.2	145.9	195.9	144.5	134.3	147.6
	2Q	142.9	183.5	137.3	128.5	137.0	147.4	198.5	143.1	134.7	148.1
	3Q	143.4	185.4	138.1	129.3	137.6	150.0	202.7	144.5	135.1	148.8
	4Q	144.6	187.6	140.1	129.7	137.8	151.6	205.5	146.5	135.6	148.9
2004	1Q	145.6	190.8	140.7	131.0	138.4	153.2	209.2	148.6	136.5	150.2
	2Q	147.2	195.6	142.6	132.9	140.0	154.5	212.6	150.1	137.6	152.4
	3Q	148.3	198.9	144.5	134.1	140.3	156.0	215.4	151.1	138.1	152.9
	4Q	148.9	201.3	145.0	135.2	140.9	157.5	218.7	152.8	138.9	153.8

Note: Data are based on Chain Weighted Indexes.

Source: Statistics Canada; U.S. Bureau of Economic Analysis, Federal Reserve Statistics Survey of Current Business.

TREND IN AFTER-TAX CORPORATE PROFITS IN CANADA AND THE UNITED STATES

Year		Canada		United States	
		Millions of Dollars a/	As Percent of GDP	Billions of Dollars	As Percent of GDP
		(1)	(2)	(3)	(4)
1989		41,095	5.4%	237.7	4.3%
1990		28,102	3.7%	264.1	4.6%
1991		17,905	2.4%	284.4	4.7%
1992		18,131	2.4%	312.4	4.9%
1993		24,839	3.2%	346.1	5.2%
1994		46,122	5.7%	383.3	5.4%
1995		54,132	6.5%	455.6	6.2%
1996		54,096	6.4%	501.4	6.4%
1997		55,682	6.3%	552.1	6.6%
1998		55,332	6.0%	470.0	5.4%
1999		71,359	7.3%	517.2	5.6%
2000		87,803	8.6%	508.2	5.2%
2001		88,894	8.6%	495.6	4.9%
2002		99,540	9.3%	549.9	5.2%
2003		106,655	9.7%	631.5	5.7%
2004		126,083	11.2%	716.2	6.1%
2001	1Q	97,152	9.4%	532.1	5.3%
	2Q	95,000	9.2%	537.1	5.3%
	3Q	84,484	8.2%	473.6	4.7%
	4Q	78,940	7.5%	472.4	4.6%
2002	1Q	88,712	8.4%	526.9	5.1%
	2Q	99,432	9.3%	562.4	5.4%
	3Q	104,596	9.7%	584.8	5.5%
	4Q	105,420	9.7%	622.7	5.9%
2003	1Q	114,160	10.4%	602.1	5.6%
	2Q	100,000	9.2%	600.0	5.5%
	3Q	103,764	9.5%	642.3	5.8%
	4Q	108,696	9.8%	713.9	6.3%
2004	1Q	117,984	10.6%	705.9	6.2%
	2Q	127,200	11.3%	717.1	6.2%
	3Q	128,852	11.4%	679.5	5.8%
	4Q	130,296	11.5%	762.1	6.4%

a/ Corporation profits before taxes less direct taxes (corporate and government business enterprises - Total).

Source: Statistics Canada, U.S. Bureau of Economic Analysis

TREND IN INTEREST RATES AND OUTSTANDING BOND YIELDS
(Percent Per Annum)

		Government Securities										
								Canada Bonds	Canadian	Scotia Capital	Canadian	Exchange Rates
		T-BILLS		10 Year		Long-Term		Over 10	Inflation	Long-Term	A-Rated	(Canadian dollars
Year		Canadian	U.S. a/	Canadian	U.S.	Canadian	U.S. b/	Years c/	Indexed Bonds	Corporates	Utility Bonds d/	in U.S. funds)
1993	q1	5.84	2.96	7.65	6.28	8.27	6.98	8.38	4.57	9.54	9.54	0.79
	q2	4.91	3.01	7.46	5.99	8.11	6.87	8.12	4.39	9.16	9.35	0.79
	q3	4.52	3.02	6.99	5.62	7.63	6.29	7.58	4.21	8.50	8.84	0.77
	q4	4.11	3.09	6.76	5.61	7.42	6.19	7.31	3.94	8.20	8.58	0.75
1994	q1	4.29	3.42	7.09	6.07	7.67	6.74	7.48	3.80	8.33	8.79	0.75
	q2	6.28	3.96	8.49	7.08	8.69	7.33	8.67	4.38	9.52	10.09	0.72
	q3	5.48	4.61	8.99	7.33	9.13	7.55	9.14	4.67	9.92	10.11	0.73
	q4	6.11	5.36	9.12	7.84	9.25	7.94	9.23	4.80	10.00	10.24	0.73
1995	q1	7.99	5.73	8.89	7.48	9.01	7.61	8.99	4.86	9.80	9.99	0.71
	q2	7.34	5.58	8.00	6.62	8.32	6.91	8.19	4.48	8.93	9.38	0.73
	q3	6.47	5.32	8.05	6.32	8.45	6.71	8.28	4.76	8.97	9.30	0.74
	q4	5.76	5.15	7.39	5.89	7.85	6.18	7.66	4.61	8.37	8.44	0.74
1996	q1	5.11	4.92	7.39	5.91	7.95	6.37	7.71	4.78	8.40	8.41	0.73
	q2	4.70	5.04	7.75	6.72	8.17	6.95	7.99	4.87	8.60	8.58	0.73
	q3	4.14	5.13	7.37	6.78	7.88	7.00	7.65	4.71	8.22	8.23	0.73
	q4	2.89	5.08	6.30	6.34	6.99	6.60	6.67	4.07	7.23	7.19	0.74
1997	q1	2.96	5.11	6.54	6.64	7.24	6.91	6.94	4.19	7.50	7.52	0.74
	q2	3.00	5.12	6.49	6.64	7.03	6.90	6.80	4.26	7.28	7.30	0.72
	q3	3.18	5.06	5.85	6.18	6.39	6.45	6.16	4.06	6.64	6.59	0.72
	q4	3.89	5.14	5.55	5.84	5.98	6.07	5.79	4.07	6.38	6.34	0.71
1998	q1	4.44	5.08	5.41	5.63	5.76	5.93	5.60	4.07	6.25	6.22	0.70
	q2	4.82	4.99	5.39	5.58	5.63	5.80	5.53	3.90	6.09	6.05	0.69
	q3	4.92	4.76	5.36	5.12	5.59	5.35	5.50	4.00	6.31	6.23	0.66
	q4	4.75	4.34	5.02	4.72	5.38	5.10	5.23	4.12	6.25	6.16	0.65
1999	q1	4.73	4.41	5.07	5.03	5.34	5.41	5.23	4.13	6.13	6.15	0.66
	q2	4.55	4.53	5.34	5.56	5.54	5.80	5.50	4.07	6.40	6.34	0.68
	q3	4.92	4.76	5.36	5.12	5.59	5.35	5.50	4.00	6.31	6.23	0.66
	q4	4.75	4.34	5.02	4.72	5.38	5.10	5.23	4.12	6.25	6.16	0.65
2000	q1	5.09	5.59	6.22	6.38	5.98	6.16	6.10	3.91	7.14	7.07	0.69
	q2	5.54	5.68	6.01	6.18	5.72	5.96	5.96	3.74	7.21	7.05	0.68
	q3	5.58	6.05	5.79	5.86	5.58	5.78	5.82	3.64	7.07	7.09	0.67
	q4	5.57	6.09	5.54	5.46	5.56	5.62	5.67	3.48	7.10	7.15	0.65
2001	q1	4.96	4.64	5.44	5.01	5.76	5.45	5.69	3.41	7.05	7.18	0.65
	q2	4.36	4.42	5.78	5.40	5.95	5.77	6.00	3.56	7.25	7.40	0.65
	q3	3.64	3.10	5.48	4.84	5.82	5.44	5.86	3.67	7.13	7.24	0.64
	q4	2.11	1.86	5.22	4.72	5.53	5.32	5.58	3.68	6.95	7.20	0.63
2002	q1	2.10	1.78	5.52	5.12	5.78	5.66	5.81	3.71	6.97	7.23	0.63
	q2	2.57	1.74	5.51	5.02	5.83	5.72	5.81	3.52	6.99	7.14	0.65
	q3	2.83	1.66	5.07	4.09	5.56	5.13	5.52	3.36	7.01	7.26	0.63
	q4	2.69	1.33	4.98	3.99	5.48	5.11	5.45	3.39	6.95	7.23	0.64
2003	q1	2.96	1.17	5.01	3.85	5.49	4.93	5.43	3.09	6.92	7.22	0.67
	q2	3.14	1.05	4.59	3.60	5.17	4.71	5.09	3.04	6.42	6.72	0.72
	q3	2.70	0.96	4.75	4.30	5.30	5.28	5.26	3.11	6.40	6.69	0.72
	q4	2.62	0.95	4.78	4.31	5.29	5.22	5.24	2.90	6.24	6.47	0.77
2004	q1	2.12	0.94	4.41	4.00	5.09	4.96	4.99	2.50	5.92	6.17	0.76
	q2	1.98	1.13	4.74	4.60	5.29	5.35	5.22	2.38	6.25	6.48	0.74
	q3	2.23	1.58	4.66	4.26	5.14	5.08	5.13	2.29	6.19	6.37	0.77
	q4	2.53	2.11	4.40	4.22	4.92	4.93	4.87	2.18	5.90	6.09	0.83
2005	q1	2.47	2.67	4.27	4.33	4.72	4.70	4.69	2.05	5.67	5.86	0.82
Annual												
	1990	12.81	7.49	10.76	8.55	10.69	8.61	10.85		11.91	12.13	0.86
	1991	8.73	5.38	9.42	7.86	9.72	8.14	9.76		10.80	11.00	0.84
	1992	6.59	3.43	8.05	7.01	8.68	7.67	8.77	4.62	9.90	10.01	0.82
	1993	4.84	3.02	7.22	5.87	7.86	6.59	7.85	4.28	8.85	9.08	0.77
	1994	5.54	4.34	8.43	7.08	8.69	7.39	8.63	4.41	9.44	9.81	0.73
	1995	6.89	5.44	8.08	6.58	8.41	6.85	8.28	4.68	9.02	9.29	0.73
	1996	4.21	5.04	7.20	6.44	7.75	6.73	7.50	4.61	8.11	8.38	0.73
	1997	3.26	5.11	6.11	6.32	6.66	6.58	6.42	4.14	6.95	7.19	0.72
	1998	4.73	4.79	5.30	5.26	5.59	5.54	5.47	4.02	6.22	6.38	0.68
	1999	4.69	4.71	5.55	5.68	5.72	5.91	5.69	4.07	6.64	6.92	0.67
	2000	5.45	5.85	5.89	5.98	5.71	5.88	5.89	3.69	7.13	7.02	0.67
	2001	3.78	3.34	5.49	4.99	5.77	5.50	5.76	3.59	7.09	7.25	0.65
	2002	2.55	1.63	5.27	4.56	5.67	5.41	5.65	3.49	6.98	7.22	0.64
	2003	2.86	1.03	4.78	4.02	5.31	5.03	5.26	3.04	6.50	6.78	0.72
	2004	2.21	1.44	4.55	4.27	5.11	5.08	5.05	2.34	6.06	6.28	0.77

a/ Rates on new issues.

b/ 20-year constant maturities for 1974-1978; 30-year maturities, 1978-January 2002. Theoretical 30-year yield, February 2002 forward.

c/ Terms to maturity of l0 years or more.

d/ Series is comprised of the CBRS Utilities Index through 1995; CBRS 30-year Utilities Index from 1996- August 2000; a series of liquid long-term utility bonds maintained by Foster Associates from September 2000 forward.

Source: Bank of Canada Review; CBRS; Globe and Mail; Annual Statistical Digest (Federal Reserve System); Federal Reserve Bulletin (various issues), U.S. Treasury website.

TREND IN INTEREST RATES AND OUTSTANDING BOND YIELDS
(Percent Per Annum)

		Government Securities										
		T-BILLS		10 Year		Long-Term		Canada Bonds Over 10	Canadian Inflation	Scotia Capital Long-Term	Canadian A-Rated	Exchange Rates (Canadian dollars
Year		Canadian	U.S. a/	Canadian	U.S.	Canadian	U.S. b/	Years c/	Indexed Bonds	Corporates	Utility Bonds d/	in U.S. funds)
2003	Jan	2.82	1.18	5.02	4.00	5.47	4.99	5.43	3.21	6.85	7.13	0.66
	Feb	2.92	1.20	4.94	3.71	5.44	4.82	5.38	3.00	6.81	7.17	0.67
	Mar	3.14	1.14	5.08	3.83	5.55	4.98	5.48	3.05	7.09	7.35	0.68
	Apr	3.19	1.13	4.90	3.89	5.41	4.93	5.34	3.13	6.70	6.96	0.70
	May	3.17	1.11	4.41	3.37	5.00	4.50	4.89	2.96	6.35	6.64	0.73
	June	3.07	0.90	4.45	3.54	5.09	4.70	5.04	3.04	6.22	6.57	0.74
	July	2.85	0.96	4.84	4.49	5.44	5.51	5.39	3.17	6.48	6.85	0.71
	Aug	2.68	0.98	4.86	4.45	5.35	5.31	5.31	3.12	6.54	6.76	0.72
	Sept	2.58	0.95	4.55	3.96	5.14	5.01	5.09	3.03	6.19	6.45	0.74
	Oct	2.64	0.96	4.83	4.33	5.35	5.25	5.30	3.00	6.39	6.65	0.76
	Nov	2.66	0.93	4.84	4.34	5.33	5.22	5.28	2.92	6.27	6.51	0.77
	Dec	2.57	0.95	4.66	4.27	5.20	5.18	5.14	2.79	6.07	6.26	0.77
2004	Jan	2.25	0.92	4.53	4.16	5.17	5.07	5.09	2.59	6.03	6.26	0.76
	Feb	2.12	0.96	4.36	3.99	5.05	4.95	4.94	2.52	5.87	6.13	0.75
	Mar	1.98	0.95	4.33	3.86	5.04	4.87	4.94	2.39	5.85	6.11	0.76
	Apr	1.92	0.98	4.62	4.53	5.24	5.36	5.15	2.46	6.15	6.41	0.73
	May	2.00	1.08	4.78	4.66	5.31	5.29	5.22	2.31	6.25	6.43	0.73
	June	2.01	1.33	4.83	4.62	5.33	5.41	5.30	2.37	6.36	6.60	0.75
	Jul	2.07	1.45	4.75	4.50	5.24	5.31	5.24	2.31	6.34	6.49	0.75
	Aug	2.17	1.59	4.60	4.13	5.09	4.97	5.08	2.24	6.17	6.33	0.76
	Sep	2.44	1.71	4.63	4.14	5.08	4.97	5.06	2.33	6.05	6.29	0.79
	Oct	2.57	1.91	4.47	4.05	4.94	4.87	4.91	2.26	5.99	6.17	0.82
	Nov	2.55	2.23	4.44	4.36	4.98	5.07	4.93	2.21	5.88	6.16	0.84
	Dec	2.48	2.22	4.30	4.24	4.83	4.86	4.77	2.07	5.82	5.94	0.83
2005	Jan	2.43	2.51	4.21	4.14	4.71	4.62	4.67	2.03	5.66	5.84	0.81
	Feb	2.46	2.76	4.28	4.36	4.75	4.71	4.71	2.09	5.62	5.86	0.81
	Mar	2.52	2.73	4.32	4.50	4.71	4.76	4.68	2.03	5.73	5.87	0.83
	Apr	2.45	2.90	4.14	4.21	4.58	4.53	4.54	1.90	5.04	5.79	0.80
	May	2.45	2.99	3.92	4.00	4.37	4.36	4.31	1.83	5.46	5.59	0.80

a/ Rates on new issues.

b/ 20-year constant maturities for 1974-1978; 30-year maturities, 1978-January 2002. Theoretical 30-year yield, February 2002 forward.

c/ Terms to maturity of l0 years or more.

d/ Series is comprised of the CBRS Utilities Index through 1995; CBRS 30-year Utilities Index from 1996- August 2000; a series of liquid long-term utility bonds maintained by Foster Associates from September 2000 forward.

Note: Monthly data reflect rate in effect at end of month.

Source: Bank of Canada Review; CBRS; Globe and Mail; Annual Statistical Digest (Federal Reserve System); Federal Reserve Bulletin (various issues), U.S. Treasury website.

HISTORIC EQUITY MARKET
RISK PREMIUMS

Canada
(1947-2004)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	12.1	6.9	5.3
Geometric	10.9	6.4	4.5

United States
(1947-2004)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	13.2	6.3	7.0
Geometric	11.9	5.8	6.2

United Kingdom
(1947-2004)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	14.9	8.9	6.0
Geometric	11.9	6.3	5.6

Source: Ibbotson Associates: Stocks, Bonds, Bills and Inflation: 2005 Yearbook Market Results 1924-2004; Standardandpoors.com; Canadian Institute of Actuaries, Report on Canadian Economic Statistics 1924-2004; TSX.com; and Barclays, Equity Gilt Study.

25-YEAR ROLLING AVERAGE MARKET RETURNS FOR CANADA AND THE U.S.

	Canada		U.S.	
	Stock Returns	Long Government Bond Returns	Stock Returns	Long Government Bond Returns
1947-1971	12.7%	2.9%	13.7%	2.0%
1948-1972	13.8%	2.8%	14.3%	2.3%
1949-1973	13.3%	3.0%	13.5%	2.1%
1950-1974	11.3%	2.7%	11.7%	2.0%
1951-1975	10.1%	2.8%	11.9%	2.4%
1952-1976	9.6%	3.7%	11.9%	3.2%
1953-1977	10.1%	3.9%	10.8%	3.2%
1954-1978	11.2%	3.8%	11.1%	3.0%
1955-1979	11.4%	3.3%	9.8%	2.6%
1956-1980	11.5%	3.4%	9.8%	2.5%
1957-1981	10.6%	3.4%	9.4%	2.8%
1958-1982	11.6%	4.9%	10.6%	4.1%
1959-1983	11.8%	5.5%	9.8%	4.4%
1960-1984	11.5%	6.3%	9.6%	5.1%
1961-1985	12.4%	7.0%	10.8%	5.8%
1962-1986	11.5%	7.3%	10.5%	6.7%
1963-1987	12.0%	7.2%	11.1%	6.4%
1964-1988	11.8%	7.4%	10.8%	6.7%
1965-1989	11.6%	7.8%	11.4%	7.3%
1966-1990	10.8%	7.9%	10.8%	7.5%
1967-1991	11.5%	8.8%	12.4%	8.1%
1968-1992	10.8%	9.4%	11.8%	8.8%
1969-1993	11.2%	10.4%	11.7%	9.6%
1970-1994	11.2%	10.0%	12.1%	9.4%
1971-1995	11.9%	10.2%	13.5%	10.2%
1972-1996	12.7%	10.3%	13.8%	9.7%
1973-1997	12.2%	11.0%	14.4%	10.1%
1974-1998	12.2%	11.5%	16.1%	10.6%
1975-1999	14.5%	11.3%	18.0%	10.1%
1976-2000	14.0%	11.7%	16.2%	10.6%
1977-2001	13.1%	11.1%	14.7%	10.1%
1978-2002	12.2%	11.3%	14.1%	10.8%
1979-2003	12.0%	11.5%	15.0%	10.9%
1980-2004	**10.8%**	**12.0%**	**14.7%**	**11.3%**
Min	**9.6%**	**2.7%**	**9.4%**	**2.0%**
Max	**14.5%**	**12.0%**	**18.0%**	**11.3%**
Mean	**11.8%**	**7.3%**	**12.4%**	**6.5%**
Stdev.	**1.1%**	**3.4%**	**2.2%**	**3.4%**
+1 Std	**12.9%**	**10.6%**	**14.6%**	**9.9%**
-1 Std dev.	**10.7%**	**3.9%**	**10.3%**	**3.2%**

Source: Ibbotson Associates: Stocks, Bonds, Bills and Inflation: 2005 Yearbook Market Results 1924-2004, Standardandpoors.com; Canadian Institute of Actuaries, Report on Canadian Economic Statistics 1924-2004; and TSX.com

CUMULATIVE AVERAGE MARKET RETURNS FOR CANADA AND THE U.S.
(1947 Forward)

	Canada		U.S.	
	Stock Returns	Long Government Bond Returns	Stock Returns	Long Government Bond Returns
1947-1971	12.7%	2.8%	13.7%	2.0%
1947-1972	13.2%	2.8%	13.9%	2.1%
1947-1973	12.8%	2.6%	12.9%	2.0%
1947-1974	11.4%	2.6%	11.5%	2.1%
1947-1975	11.6%	3.2%	12.4%	2.3%
1947-1976	11.6%	3.3%	12.7%	2.8%
1947-1977	11.6%	3.2%	12.1%	2.7%
1947-1978	12.1%	3.0%	11.9%	2.6%
1947-1979	13.1%	3.0%	12.1%	2.5%
1947-1980	13.6%	2.8%	12.7%	2.3%
1947-1981	12.9%	3.9%	12.2%	2.3%
1947-1982	12.7%	4.1%	12.5%	3.3%
1947-1983	13.4%	4.4%	12.7%	3.2%
1947-1984	12.9%	4.9%	12.6%	3.6%
1947-1985	13.3%	5.2%	13.1%	4.3%
1947-1986	13.1%	5.1%	13.2%	4.8%
1947-1987	13.0%	5.2%	13.0%	4.6%
1947-1988	12.9%	5.5%	13.1%	4.7%
1947-1989	13.1%	5.4%	13.5%	5.0%
1947-1990	12.5%	5.9%	13.2%	5.0%
1947-1991	12.5%	6.0%	13.5%	5.4%
1947-1992	12.2%	6.4%	13.4%	5.4%
1947-1993	12.6%	6.0%	13.3%	5.7%
1947-1994	12.3%	6.4%	13.1%	5.4%
1947-1995	12.4%	6.6%	13.6%	6.0%
1947-1996	12.7%	6.8%	13.8%	5.8%
1947-1997	12.7%	7.0%	14.2%	6.0%
1947-1998	12.5%	6.7%	14.4%	6.1%
1947-1999	12.8%	6.8%	14.6%	5.9%
1947-2000	12.7%	6.8%	14.1%	6.1%
1947-2001	12.3%	6.8%	13.7%	6.1%
1947-2002	11.8%	6.8%	13.0%	6.3%
1947-2003	12.1%	6.9%	13.3%	6.2%
1947-2004	12.1%	6.9%	13.2%	6.3%
Min	**11.4%**	**2.6%**	**11.5%**	**2.0%**
Max	**13.6%**	**7.0%**	**14.6%**	**6.3%**
Mean	**12.6%**	**5.1%**	**13.1%**	**4.3%**
Stdev.	**0.6%**	**1.6%**	**0.7%**	**1.6%**
+1 Std	**13.1%**	**6.7%**	**13.9%**	**5.9%**
-1 Std dev.	**12.0%**	**3.4%**	**12.4%**	**2.7%**

Source: Ibbotson Associates: Stocks, Bonds, Bills and Inflation: 2005 Yearbook Market Results 1924-2004, Standardandpoors.com; Canadian Institute of Actuaries, Report on Canadian Economic Statistics 1924-2004; and TSX.com

CUMULATIVE AVERAGE MARKET RETURNS FOR CANADA AND THE U.S.
(2004 Backward)

	Canada		U.S.	
	Stock Returns	Long Government Bond Returns	Stock Returns	Long Government Bond Returns
1947-2004	12.1%	6.9%	13.2%	6.3%
1948-2004	12.3%	6.9%	13.4%	6.4%
1949-2004	12.3%	7.1%	13.5%	6.5%
1950-2004	12.2%	7.1%	13.4%	6.5%
1951-2004	11.5%	7.3%	13.1%	6.6%
1952-2004	11.3%	7.5%	12.9%	6.8%
1953-2004	11.5%	7.6%	12.8%	6.9%
1954-2004	11.7%	7.7%	13.0%	7.0%
1955-2004	11.1%	7.6%	12.3%	7.0%
1956-2004	10.8%	7.8%	11.9%	7.1%
1957-2004	10.7%	8.0%	12.0%	7.4%
1958-2004	11.4%	8.1%	12.5%	7.4%
1959-2004	11.0%	8.4%	11.8%	7.7%
1960-2004	11.1%	8.6%	11.8%	7.9%
1961-2004	11.3%	8.7%	12.0%	7.8%
1962-2004	10.8%	8.7%	11.7%	7.9%
1963-2004	11.2%	8.8%	12.2%	8.0%
1964-2004	11.1%	8.9%	11.9%	8.1%
1965-2004	10.8%	8.9%	11.8%	8.2%
1966-2004	10.9%	9.1%	11.8%	8.4%
1967-2004	11.3%	9.3%	12.4%	8.6%
1968-2004	11.2%	9.7%	12.0%	9.0%
1969-2004	10.9%	10.0%	12.1%	9.3%
1970-2004	11.2%	10.3%	12.7%	9.7%
1971-2004	11.6%	9.9%	12.9%	9.6%
1972-2004	11.7%	9.9%	12.9%	9.5%
1973-2004	11.2%	10.2%	12.7%	9.6%
1974-2004	11.6%	10.4%	13.6%	10.0%
1975-2004	12.8%	10.9%	14.9%	10.2%
1976-2004	12.6%	11.1%	14.1%	10.2%
1977-2004	12.7%	10.8%	13.8%	10.0%
1978-2004	12.8%	11.0%	14.6%	10.4%
1979-2004	12.1%	11.4%	14.9%	10.8%
1980-2004	10.8%	12.0%	14.7%	11.3%
Min	**10.7%**	**6.9%**	**11.7%**	**6.3%**
Max	**12.8%**	**12.0%**	**14.9%**	**11.3%**
Mean	**11.5%**	**9.0%**	**12.9%**	**8.4%**
Stdev.	**0.6%**	**1.4%**	**1.0%**	**1.5%**
+1 Std	**12.2%**	**10.5%**	**13.8%**	**9.8%**
-1 Std dev.	**10.9%**	**7.6%**	**11.9%**	**6.9%**

Source: Ibbotson Associates: Stocks, Bonds, Bills and Inflation: 2005 Yearbook Market Results 1924-2004, Standardandpoors.com; Canadian Institute of Actuaries, Report on Canadian Economic Statistics 1924-2004; and TSX.com

TSE 300 SUB-INDEX COMPOUND RETURNS AND BETAS

	Compound Returns						Betas					
	56-97	56-03	64-73	74-83	84-93	94-03	56-97	56-03	64-73	74-83	84-93	94-03
Metals/Minerals	0.08	0.08	0.07	0.11	0.07	0.07	1.23	1.15	1.14	1.22	1.37	0.87
Gold	0.10	0.10	0.16	0.16	0.11	-0.03	0.96	0.85	0.36	1.31	1.24	0.64
Oil and Gas	0.08	0.10	0.15	0.12	0.05	0.15	1.20	1.06	1.25	1.40	0.98	0.52
Paper/Forest	0.07	0.07	0.05	0.12	0.10	0.03	1.07	1.02	1.15	1.00	1.27	0.85
Consumer	0.12	0.11	0.10	0.14	0.11	0.10	0.86	0.83	0.84	0.90	0.89	0.73
Industrial	0.10	0.07	0.08	0.11	0.06	0.01	1.02	1.17	1.11	0.87	1.08	1.69
Real Estate [1/]	0.05	0.05	0.01	0.17	-0.02	0.01	1.18	1.00	1.21	1.28	1.06	0.46
Trans.	0.11	0.10	0.13	0.18	0.03	0.09	1.04	0.94	0.94	1.08	1.22	0.62
Pipes	0.12	0.12	0.05	0.14	0.14	0.13	0.85	0.68	0.80	0.92	0.76	0.02
Utilities	0.11	0.11	0.03	0.18	0.11	0.16	0.48	0.54	0.50	0.47	0.40	0.79
Comm./Media	0.15	0.13	0.19	0.15	0.13	0.07	0.77	0.77	0.96	0.69	0.95	0.80
Mrchnt's	0.11	0.10	0.11	0.12	0.09	0.07	0.86	0.78	0.93	0.84	0.83	0.46
Finance	0.13	0.12	0.12	0.12	0.12	0.18	0.85	0.83	0.95	0.71	0.93	0.77
Mang't.	0.11	0.11	0.13	0.15	0.09	0.14	1.03	0.94	1.26	0.97	1.20	0.68
Intercept							**0.18**	**0.18**	**0.12**	**0.15**	**0.14**	**0.12**
Adjusted R Square							**44%**	**47%**	**1%**	**1%**	**11%**	**9%**
Beta							**-0.082**	**-0.09**	**-0.020**	**-0.008**	**-0.056**	**-0.053**

1/ Data only available starting July 1961

Source: TSX Review

S&P/TSX COMPOSITE SECTOR COMPOUND RETURNS AND BETAS

	Compound Returns 1/			Betas		
	88-97	88-04	95-04	88-97	88-04	95-04
Consumer Discretionary	0.102	0.082	0.073	0.904	0.808	0.763
Consumer Staples	0.127	0.150	0.210	0.727	0.361	0.206
Energy	0.084	0.109	0.153	0.765	0.576	0.537
Financials	0.183	0.154	0.176	1.039	0.805	0.704
Health Care	0.155	0.061	0.019	0.807	0.890	0.940
Industrials	0.083	0.055	0.067	1.131	0.985	0.898
Information Technology	0.218	0.082	0.020	1.213	1.895	2.222
Materials	0.034	0.044	0.020	1.257	0.867	0.729
Telecommunications Sector	0.154	0.141	0.148	0.578	0.772	0.868
Utilities	0.115	0.104	0.094	0.624	0.240	0.078
Intercept				**0.14**	**0.13**	**0.15**
Adjusted R Square				**1%**	**15%**	**30%**
Beta				**-0.017**	**-0.03**	**-0.066**

1/ Data only available starting December 1988

Source: TSX Review

BETAS FOR REGULATED CANADIAN UTILITIES

"Raw" Betas
Five Year Period Ending:

COMPANY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Canadian Utilities	0.45	0.54	0.48	0.55	0.63	0.62	0.54	0.38	0.27	0.19	0.05	0.03
Emera	N/A	N/A	N/A	0.52	0.40	0.55	0.41	0.27	0.20	0.15	-0.05	0.01
Enbridge	0.24	0.26	0.32	0.44	0.43	0.48	0.26	0.07	-0.10	-0.18	-0.37	-0.32
Fortis	0.35	0.44	0.51	0.37	0.30	0.49	0.33	0.23	0.14	0.13	-0.06	0.01
Terasen Inc	0.41	0.54	0.59	0.54	0.47	0.48	0.36	0.25	0.18	0.12	0.02	-0.02
TransCanada Pipelines	0.40	0.57	0.56	0.52	0.36	0.55	0.21	0.15	-0.08	-0.09	-0.38	-0.16
Mean	**0.37**	**0.47**	**0.49**	**0.49**	**0.43**	**0.53**	**0.35**	**0.23**	**0.10**	**0.05**	**-0.13**	**-0.08**
Median	**0.38**	**0.49**	**0.50**	**0.52**	**0.42**	**0.52**	**0.35**	**0.24**	**0.16**	**0.13**	**-0.06**	**-0.01**
TSE Gas/Electric Index	0.42	0.48	0.52	0.52	0.46	0.55	0.38	0.21	0.17	0.14	NA	NA
S&P/TSX Utilities	0.55	0.63	0.67	0.65	0.53	0.55	0.30	0.14	-0.03	-0.06	-0.25	-0.13

Adjusted Betas[1/]
Five Year Period Ending:

COMPANY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Canadian Utilities	0.63	0.69	0.65	0.70	0.75	0.75	0.69	0.58	0.51	0.46	0.36	0.35
Emera	N/A	N/A	N/A	0.68	0.60	0.70	0.60	0.51	0.46	0.43	0.30	0.34
Enbridge	0.49	0.50	0.54	0.62	0.62	0.65	0.50	0.38	0.26	0.21	0.08	0.12
Fortis	0.56	0.62	0.67	0.58	0.53	0.66	0.55	0.48	0.42	0.42	0.29	0.34
Terasen Inc	0.60	0.69	0.73	0.69	0.64	0.65	0.57	0.50	0.45	0.41	0.34	0.32
TransCanada Pipelines	0.60	0.71	0.71	0.68	0.57	0.70	0.47	0.43	0.28	0.27	0.08	0.22
Mean	**0.58**	**0.64**	**0.66**	**0.66**	**0.62**	**0.68**	**0.57**	**0.48**	**0.40**	**0.37**	**0.24**	**0.28**
Median	**0.58**	**0.66**	**0.66**	**0.68**	**0.61**	**0.68**	**0.56**	**0.49**	**0.44**	**0.41**	**0.29**	**0.33**
TSE Gas/Electric Index	0.61	0.65	0.68	0.68	0.64	0.70	0.58	0.47	0.44	0.42	NA	NA
S&P/TSX Utilities	0.70	0.75	0.78	0.77	0.69	0.70	0.53	0.42	0.31	0.29	0.16	0.24

1/ Adjusted beta = "raw" beta * 67% + market beta of 1.0 * 33%.

Source: TSX Review.

BETAS FOR REGULATED CANADIAN UTILITIES (EXCLUDING NORTEL)

	Raw Betas Five-Year Period Ending					Adjusted Betas Five-Year Period Ending				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Canadian Utilities	0.57	0.46	0.37	0.24	0.20	0.71	0.64	0.58	0.49	0.46
Emera	0.43	0.35	0.29	0.02	0.07	0.62	0.56	0.52	0.34	0.38
Enbridge	0.29	0.13	0.05	-0.15	0.01	0.52	0.42	0.36	0.23	0.34
Fortis	0.36	0.28	0.28	0.05	0.07	0.57	0.52	0.52	0.36	0.38
Terasen Inc	0.41	0.35	0.28	0.22	0.22	0.60	0.56	0.52	0.48	0.48
TransCanada Pipelines	0.40	0.15	0.16	-0.19	0.03	0.60	0.43	0.44	0.20	0.35
Mean	**0.41**	**0.29**	**0.24**	**0.03**	**0.10**	**0.60**	**0.52**	**0.49**	**0.35**	**0.40**
Median	**0.41**	**0.32**	**0.28**	**0.04**	**0.07**	**0.60**	**0.54**	**0.52**	**0.35**	**0.38**
TSE Gas/Electric Index	0.40	0.37	0.33	NA	NA	0.60	0.58	0.55	NA	NA
S&P/TSX Utilities	0.35	0.18	0.16	-0.05	0.11	0.56	0.45	0.44	0.30	0.40

Source: TSX Review

5-YEAR PRICE BETAS FOR S&P/TSX SECTOR INDICES

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Consumer Discretionary	0.91	0.81	0.82	0.82	0.80	0.73	0.69	0.68	0.73	0.74	0.80
Consumer Staples	0.75	0.68	0.65	0.62	0.60	0.44	0.23	0.10	0.08	-0.08	-0.07
Energy	0.68	0.93	0.92	0.97	0.85	0.90	0.66	0.49	0.43	0.26	0.17
Financials	1.14	0.93	1.02	0.94	1.12	1.00	0.78	0.66	0.66	0.38	0.39
Health Care	0.84	0.35	0.39	0.60	1.01	1.00	1.09	0.98	0.99	0.85	0.82
Industrials	1.15	1.20	1.10	0.97	0.93	0.78	0.72	0.82	0.86	0.91	1.04
Information Technology	1.12	1.26	1.36	1.57	1.41	1.55	1.78	2.13	2.28	2.74	2.87
Materials	1.26	1.39	1.27	1.32	1.12	1.04	0.74	0.60	0.57	0.43	0.41
Telecommunication Services	0.61	0.56	0.64	0.64	0.92	1.11	0.92	0.94	0.93	0.83	0.58
Utilities	0.63	0.67	0.65	0.53	0.55	0.30	0.14	-0.03	-0.06	-0.25	-0.13

Source: TSX Review

RECENT SUB-PERIOD BETAS FOR REGULATED CANADIAN UTILITIES

Including Nortel in the Market Index

	Raw				Adjusted			
COMPANY	**1/2000 to 6/2002**	**1/2002 to 12/2004**	**4/2002 to 12/2004**	**7/2002 to 12/2004**	**1/2000 to 6/2002**	**1/2002 to 12/2004**	**4/2002 to 12/2004**	**7/2002 to 12/2004**
Canadian Utilities	-0.09	0.42	0.41	0.52	0.27	0.61	0.61	0.68
Emera	-0.04	0.12	0.11	0.16	0.31	0.41	0.40	0.43
Enbridge	-0.52	0.29	0.30	0.35	-0.02	0.52	0.53	0.56
Fortis	-0.12	0.36	0.37	0.44	0.25	0.57	0.58	0.62
Terasen Inc	-0.07	0.16	0.14	0.18	0.28	0.44	0.42	0.45
TransCanada Pipelines	-0.34	0.33	0.38	0.47	0.10	0.55	0.58	0.65
Mean	**-0.20**	**0.28**	**0.29**	**0.35**	**0.20**	**0.52**	**0.52**	**0.57**
Median	**-0.11**	**0.31**	**0.34**	**0.39**	**0.26**	**0.54**	**0.56**	**0.59**
S&P/TSX Utilities	-0.30	0.34	0.36	0.44	0.13	0.56	0.57	0.62

Excluding Nortel from the Market Index

	Raw				Adjusted			
COMPANY	**1/2000 to 6/2002**	**1/2002 to 12/2004**	**4/2002 to 12/2004**	**7/2002 to 12/2004**	**1/2000 to 6/2002**	**1/2002 to 12/2004**	**4/2002 to 12/2004**	**7/2002 to 12/2004**
Canadian Utilities	0.06	0.42	0.38	0.46	0.37	0.61	0.59	0.64
Emera	0.00	0.15	0.14	0.19	0.33	0.43	0.43	0.46
Enbridge	-0.33	0.50	0.52	0.58	0.11	0.67	0.68	0.72
Fortis	-0.11	0.32	0.31	0.37	0.26	0.54	0.54	0.58
Terasen Inc	0.13	0.35	0.32	0.37	0.42	0.56	0.54	0.58
TransCanada Pipelines	-0.29	0.45	0.49	0.57	0.14	0.63	0.66	0.71
Mean	**-0.09**	**0.36**	**0.36**	**0.42**	**0.27**	**0.57**	**0.57**	**0.61**
Median	**-0.05**	**0.38**	**0.35**	**0.42**	**0.29**	**0.59**	**0.56**	**0.61**
S&P/TSX Utilities	-0.14	0.46	0.48	0.55	0.23	0.64	0.65	0.70

Source: TSX Review

FIVE-YEAR STANDARD DEVIATIONS OF MARKET RETURNS FOR 10 SECTOR INDICES OF S&P/TSX

Index	1997 (%)	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)
S&P / TSX	**3.57**	**4.68**	**4.84**	**5.40**	**5.87**	**5.83**	**4.97**	**4.59**
10 Sector Indices								
Consumer Discretionary	3.69	4.36	4.62	4.99	5.38	5.73	5.35	5.00
Consumer Staples	3.57	4.01	3.70	4.04	4.17	4.76	4.45	4.37
Energy	5.60	6.16	7.31	7.97	8.30	8.10	6.98	5.72
Financials	4.27	5.89	5.92	6.22	6.17	6.06	4.58	4.23
Health Care	6.62	7.73	8.19	9.38	9.00	9.39	8.93	8.68
Industrials	4.13	4.93	4.69	5.12	6.50	7.18	6.92	6.87
Information Technology	7.99	9.17	10.35	12.27	15.16	17.12	16.64	17.09
Materials	5.87	6.98	7.22	7.29	7.40	7.25	5.89	5.65
Telecommunication Services	3.66	5.82	7.37	7.87	8.46	8.71	7.54	5.74
Utilities	3.12	3.80	4.00	4.80	5.06	4.88	4.49	4.09
Mean	**4.85**	**5.89**	**6.34**	**7.00**	**7.56**	**7.92**	**7.18**	**6.75**
Median	**4.20**	**5.85**	**6.57**	**6.76**	**6.95**	**7.21**	**6.41**	**5.68**

Source: TSX Review

CANADIAN AND U.S. UTILITY
HISTORIC EQUITY RISK PREMIUMS

CANADIAN UTILITIES INDEX
(1956-2004)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	12.2	7.8	4.4
Geometric	11.1	7.3	3.8

S&P / MOODY'S ELECTRIC INDEX
(1947-2004)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	11.3	6.3	5.0
Geometric	10.1	5.8	4.3

S&P / MOODY'S GAS DISTRIBUTION INDEX
(1947-2004)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	12.3	6.3	6.0
Geometric	11.2	5.8	5.4

Note: The Canadian data reflect the S&P/TSX Utilities Index from 1988-2004; and the TSE Gas/Electric Index from 1956-1987. The U.S. data reflect S&P's utility indices from 1947 to 1984, when S&P eliminated its gas distribution index. The 1984-2001 U.S. data are for Moody's Gas and Electric indices. The Moody's Gas and Electric Indices were terminated in July 2002. The 2002-2004 returns for the U.S. gas and electric utilities were estimated using simple averages of the prices and dividends for the utilities that were included in Moody's indices as of the end of 2001.

Sources: TSX Review; Bank of Canada Review; Standard & Poor's Analysts' Handbook; Ibbotson Associates, Stocks, Bonds, Bills and Inflation 2005 Yearbook Market Results 1924-2004; Mergent Corporate News Reports.

INDIVIDUAL COMPANY RISK DATA FOR
SELECTED LOCAL NATURAL GAS DISTRIBUTION COMPANIES

	Value Line							S & P			
Company	Safety Rank	Earnings Predictability	Financial Strength	Beta	Forecast Common Equity Ratio 2008-2010	Forecast Return On Average Common Equity 2008-2010	Dividend Payout Forecast 2008-2010	Business Profile	Debt Rating	Average Market / Book Ratio 1993-2004	Repriced Equity / Book 2004
AGL RESOURCES INC	2	65	B++	0.85	54.0	11.9	49%	4	A-	176	135
NEW JERSEY RESOURCES	2	100	B++	0.75	69.5	11.8	47%	2	A+	212	144
NICOR INC	3	80	A	1.10	63.0	13.5	79%	3	AA	227	260
NORTHWEST NATURAL GAS	3	80	A	0.70	63.0	10.8	59%	1	A+	154	157
PEOPLES ENERGY CORP	1	80	A	0.80	53.5	11.0	73%	5	A-	166	272
PIEDMONT NATURAL GAS	2	80	B++	0.75	62.5	11.9	69%	2	A	200	133
WGL HOLDINGS INC	1	60	A	0.75	63.5	13.1	54%	3	AA-	174	163
MEAN	**2**	**78**	**A**	**0.81**	**61.3**	**12.0**	**61%**	**3**	**A+**	**187**	**180**
MEDIAN	**2**	**80**	**A**	**0.75**	**63.0**	**11.9**	**59%**	**3**	**A+**	**176**	**157**

1/ For subsidiary, New Jersey Natural Gas

Source: Value Line (June 17, 2005)
Standard & Poor's "U.S. Utility and Power Ranking List" (June 17, 2005)

DCF-BASED EQUITY RISK PREMIUM TEST FOR SELECTED U.S. LOCAL NATURAL GAS DISTRIBUTION COMPANIES (Annual Averages of Monthly Data)

	Dividend Yields [1/]	I/B/E/S EPS Growth Forecast	DCF Cost	30-Year Treasury Yield	Risk Premium
1993	5.2	5.7	10.9	6.6	4.3
1994	6.0	4.9	10.9	7.4	3.5
1995	5.9	4.5	10.4	6.9	3.5
1996	5.3	4.9	10.2	6.7	3.5
1997	4.9	4.8	9.7	6.6	3.1
1998	4.6	5.4	10.1	5.5	4.5
1999	5.0	5.3	10.3	5.9	4.4
2000	5.3	5.4	10.7	5.9	4.8
2001	4.8	5.7	10.5	5.5	5.0
2002	4.9	5.6	10.5	5.4	5.1
2003	4.8	5.2	10.0	5.0	5.0
2004	4.4	4.4	8.8	5.1	3.7
Means for 30-year Treasury yields:					
5.5% and below			**9.8**	**5.1**	**4.7**
5.6 - 6.0%			**10.3**	**5.8**	**4.5**
6.1 - 6.5%			**10.2**	**6.2**	**3.9**
Over 6.5%			**10.6**	**7.1**	**3.5**
All periods			**10.2**	**6.0**	**4.2**

[1/] Dividend Yield is adjusted for half of I/B/E/S growth

Source: Standard and Poor's Research Insight, I/B/E/S and the U.S. Federal Reserve

INDIVIDUAL COMPANY RISK DATA FOR SELECTED LOW RISK
ELECTRIC AND LOCAL NATURAL GAS DISTRIBUTION UTILITIES

	Value Line							S & P			
Company	Safety Rank	Earnings Predictability	Financial Strength	Beta	Forecast Common Equity Ratio 2008-2010	Forecast Return On Average Common Equity 2008-2010	Dividend Payout Forecast 2008-2010	Business Profile	Debt Rating	Average Market/ Book Ratio 1993-2004	Repriced Equity / Book 2004
AGL Resources	2	65	B++	0.85	54.0	11.9	49%	4	A-	176	135
Consolidated Edison	1	90	A++	0.60	51.5	9.3	79%	2	A	148	155
KeySpan Corp.	2	20	B++	0.80	50.0	11.0	62%	4	A	138	155
New Jersey Resources	2	100	B++	0.75	69.5	11.8	47%	2	A+	212	144
NICOR Inc.	3	80	A	1.10	63.0	13.5	79%	3	AA	227	260
Northwest Nat. Gas	3	80	A	0.70	63.0	10.8	59%	1	A+	154	157
NSTAR	1	95	A	0.70	52.5	12.0	68%	1	A	165	156
Peoples Energy	1	80	A	0.80	53.5	11.0	73%	5	A-	166	272
Piedmont Natural Gas	2	80	B++	0.75	62.5	11.9	69%	2	A	200	133
SCANA Corp.	2	85	A	0.75	53.5	11.3	58%	4	A-	164	142
Southern Co.	1	90	A	0.65	47.5	13.9	68%	4	A	200	159
Vectren Corp.	2	70	A+	0.75	55.5	11.5	69%	4	A-	194	120
WGL Holdings Inc.	1	60	A	0.75	63.5	13.1	54%	3	AA-	174	163
WPS Resources	2	85	B++	0.75	55.5	11.8	56%	5	A	164	133
MEAN	**2**	**77**	**A**	**0.76**	**56.8**	**11.8**	64%	3	A	177	163
MEDIAN	**2**	**80**	**A**	**0.75**	**54.8**	**11.8**	65%	4	A	170	155

Source: Value Line (April 1, 2005, June 3, 2005 and June 17, 2005)
Standard & Poor's "U.S. Power and Utility Ranking" (June 17, 2005)

DCF COSTS OF EQUITY FOR SELECTED LOW RISK
ELECTRIC AND LOCAL NATURAL GAS DISTRIBUTION UTILITIES
(BASED ON I/B/E/S MEDIAN LONG-TERM GROWTH FORECASTS)

Company	Dividend Yield	Adjusted Dividend Yield [1/]	Long-Term I/B/E/S Growth Forecasts Median	DCF Cost of Equity
AGL Resources	3.58	3.72	4.0	7.7
Consolidated Edison	5.30	5.46	3.0	8.5
KeySpan Corp.	4.69	4.85	3.5	8.3
New Jersey Resources	3.09	3.26	5.5	8.8
NICOR Inc.	4.99	5.09	2.0	7.1
Northwest Nat. Gas	3.65	3.86	5.8	9.6
NSTAR	4.19	4.40	5.0	9.4
Peoples Energy	5.23	5.44	4.0	9.4
Piedmont Natural Gas	3.97	4.16	5.0	9.2
SCANA Corp.	4.04	4.22	4.5	8.7
Southern Co.	4.58	4.81	5.0	9.8
Vectren Corp.	4.42	4.61	4.5	9.1
WGL Holdings Inc.	4.32	4.49	4.0	8.5
WPS Resources	4.19	4.38	4.5	8.9
Mean	**4.30**	**4.48**	**4.3**	**8.8**
Median	**4.25**	**4.45**	**4.5**	**8.8**

1/ Adjusted dividend yield plus growth ([DY*(1+(Growth))] + Growth);
Prices based on average monthly high/low price for three months ended May 2005.

Source: Standard & Poor's Research Insight; I/B/E/S (May 2005)

DCF COSTS OF EQUITY FOR SELECTED LOW RISK
ELECTRIC AND LOCAL NATURAL GAS DISTRIBUTION UTILITIES
(BASED ON VALUE LINE LONG-TERM EPS GROWTH FORECASTS)

Company	Dividend Yield	Adjusted Dividend Yield [1/]	Value Line Long-Term EPS Growth Forecasts	DCF Cost of Equity
AGL Resources	3.58	3.76	5.0	8.8
Consolidated Edison	5.30	5.38	1.5	6.9
KeySpan Corp.	4.69	4.73	1.0	5.7
New Jersey Resources	3.09	3.34	8.0	11.3
NICOR Inc.	4.99	5.04	1.0	6.0
Northwest Nat. Gas	3.65	3.92	7.5	11.4
NSTAR	4.19	4.30	2.5	6.8
Peoples Energy	5.23	5.28	1.0	6.3
Piedmont Natural Gas	3.97	4.26	7.5	11.8
SCANA Corp.	4.04	4.22	4.5	8.7
Southern Co.	4.58	4.77	4.0	8.8
Vectren Corp.	4.42	4.61	4.5	9.1
WGL Holdings Inc.	4.32	4.60	6.5	11.1
WPS Resources	4.19	4.46	6.5	11.0
Mean	**4.30**	**4.48**	**4.4**	**8.8**
Median	**4.25**	**4.53**	**4.5**	**8.8**

1/ Adjusted dividend yield plus growth ([DY*(1+(Growth))] + Growth);
Prices based on average monthly high/low price in three months ending May 2005.

Source: Standard & Poor's Research Insight; Value Line (April and June 2005)

DCF COSTS OF EQUITY FOR SELECTED LOW RISK
ELECTRIC AND LOCAL NATURAL GAS DISTRIBUTION UTILITIES
(TWO-STAGE MODEL)

Company	Annualized Last Paid Dividend (1)	Average High/Low March - May 2005 Price (2)	Stage 1 I/B/E/S EPS Forecasts (3)	Stage 2 GDP Growth [1/] (4)	DCF Cost of Equity [2/] (5)
AGL Resources	1.24	34.65	4.0	5.5	8.9
Consolidated Edison	2.28	43.04	3.0	5.5	10.5
KeySpan Corp.	1.82	38.84	3.5	5.5	10.0
New Jersey Resources	1.36	43.97	5.5	5.5	8.6
NICOR Inc.	1.86	37.26	2.0	5.5	9.9
Northwest Nat. Gas	1.30	35.65	5.8	5.5	9.3
NSTAR	2.32	55.34	5.0	5.5	9.7
Peoples Energy	2.18	41.67	4.0	5.5	10.6
Piedmont Natural Gas	0.92	23.20	5.0	5.5	9.5
SCANA Corp.	1.56	38.59	4.5	5.5	9.5
Southern Co.	1.49	32.56	5.0	5.5	10.2
Vectren Corp.	1.18	26.73	4.5	5.5	9.9
WGL Holdings Inc.	1.33	30.86	4.0	5.5	9.7
WPS Resources	2.22	53.00	4.5	5.5	9.6
Mean	**1.65**	**38.24**	**4.3**	**5.5**	**9.7**
Median	**1.53**	**37.92**	**4.5**	**5.5**	**9.7**

1/ Consensus forecast of nominal rate of GDP growth, 2007-16

2/ Internal Rate of Return: I/B/E/S EPS forecast growth rate applies for first 5 years; GDP growth thereafter

Source: Standard & Poor's Research Insight; Blue Chip Financial Forecasts (June 1, 2005); I/B/E/S (May 2005)

RISK MEASURES FOR 17 LOW RISK CANADIAN INDUSTRIALS

	Debt Ratings			Beta				Equity Ratio Total Capital
				1999-2003		2000-2004		
Company Name	**S&P**	**DBRS**	**CBS Stock Rating**	**Raw**	**Adjusted**	**Raw**	**Adjusted**	**2003**
ALGOMA CENTRAL CORP			Average	-0.11	0.26	0.06	0.37	85.6%
CANADA BREAD CO LTD			Conservative	0.11	0.40	0.34	0.56	74.0%
CANADIAN TIRE CORP -CL A	BBB+	A(low)	Very Conservative	0.24	0.49	0.30	0.53	64.3%
EMPIRE CO LTD -CL A	BBB-	BBB	Very Conservative	0.33	0.55	0.28	0.52	57.9%
FINNING INTERNATIONAL INC	BBB+	BBB(high)	Conservative	0.14	0.42	0.11	0.41	46.8%
LEON'S FURNITURE LTD			Average	0.20	0.46	0.24	0.49	100.0%
LINAMAR CORP			Average	0.29	0.52	0.43	0.62	65.7%
LOBLAW COMPANIES LTD	A	A(high)	Very Conservative	-0.13	0.24	-0.02	0.32	50.2%
MAGNA INTERNATIONAL -CL A	A	A	Conservative	0.33	0.55	0.50	0.66	83.5%
MAPLE LEAF FOODS INC			Very Conservative	0.19	0.46	0.37	0.58	50.3%
METRO INC -CL A	A		Very Conservative	0.26	0.51	0.20	0.46	89.1%
QUEBECOR WORLD INC -SUB VTG	BBB-	BBB(low)	Very Conservative	0.22	0.48	0.35	0.56	45.3%
REITMANS (CANADA) -CL A			Average	-0.13	0.24	0.14	0.42	74.5%
THOMSON CORP	A-	A(low)	Very Conservative	0.52	0.68	0.53	0.69	67.6%
TORSTAR CORP -CL B		BBB(high)	Very Conservative	0.28	0.52	0.34	0.56	65.6%
TRANSCONTINENTAL INC -CL A	BBB	BBB(high)	Very Conservative	0.30	0.53	0.35	0.57	68.4%
WESTON (GEORGE) LTD	A-	A(low)	Very Conservative	-0.10	0.27	-0.08	0.28	34.6%
MEAN	**BBB+**	**BBB(high)**	**Conservative**	**0.17**	**0.45**	**0.26**	**0.50**	**66.1%**
MEDIAN	**BBB+**	**BBB(high)**	**Very Conservative**	**0.22**	**0.48**	**0.30**	**0.53**	**65.7%**

Source: Standard & Poor's Ratings Direct; DBRS; Canadian Business Service; Standard & Poor's Research Insight.

RETURNS ON AVERAGE COMMON STOCK EQUITY FOR
17 LOW RISK CANADIAN INDUSTRIALS

Company Name	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average 1993-2004	Average 1993-1995	Average 1996-2004
ALGOMA CENTRAL CORP	11.0	19.0	13.3	12.3	52.7	8.5	3.8	1.1	14.8	9.3	4.7	9.2	13.3	14.4	12.9
CANADA BREAD CO LTD	15.6	14.5	12.6	12.8	14.2	1.3	2.7	7.4	8.6	13.9	9.6	14.3	10.6	14.2	9.4
CANADIAN TIRE CORP -CL A	6.9	0.5	10.2	10.4	11.4	13.0	11.2	10.6	11.5	11.9	12.8	13.6	10.3	5.8	11.8
EMPIRE CO LTD -CL A	12.3	9.4	3.9	11.9	17.9	21.7	13.3	69.1	16.4	11.4	11.6	10.7	17.5	8.5	20.4
FINNING INTERNATIONAL INC	6.5	14.9	16.3	16.0	16.2	0.5	8.7	10.5	14.1	15.5	14.0	10.1	11.9	12.6	11.7
LEON'S FURNITURE LTD	16.4	15.3	14.0	13.4	15.1	16.7	21.1	19.3	17.3	17.1	16.5	18.9	16.8	15.3	17.3
LINAMAR CORP	20.5	27.7	22.3	29.0	36.9	21.9	14.7	15.7	7.8	9.7	6.5	14.0	18.9	23.5	17.4
LOBLAW COMPANIES LTD	9.6	12.4	13.3	14.2	15.3	12.8	13.7	15.7	16.8	18.9	19.1	19.1	15.1	11.8	16.2
MAGNA INTERNATIONAL -CL A	19.6	21.7	21.8	15.8	21.6	12.3	12.0	15.9	14.7	11.8	9.5	13.3	15.8	21.0	14.1
MAPLE LEAF FOODS INC	7.3	7.5	-6.7	14.8	14.7	-6.3	17.9	8.0	10.3	12.2	4.8	13.0	8.1	2.7	9.9
METRO INC -CL A	13.0	16.2	22.6	22.8	24.7	20.5	20.8	22.8	24.1	23.9	23.8	21.0	21.4	17.3	22.7
QUEBECOR WORLD INC -SUB VTG	13.7	13.3	11.8	11.4	11.1	12.0	3.9	13.3	0.0	11.7	-2.8	4.9	8.7	12.9	7.3
REITMANS (CANADA) -CL A	11.1	9.0	6.2	0.8	8.9	9.4	30.1	10.2	12.6	10.5	15.4	22.0	12.2	8.8	13.3
THOMSON CORP	10.0	14.6	22.4	14.2	12.9	34.7	8.0	17.9	10.2	7.3	8.8	10.3	14.3	15.6	13.8
TORSTAR CORP -CL B	-1.7	7.9	6.7	11.3	38.4	-0.7	12.8	5.4	-14.6	21.3	17.8	14.6	9.9	4.3	11.8
TRANSCONTINENTAL INC -CL A	9.3	8.1	9.3	0.8	10.6	11.2	11.4	13.7	4.0	18.9	17.5	13.9	10.7	8.9	11.3
WESTON (GEORGE) LTD	4.5	8.7	12.9	15.1	14.5	37.3	14.0	17.4	18.5	18.3	19.4	10.2	15.9	8.7	18.3
Mean	10.9	13.0	12.5	13.4	19.8	13.3	12.9	16.1	11.0	14.3	12.3	13.7	13.6	12.1	14.1
Median	11.0	13.3	12.9	13.4	15.1	12.3	12.8	13.7	12.6	12.2	12.8	13.6	13.3	12.6	13.3
													13.0	13.2	13.1

RISK MEASURES FOR 188 LOW RISK US INDUSTRIALS

Company Name	S&P Debt Rating	Value Line Safety Rank	Beta 1999-2003 Raw	Beta 1999-2003 Adjusted	Beta 2000-2004 Raw	Beta 2000-2004 Adjusted	Equity Ratio Total Capital 2003
3M CO	AA	1	0.58	0.72	0.55	0.70	72.4%
ABM INDUSTRIES INC		2	0.48	0.65	0.44	0.62	100.0%
ACETO CORP		3	0.60	0.73	0.99	0.99	96.3%
ALAMO GROUP INC		2	0.21	0.47	0.36	0.57	90.0%
ALBERTO-CULVER CO	BBB+	1	0.28	0.52	0.25	0.50	76.8%
ALBERTSONS INC	BBB	3	0.26	0.50	0.38	0.59	50.3%
ALEXANDER & BALDWIN INC	A-	3	0.47	0.64	0.66	0.77	70.2%
ALICO INC		3	0.15	0.43	0.30	0.53	68.7%
AMERON INTERNATIONAL CORP		3	0.45	0.63	0.62	0.75	73.1%
ANDERSONS INC		3	-0.16	0.22	-0.10	0.27	46.1%
APOGEE ENTERPRISES INC		3	0.43	0.62	0.34	0.56	80.7%
APPLEBEES INTL INC		3	0.18	0.45	0.36	0.57	95.7%
APPLIED INDUSTRIAL TECH INC		3	0.05	0.37	0.19	0.46	79.7%
ARCHER-DANIELS-MIDLAND CO	A+	3	0.33	0.55	0.38	0.59	57.7%
ARCTIC CAT INC		3	0.66	0.77	0.87	0.91	100.0%
AVERY DENNISON CORP	A-	2	0.71	0.81	0.50	0.67	52.8%
BADGER METER INC		3	0.27	0.51	0.34	0.56	62.1%
BALDOR ELECTRIC CO		2	0.33	0.55	0.43	0.62	71.3%
BANDAG INC		3	0.81	0.87	1.01	1.01	95.4%
BANTA CORP		2	0.15	0.43	0.36	0.57	82.1%
BARNES GROUP INC		3	0.23	0.49	0.33	0.55	57.2%
BLAIR CORP		3	0.40	0.60	0.31	0.54	94.6%
BLOCK H & R INC	BBB+	3	0.25	0.50	0.25	0.50	69.8%
BOB EVANS FARMS		2	0.09	0.39	0.36	0.57	90.9%
BOEING CO	A	3	0.71	0.81	0.72	0.81	36.0%
BRADY CORP		3	1.00	1.00	0.79	0.86	99.6%
BRIDGFORD FOODS CORP		3	0.04	0.36	0.02	0.34	100.0%
BRIGGS & STRATTON	BBB-	3	0.91	0.94	1.07	1.05	50.4%
BRINKS CO	BBB	3	0.53	0.69	0.74	0.83	64.4%
BROWN-FORMAN -CL B	A	1	0.33	0.55	0.28	0.52	61.5%
BRUNSWICK CORP	BBB+	3	0.85	0.90	0.89	0.93	68.5%
BURLINGTON NORTHERN SANTA FE	BBB+	3	0.55	0.70	0.60	0.73	56.0%
CASEYS GENERAL STORES INC		3	0.49	0.66	0.47	0.64	71.8%
CATO CORP -CL A		3	0.54	0.69	0.80	0.87	87.6%
CBRL GROUP INC	BBB-	3	0.25	0.50	-0.02	0.32	81.0%
CHURCHILL DOWNS INC		3	0.38	0.59	0.34	0.56	66.8%
CLARCOR INC		2	0.43	0.61	0.40	0.60	95.5%
CLOROX CO/DE	A-	2	0.38	0.58	0.21	0.47	53.2%
CONAGRA FOODS INC	BBB+	1	0.28	0.51	0.70	0.80	45.9%
COURIER CORP		2	0.53	0.69	0.62	0.74	99.4%
CPI CORP		3	0.01	0.34	0.18	0.45	60.3%
CSX CORP	BBB	3	0.61	0.74	0.75	0.83	46.9%
CUBIC CORP		3	0.16	0.44	0.09	0.39	82.3%
CURTISS-WRIGHT CORP		2	0.02	0.35	0.05	0.36	68.0%
CVS CORP	A-	3	0.51	0.67	0.53	0.69	83.7%
DANAHER CORP	A+	2	0.86	0.91	0.89	0.93	73.7%
DEB SHOPS INC		3	0.38	0.58	0.30	0.53	100.0%
DELTA & PINE LAND CO		2	0.29	0.52	0.30	0.53	99.2%
DONALDSON CO INC		2	0.50	0.66	0.57	0.71	78.9%
DONNELLEY (R R) & SONS CO	A-	2	0.54	0.69	0.71	0.81	51.4%
EATON CORP	A-	1	0.65	0.77	0.75	0.83	61.5%
ELKCORP		3	0.58	0.72	0.43	0.62	56.3%
EMERSON ELECTRIC CO	A	1	0.82	0.88	0.96	0.97	61.0%
ENGINEERED SUPPORT SYSTEMS		3	-0.13	0.24	0.12	0.41	72.9%
ENNIS INC		3	0.10	0.40	0.27	0.51	88.7%
EW SCRIPPS -CL A	A	2	0.49	0.66	0.55	0.70	78.2%
EXPEDITORS INTL WASH INC		3	0.68	0.79	0.61	0.74	100.0%
FAMILY DOLLAR STORES		3	0.69	0.79	0.50	0.66	100.0%
FARMER BROS CO		2	0.22	0.48	0.06	0.37	100.0%
FASTENAL CO		3	0.49	0.66	0.54	0.69	100.0%
FEDERAL SCREW WORKS		2	-0.08	0.28	-0.09	0.27	90.7%
FEDERAL SIGNAL CORP		3	0.86	0.90	1.05	1.03	47.5%
FLEXSTEEL INDS		3	0.27	0.51	0.31	0.54	100.0%
FLUOR CORP	A-	3	0.40	0.60	0.51	0.67	80.3%
FRANKLIN ELECTRIC CO INC		2	0.24	0.49	0.30	0.53	92.2%
FREDS INC		3	0.62	0.75	0.72	0.81	97.3%

RISK MEASURES FOR 188 LOW RISK US INDUSTRIALS

Company Name	S&P Debt Rating	Value Line Safety Rank	Beta 1999-2003 Raw	Beta 1999-2003 Adjusted	Beta 2000-2004 Raw	Beta 2000-2004 Adjusted	Equity Ratio Total Capital 2003
FRISCH'S RESTAURANTS INC		3	-0.10	0.26	0.60	0.73	63.8%
G&K SERVICES INC -CL A		3	0.52	0.68	0.40	0.60	60.2%
GANNETT CO	A	1	0.68	0.79	0.60	0.73	68.7%
GATX CORP	BBB-	3	0.94	0.96	1.04	1.03	18.8%
GENERAL DYNAMICS CORP	A	1	0.51	0.67	0.57	0.71	59.4%
GENUINE PARTS CO		1	0.41	0.60	0.50	0.67	77.3%
GORMAN-RUPP CO		3	0.60	0.73	0.67	0.78	100.0%
GRAINGER (W W) INC	AA+	2	0.65	0.76	0.80	0.87	92.5%
GRANITE CONSTRUCTION INC		3	0.24	0.49	0.32	0.55	78.9%
HANCOCK FABRICS INC		3	-0.30	0.13	-0.08	0.28	92.9%
HARLAND (JOHN H.) CO		3	-0.06	0.29	-0.05	0.29	67.7%
HARSCO CORP	A-	3	0.86	0.91	0.96	0.97	55.9%
HARTE HANKS INC		1	0.18	0.45	0.24	0.49	99.1%
HAVERTY FURNITURE		3	0.68	0.79	0.83	0.88	76.2%
HEICO CORP		3	0.37	0.58	0.47	0.65	87.4%
HILTON HOTELS CORP	BBB-	3	0.78	0.85	0.96	0.97	35.1%
HNI CORP		2	0.93	0.95	0.89	0.93	95.8%
HORMEL FOODS CORP	A	1	0.15	0.43	0.14	0.43	75.4%
HUBBELL INC -CL B	A+	2	0.86	0.90	0.87	0.91	73.5%
IDEX CORP	BBB	3	0.73	0.82	0.77	0.85	77.0%
ILLINOIS TOOL WORKS	AA	2	0.83	0.89	0.86	0.91	89.0%
INTL SPEEDWAY CORP -CL A	BBB-	3	0.28	0.51	0.22	0.48	70.2%
JOHNSON CONTROLS INC	A	2	0.83	0.88	0.70	0.80	63.3%
KELLWOOD CO	BBB-	3	0.54	0.69	0.59	0.73	70.1%
KELLY SERVICES INC -CL A		3	0.30	0.53	0.46	0.63	94.0%
KIMBALL INTERNATIONAL -CL B		3	0.25	0.50	0.32	0.54	99.5%
KIMBERLY-CLARK CORP	AA-	1	0.25	0.50	0.14	0.42	65.3%
KNIGHT-RIDDER INC	A	1	0.66	0.77	0.63	0.75	49.8%
LANCASTER COLONY CORP		1	0.30	0.53	0.11	0.41	100.0%
LANCE INC		3	0.15	0.43	0.33	0.55	80.7%
LAWSON PRODUCTS		2	0.44	0.62	0.51	0.67	98.3%
LA-Z-BOY INC		3	0.64	0.76	0.83	0.88	70.0%
LEE ENTERPRISES INC		1	0.72	0.82	0.76	0.84	72.4%
LEGGETT & PLATT INC	A+	2	0.97	0.98	1.03	1.02	64.3%
LENNAR CORP	BBB-	3	0.73	0.82	0.55	0.70	58.7%
LIBERTY CORP		2	0.52	0.68	0.63	0.75	100.0%
LIFETIME HOAN CORP		3	0.82	0.88	1.04	1.03	83.1%
LINCOLN ELECTRIC HLDGS INC		2	0.56	0.71	0.66	0.77	73.4%
LINDSAY MANUFACTURING CO		3	0.28	0.52	0.43	0.62	100.0%
LONGS DRUG STORES CORP		3	0.27	0.51	0.38	0.58	77.6%
LSI INDS INC		3	0.42	0.61	0.32	0.55	89.9%
MARCUS CORP		3	0.76	0.84	0.90	0.93	62.2%
MASCO CORP	BBB+	3	0.70	0.80	0.76	0.84	56.6%
MAY DEPARTMENT STORES CO	BBB	3	0.72	0.81	0.87	0.91	50.1%
MCCLATCHY CO -CL A	BBB+	1	0.17	0.44	0.19	0.46	77.8%
MCCORMICK & COMPANY INC	A	2	0.00	0.33	0.05	0.37	54.9%
MCDONALD'S CORP	A	1	0.76	0.84	0.90	0.93	55.2%
MCGRATH RENTCORP		3	0.63	0.75	0.83	0.89	75.3%
MCGRAW-HILL COMPANIES		1	0.56	0.70	0.45	0.63	99.0%
MDC HOLDINGS INC	BBB-	3	0.85	0.90	0.85	0.90	63.7%
MEREDITH CORP		1	0.50	0.67	0.35	0.57	57.2%
MET-PRO CORP		2	0.26	0.51	0.32	0.54	89.6%
MINE SAFETY APPLIANCES CO		3	-0.25	0.16	-0.22	0.18	81.5%
MODINE MANUFACTURING CO		3	0.87	0.91	0.93	0.96	87.0%
MOVADO GROUP INC		3	0.43	0.62	0.43	0.62	88.7%
NATURES SUNSHINE PRODS INC		3	-0.05	0.30	0.29	0.52	93.9%
NEW YORK TIMES CO -CL A	A+	1	0.72	0.81	0.57	0.71	59.3%
NIKE INC -CL B	A	2	0.71	0.81	0.90	0.93	85.1%
NORDSON CORP		3	0.86	0.91	0.91	0.94	54.8%
NORFOLK SOUTHERN CORP	BBB	3	0.49	0.66	0.61	0.74	47.0%
NORTHROP GRUMMAN CORP	BBB	3	-0.32	0.12	-0.12	0.25	71.7%
OSHKOSH TRUCK CORP		3	0.78	0.85	0.75	0.83	87.8%
PALL CORP	A-	2	0.86	0.90	1.00	1.00	62.8%
PARKER-HANNIFIN CORP	A	3	0.96	0.98	1.06	1.04	64.4%
PENTAIR INC	BBB	3	0.90	0.93	0.98	0.99	61.0%
PEPSIAMERICAS INC	A	3	0.10	0.40	0.30	0.53	54.8%
PIER 1 IMPORTS INC/DE	BBB-	3	0.28	0.52	0.67	0.78	97.3%
PULITZER INC		2	0.31	0.54	0.52	0.68	73.6%
PULTE HOMES INC	BBB-	3	0.94	0.96	1.04	1.02	56.7%

RISK MEASURES FOR 188 LOW RISK US INDUSTRIALS

Company Name	S&P Debt Rating	Value Line Safety Rank	Beta 1999-2003 Raw	Beta 1999-2003 Adjusted	Beta 2000-2004 Raw	Beta 2000-2004 Adjusted	Equity Ratio Total Capital 2003
QUIXOTE CORP		3	0.41	0.61	0.49	0.66	63.3%
RAVEN INDUSTRIES INC		3	0.24	0.49	0.34	0.56	99.8%
RAYTHEON CO	BBB-	3	0.23	0.48	0.36	0.57	55.3%
REGIS CORP/MN		3	0.58	0.72	0.39	0.59	65.1%
ROBBINS & MYERS INC		3	0.72	0.81	0.71	0.81	59.7%
ROCKWELL AUTOMATION	A	2	0.94	0.96	0.93	0.95	67.2%
ROLLINS INC		3	0.11	0.41	0.19	0.45	100.0%
RUBY TUESDAY INC		3	0.18	0.45	0.85	0.90	75.4%
RUSS BERRIE & CO INC		3	0.27	0.51	0.25	0.50	100.0%
RYDER SYSTEM INC	BBB+	3	0.80	0.87	0.80	0.87	42.5%
RYLAND GROUP INC	BBB-	3	0.87	0.91	1.05	1.03	59.3%
SCHAWK INC -CL A		1	0.15	0.43	0.37	0.58	79.7%
SKYLINE CORP		3	0.62	0.74	0.85	0.90	100.0%
SMITH (A O) CORP		3	0.11	0.41	0.19	0.46	67.7%
SMUCKER (JM) CO		2	0.12	0.41	0.08	0.38	90.0%
SOUTHWEST AIRLINES	A	3	0.86	0.90	0.87	0.91	76.7%
STANDEX INTERNATIONAL CORP		2	0.51	0.67	0.37	0.58	59.6%
STANLEY WORKS	A	3	0.89	0.93	0.91	0.94	55.4%
STRIDE RITE CORP		3	0.92	0.95	0.94	0.96	100.0%
STURM RUGER & CO INC		3	-0.01	0.32	0.05	0.36	100.0%
SUPERIOR INDUSTRIES INTL		3	0.64	0.76	0.66	0.77	100.0%
SUPERIOR UNIFORM GROUP INC		2	-0.01	0.33	0.10	0.40	91.9%
SUPERVALU INC	BBB	3	0.47	0.64	0.59	0.72	53.3%
SYSCO CORP	AA-	1	0.54	0.69	0.39	0.59	61.6%
TECUMSEH PRODUCTS CO -CL A		2	0.36	0.57	0.49	0.66	70.7%
TELEFLEX INC		2	0.57	0.71	0.83	0.89	70.0%
TENNANT CO		2	0.27	0.51	0.42	0.61	95.8%
THOMAS INDUSTRIES INC		2	0.79	0.86	0.81	0.87	76.8%
THOR INDUSTRIES INC		3	0.79	0.86	0.74	0.83	100.0%
TOOTSIE ROLL INDUSTRIES INC		1	0.52	0.68	0.62	0.74	98.6%
TORO CO	BBB-	2	0.54	0.69	0.32	0.54	70.7%
TREDEGAR CORP		3	0.31	0.54	0.24	0.49	76.2%
TRIBUNE CO	A	1	0.66	0.77	0.51	0.67	72.4%
TYSON FOODS INC -CL A	BBB	3	0.38	0.58	0.38	0.58	52.3%
UNIFIRST CORP		3	0.23	0.48	0.39	0.59	82.7%
UNION PACIFIC CORP	BBB	3	0.49	0.66	0.38	0.58	60.7%
UNITED PARCEL SERVICE INC	AAA	1	0.48	0.65	0.49	0.66	79.5%
UNIVERSAL CORP/VA	BBB+	2	-0.02	0.32	0.11	0.40	41.7%
UNIVERSAL FOREST PRODS INC		3	0.90	0.93	0.91	0.94	58.8%
VF CORP	A-	3	0.53	0.68	0.63	0.75	65.6%
WALGREEN CO	A+	1	0.43	0.62	0.25	0.50	99.7%
WAL-MART STORES	AA	1	0.79	0.86	0.51	0.67	62.2%
WASHINGTON POST -CL B	A+	1	0.25	0.50	0.31	0.54	76.3%
WATSCO INC		3	0.76	0.84	0.72	0.81	85.7%
WATTS WATER TECHNOLOGIES INC	BBB	3	0.09	0.39	0.30	0.53	69.4%
WEIS MARKETS INC		1	0.16	0.44	0.10	0.40	100.0%
WENDY'S INTERNATIONAL INC	BBB+	2	0.38	0.58	0.45	0.63	70.3%
WEYCO GROUP INC		2	-0.13	0.24	-0.11	0.25	78.0%
WILEY (JOHN) & SONS -CL A		3	0.35	0.57	0.18	0.45	67.5%
WINNEBAGO INDUSTRIES		3	0.79	0.86	0.95	0.97	100.0%
WOLVERINE WORLD WIDE		3	0.64	0.76	0.75	0.83	87.8%
WOODWARD GOVERNOR CO		3	0.83	0.88	0.97	0.98	74.2%
YORK INTERNATIONAL CORP	BBB-	3	0.74	0.83	0.91	0.94	55.9%
Mean	A-	2	0.46	0.64	0.52	0.68	75.3%
Median	A-	3	0.49	0.66	0.50	0.67	73.9%

Source: Standard & Poor's Ratings Direct; *Value Line* data as of June 17, 2005

RETURNS ON AVERAGE COMMON STOCK EQUITY FOR
188 LOW RISK US INDUSTRIALS

Company Name	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average 1993-2004	Average 1993-1995	Average 1996-2004
3M CO	19.27	19.96	14.33	23.18	34.74	20.45	28.84	28.97	22.67	32.69	34.63	32.74	26.04	17.85	28.77
ABM INDUSTRIES INC	11.90	12.50	13.31	13.86	14.76	15.35	15.22	14.78	9.56	12.50	21.78	6.88	13.53	12.57	13.85
ACETO CORP	3.55	12.72	13.13	11.49	9.97	12.11	9.46	9.90	6.39	6.94	12.00	14.14	10.15	9.80	10.27
ALAMO GROUP INC	25.12	19.95	16.49	9.32	13.37	3.86	5.68	9.68	9.15	5.06	5.86	8.79	11.03	20.52	7.86
ALBERTO-CULVER CO	14.11	14.08	15.09	15.77	18.53	16.11	15.65	17.12	16.08	17.23	16.85	11.93	15.71	14.43	16.14
ALBERTSONS INC	24.46	27.13	25.54	23.52	22.15	21.69	10.04	13.43	8.63	10.42	10.51	8.22	17.14	25.71	14.29
ALEXANDER & BALDWIN INC	11.69	12.24	8.70	9.79	11.59	4.38	9.17	11.48	15.76	8.11	10.56	11.78	10.44	10.87	10.29
ALICO INC	5.00	11.96	12.47	5.81	13.50	7.61	4.50	14.48	14.86	6.67	10.58	13.13	10.05	9.81	10.13
AMERON INTERNATIONAL CORP	-18.63	8.98	9.60	11.03	13.01	12.96	12.90	14.06	14.35	13.49	12.78	5.03	9.13	-0.02	12.18
ANDERSONS INC	20.80	25.36	15.54	9.18	5.60	12.59	10.00	11.54	9.79	10.73	10.56	15.34	13.09	20.57	10.59
APOGEE ENTERPRISES INC	2.92	10.94	13.53	16.86	-36.24	21.00	9.07	10.49	16.38	17.14	-3.24	9.63	7.37	9.13	6.79
APPLEBEES INTL INC	13.76	19.23	18.29	16.94	16.85	17.27	19.71	23.59	21.64	23.14	21.95	23.18	19.63	17.09	20.47
APPLIED INDUSTRIAL TECH INC	6.77	8.89	10.71	13.16	13.65	12.00	6.78	10.47	9.18	4.84	6.55	9.72	9.39	8.79	9.59
ARCHER-DANIELS-MIDLAND CO	11.40	9.75	14.60	11.60	6.19	6.43	4.41	4.87	6.16	7.81	6.53	6.70	8.04	11.92	6.74
ARCTIC CAT INC	25.89	25.17	10.98	14.28	14.79	13.10	4.51	16.21	16.26	17.73	16.27	@NA	15.93	20.68	14.14
AVERY DENNISON CORP	10.95	15.11	18.60	21.35	24.54	26.74	26.22	34.62	27.70	25.90	22.56	19.51	22.82	14.89	25.46
BADGER METER INC	8.49	11.61	12.09	14.90	16.70	18.47	21.35	16.08	7.79	15.96	14.68	16.16	14.52	10.73	15.79
BALDOR ELECTRIC CO	12.71	15.29	16.33	17.09	18.19	17.57	16.49	17.56	8.56	8.90	9.24	12.86	14.23	14.78	14.05
BANDAG INC	21.06	22.19	23.27	20.13	27.91	12.75	11.36	13.00	9.10	10.96	13.35	13.25	16.53	22.17	14.65
BANTA CORP	14.89	15.14	14.90	12.61	10.38	12.85	4.19	16.21	12.85	10.18	9.65	12.94	12.23	14.98	11.32
BARNES GROUP INC	4.73	20.42	23.29	22.77	23.92	18.67	15.50	18.68	9.56	13.34	12.46	10.07	16.12	16.15	16.11
BLAIR CORP	17.45	19.77	12.46	7.11	6.30	10.16	6.80	9.16	3.88	7.67	5.52	5.39	9.30	16.56	6.89
BLOCK H & R INC	29.53	15.39	20.54	4.69	33.51	17.92	22.09	23.14	34.16	38.25	39.56	31.69	25.87	21.82	27.22
BOB EVANS FARMS	14.64	14.41	7.28	8.67	10.39	12.42	11.77	11.46	13.84	13.88	12.10	*5.80*	11.39	12.11	11.15
BOEING CO	14.60	9.16	4.01	10.51	-1.49	8.87	19.42	18.93	25.87	25.04	9.07	19.27	13.61	9.26	15.05
BRADY CORP	13.71	13.67	17.83	15.67	16.12	12.79	16.11	17.19	9.24	9.01	6.44	13.71	13.46	15.07	12.92
BRIDGFORD FOODS CORP	21.34	20.27	19.03	14.66	15.57	18.27	18.40	15.33	11.00	2.04	2.27	0.05	13.18	20.21	10.84
BRIGGS & STRATTON	20.93	26.84	24.86	19.66	14.46	21.16	31.10	35.20	11.54	12.18	16.72	20.43	21.26	24.21	20.27
BRINKS CO	13.32	13.97	21.54	20.87	21.22	18.79	8.64	-33.28	3.34	5.83	6.71	20.78	10.14	16.28	8.10
BROWN-FORMAN -CL B	25.53	30.05	27.51	25.08	24.16	23.46	22.19	20.85	18.26	22.78	26.81	*24.80*	24.29	27.70	23.15
BRUNSWICK CORP	5.20	15.04	13.02	16.58	12.04	14.19	2.90	-8.09	7.78	9.36	11.15	17.78	9.74	11.09	9.30
BURLINGTON NORTHERN SANTA FE	18.43	23.21	5.10	16.14	13.84	15.84	14.26	12.52	9.62	9.63	9.46	8.89	13.08	15.58	12.24
CASEYS GENERAL STORES INC	12.44	13.54	13.87	12.33	13.52	14.24	12.92	10.78	8.95	10.22	8.64	8.09	11.63	13.28	11.08
CATO CORP -CL A	24.11	13.46	8.26	4.66	11.25	14.51	18.72	19.68	19.48	18.16	13.52	17.19	15.25	15.27	15.24
CBRL GROUP INC	15.50	14.30	14.27	11.96	14.12	14.23	8.80	7.28	5.87	11.27	13.50	13.41	12.04	14.69	11.16
CHURCHILL DOWNS INC	16.71	15.61	13.99	17.10	18.09	17.74	14.73	11.25	10.52	9.27	9.85	3.61	13.21	15.44	12.46
CLARCOR INC	16.90	18.57	17.69	18.04	16.97	17.92	17.82	17.77	16.23	15.80	15.91	16.02	17.14	17.72	16.94
CLOROX CO/DE	19.73	23.71	21.67	23.67	25.34	28.09	18.53	23.42	17.60	19.79	38.38	39.86	24.98	21.71	26.08
CONAGRA FOODS INC	19.30	19.97	7.59	26.02	23.92	12.60	13.19	19.86	18.94	17.27	18.88	16.40	17.83	15.62	18.56
COURIER CORP	9.10	12.97	15.29	6.75	10.72	16.88	15.61	16.97	17.85	18.36	19.04	16.41	14.66	12.45	15.40
CPI CORP	6.40	8.68	8.43	9.16	10.52	20.08	-3.27	15.45	11.28	11.94	2.30	-49.55	4.28	7.84	3.10
CSX CORP	11.67	18.87	15.50	18.51	14.85	9.22	0.88	9.60	4.83	7.56	2.98	5.11	9.96	15.35	8.17
CUBIC CORP	14.51	1.50	3.40	6.76	7.11	0.51	7.86	0.38	11.36	14.57	15.59	13.32	8.07	6.47	8.61
CURTISS-WRIGHT CORP	-1.97	12.90	10.98	9.06	14.37	13.38	16.00	14.98	19.65	11.86	11.74	12.34	12.11	7.30	13.71
CVS CORP	14.69	12.64	-32.49	4.93	2.72	15.12	19.90	19.66	9.31	14.52	15.03	14.09	9.18	-1.72	12.81
DANAHER CORP	15.10	19.45	20.39	29.97	18.03	16.13	17.10	17.76	14.27	17.72	16.13	18.05	18.34	18.31	18.35
DEB SHOPS INC	4.70	-2.82	-5.10	-5.06	8.66	18.15	23.59	19.63	15.92	15.14	7.03	9.61	9.12	-1.07	12.52
DELTA & PINE LAND CO	42.36	24.55	25.87	27.04	9.67	2.33	8.80	66.04	18.49	15.43	13.13	2.26	21.33	30.93	18.13
DONALDSON CO INC	16.88	17.57	18.76	19.30	21.42	22.84	24.09	25.87	25.21	24.76	22.97	21.33	21.75	17.74	23.09
DONNELLEY (R R) & SONS CO	9.69	14.05	14.39	-8.29	8.11	20.37	25.28	22.52	2.36	15.78	18.60	7.44	12.53	12.71	12.46
EATON CORP	17.54	23.91	21.83	16.88	21.93	16.91	26.36	18.00	6.92	11.77	14.25	19.28	17.96	21.09	16.92
ELKCORP	32.68	18.17	10.69	10.50	12.10	15.35	19.21	20.01	5.41	8.93	12.94	9.97	14.66	20.51	12.71
EMERSON ELECTRIC CO	18.53	21.91	20.17	19.92	20.83	21.89	21.92	22.61	16.49	17.88	17.85	18.35	19.86	20.20	19.75
ENGINEERED SUPPORT SYSTEMS	4.07	5.70	17.33	19.23	21.59	21.48	15.62	18.38	19.77	19.27	26.15	28.42	18.08	9.03	21.10

RETURNS ON AVERAGE COMMON STOCK EQUITY FOR
188 LOW RISK US INDUSTRIALS

Company Name	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average 1993-2004	Average 1993-1995	Average 1996-2004
ENNIS INC	32.57	31.22	25.24	16.89	12.51	17.09	17.61	14.66	15.96	15.81	17.30	12.01	19.07	29.68	15.54
EW SCRIPPS -CL A	16.16	12.63	11.73	14.74	15.82	12.39	13.16	13.39	10.49	13.13	16.23	15.51	13.78	13.50	13.87
EXPEDITORS INTL WASH INC	12.20	14.01	15.94	18.87	24.79	24.42	23.69	25.78	25.05	23.98	20.86	21.49	20.92	14.05	23.21
FAMILY DOLLAR STORES	21.66	17.87	14.94	14.21	15.80	19.16	22.08	23.11	21.57	20.52	20.07	19.67	19.22	18.16	19.58
FARMER BROS CO	13.13	5.31	9.49	10.44	6.96	12.82	10.26	12.51	11.05	8.49	6.37	3.97	9.23	9.31	9.21
FASTENAL CO	26.98	31.78	33.85	29.54	27.98	27.61	26.20	25.18	17.88	16.18	15.63	20.77	24.97	30.87	23.00
FEDERAL SCREW WORKS	7.97	10.21	14.52	13.54	19.40	18.02	16.59	17.63	7.80	7.40	5.67	2.19	11.74	10.90	12.03
FEDERAL SIGNAL CORP	21.04	22.30	22.04	23.82	20.60	19.11	17.03	16.41	13.27	12.19	9.09	-0.55	16.36	21.79	14.55
FLEXSTEEL INDS	9.34	9.30	7.18	6.09	8.10	9.92	12.96	14.34	5.40	6.55	9.14	10.37	9.06	8.60	9.21
FLUOR CORP	17.33	16.99	17.48	17.29	8.57	14.41	6.71	7.77	1.62	19.56	17.08	15.45	13.35	17.27	12.05
FRANKLIN ELECTRIC CO INC	36.90	32.27	21.32	23.85	26.48	26.88	28.53	20.94	22.69	23.30	19.93	17.83	25.08	30.16	23.38
FREDS INC	9.40	7.53	2.38	4.94	7.86	6.63	7.57	9.72	10.37	12.02	12.46	9.24	8.34	6.44	8.98
FRISCH'S RESTAURANTS INC	8.21	3.68	3.56	1.83	7.93	8.40	11.23	13.90	13.55	14.93	14.11	13.20	9.54	5.15	11.01
G&K SERVICES INC -CL A	12.89	15.49	16.67	17.53	18.73	17.47	17.07	14.91	11.80	11.93	9.35	8.78	14.39	15.02	14.18
GANNETT CO	22.81	24.95	24.06	37.16	22.24	26.81	22.25	35.33	15.34	18.35	15.80	15.88	23.41	23.94	23.24
GATX CORP	10.42	12.56	12.76	12.05	-8.07	18.99	19.29	8.19	20.68	4.17	9.09	17.21	11.44	11.91	11.29
GENERAL DYNAMICS CORP	58.01	19.09	22.27	16.46	17.42	17.61	32.65	25.78	22.59	18.86	18.06	18.72	23.96	33.13	20.90
GENUINE PARTS CO	19.31	19.42	19.46	19.51	19.07	18.19	17.85	17.36	12.90	16.42	15.92	16.29	17.64	19.40	17.06
GORMAN-RUPP CO	16.04	15.74	14.69	14.19	14.08	14.53	14.87	14.35	14.03	8.15	8.59	7.78	13.08	15.49	12.28
GRAINGER (W W) INC	15.94	12.95	16.88	15.79	16.82	18.54	13.10	12.78	11.12	14.40	12.92	14.67	14.66	15.26	14.46
GRANITE CONSTRUCTION INC	2.15	11.23	14.54	12.33	11.34	16.65	16.83	15.82	12.69	11.29	12.61	10.80	12.36	9.31	13.37
HANCOCK FABRICS INC	5.78	10.64	9.06	12.14	14.46	3.87	8.85	13.63	16.01	17.55	13.63	1.35	10.58	8.50	11.28
HARLAND (JOHN H.) CO	23.88	26.48	21.63	-6.85	9.22	-11.63	25.76	16.86	20.88	24.05	22.87	20.80	16.16	23.99	13.55
HARSCO CORP	15.87	15.68	16.13	18.21	13.73	14.66	13.59	14.62	10.55	13.54	12.97	14.34	14.49	15.89	14.02
HARTE HANKS INC	-62.23	24.88	24.92	19.45	82.21	11.96	12.63	14.51	14.44	16.73	16.06	17.31	16.07	-4.14	22.81
HAVERTY FURNITURE	9.53	9.97	8.96	8.39	8.62	10.60	16.77	16.00	11.93	11.41	10.17	8.64	10.92	9.49	11.39
HEICO CORP	3.85	5.59	9.42	27.62	13.91	16.54	15.79	17.03	8.83	7.69	5.70	8.80	11.73	6.29	13.55
HILTON HOTELS CORP	9.98	11.14	14.51	7.01	7.22	16.15	21.97	17.80	9.69	10.32	7.64	9.90	11.94	11.88	11.97
HNI CORP	26.06	29.07	20.01	29.06	27.43	25.20	18.14	19.77	12.76	14.74	14.46	16.47	21.10	25.05	19.78
HORMEL FOODS CORP	16.59	19.15	17.29	10.47	13.79	17.24	19.76	19.85	19.52	17.94	15.69	17.47	17.06	17.68	16.86
HUBBELL INC -CL B	12.07	18.26	19.11	20.07	16.57	20.28	17.19	17.01	6.41	14.67	14.63	17.44	16.14	16.48	16.03
IDEX CORP	35.57	33.61	33.92	28.98	27.01	24.62	17.70	18.04	8.44	11.92	11.35	13.24	22.03	34.37	17.92
ILLINOIS TOOL WORKS	15.90	19.84	22.37	22.51	22.56	21.90	20.63	18.75	14.08	14.73	14.10	17.27	18.72	19.37	18.50
INTL SPEEDWAY CORP -CL A	25.23	23.59	23.92	20.51	18.82	13.94	8.92	5.44	8.82	12.82	15.64	19.44	16.42	24.25	13.82
JOHNSON CONTROLS INC	11.47	13.86	14.89	16.08	17.73	18.37	19.65	19.45	17.22	18.62	17.72	17.37	16.87	13.40	18.02
KELLWOOD CO	12.14	3.61	8.85	11.17	11.68	0.47	9.19	13.86	8.50	8.27	11.82	10.28	9.15	8.20	9.47
KELLY SERVICES INC -CL A	11.83	14.93	15.31	14.71	15.01	15.44	15.20	14.46	2.69	3.03	0.83	3.49	10.58	14.02	9.43
KIMBALL INTERNATIONAL -CL B	9.35	10.57	11.47	11.83	14.19	12.63	13.09	10.39	3.64	7.71	1.26	4.99	9.26	10.46	8.86
KIMBERLY-CLARK CORP	21.98	21.18	1.06	34.52	20.54	27.32	36.56	33.16	28.21	29.85	27.29	26.88	25.71	14.74	29.37
KNIGHT-RIDDER INC	12.21	13.85	14.33	23.89	30.81	22.79	18.94	18.26	11.44	18.65	20.07	22.22	18.95	13.47	20.78
LA-Z-BOY INC	12.53	11.81	11.77	12.89	13.36	16.47	16.26	10.06	8.77	14.52	0.45	6.69	11.30	12.04	11.05
LANCASTER COLONY CORP	26.31	27.92	27.44	25.35	25.65	24.69	23.05	23.91	20.62	19.13	21.46	14.10	23.30	27.22	22.00
LANCE INC	12.49	11.23	-3.23	12.90	16.21	14.82	13.50	12.36	13.49	11.11	10.07	13.04	11.50	6.83	13.05
LAWSON PRODUCTS	13.19	15.10	16.63	15.90	15.89	13.77	16.33	18.16	5.50	7.73	9.65	12.12	13.33	14.97	12.78
LEE ENTERPRISES INC	19.30	21.85	21.14	14.29	19.94	19.47	20.17	22.33	58.35	11.52	10.11	10.25	20.73	20.77	20.71
LEGGETT & PLATT INC	18.26	20.23	19.85	18.27	19.70	19.00	18.85	15.36	10.25	12.13	10.07	12.89	16.24	19.45	15.17
LENNAR CORP	13.35	13.61	12.34	13.50	14.89	24.95	21.63	21.72	28.94	28.04	27.36	25.85	20.51	13.10	22.99
LIBERTY CORP	12.16	5.80	11.93	6.22	11.76	2.61	8.28	9.50	2.85	5.89	4.51	8.46	7.50	9.96	6.68
LIFETIME HOAN CORP	16.81	17.10	11.77	14.01	12.54	14.60	4.43	4.15	3.75	2.87	10.24	9.47	10.15	15.23	8.45
LINCOLN ELECTRIC HLDGS INC	-23.69	28.44	23.46	20.58	20.61	20.20	15.69	17.38	17.67	14.42	12.02	15.27	15.17	9.40	17.09
LINDSAY MANUFACTURING CO	21.46	18.18	17.11	22.69	24.48	26.41	14.67	16.50	10.02	12.39	13.22	8.58	17.14	18.92	16.55
LONGS DRUG STORES CORP	10.39	9.52	8.83	10.89	10.15	10.36	10.28	6.47	6.71	4.36	4.16	5.07	8.10	9.58	7.61
LSI INDS INC	8.81	19.20	23.11	16.08	14.46	17.17	18.85	15.64	8.05	10.64	5.90	6.85	13.73	17.04	12.63
MARCUS CORP	11.44	11.82	18.17	11.69	9.81	7.51	7.08	6.57	6.49	5.68	6.45	6.30	9.08	13.81	7.51

RETURNS ON AVERAGE COMMON STOCK EQUITY FOR
188 LOW RISK US INDUSTRIALS

Company Name	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average 1993-2004	Average 1993-1995	Average 1996-2004
MASCO CORP	11.38	9.42	-23.44	16.89	18.80	19.20	19.42	18.03	5.26	14.49	15.00	16.42	11.74	-0.88	15.95
MAY DEPARTMENT STORES CO	20.29	19.63	16.88	18.02	20.41	21.74	22.95	21.18	17.85	13.31	10.16	11.75	17.85	18.93	17.49
MCCLATCHY CO -CL A	8.57	11.30	7.41	9.19	12.89	8.90	9.79	9.67	5.93	12.77	13.22	11.81	10.12	9.09	10.46
MCCORMICK & COMPANY INC	22.04	12.78	19.33	10.26	23.35	26.57	26.81	37.08	35.65	34.07	31.60	26.08	25.47	18.05	27.94
MCDONALD'S CORP	18.27	19.15	19.58	18.99	18.58	16.93	20.39	20.99	17.51	10.04	13.55	17.40	17.62	19.00	17.15
MCGRATH RENTCORP	14.70	16.26	16.31	17.77	25.65	23.42	23.74	26.66	22.18	9.34	16.04	19.30	19.28	15.76	20.46
MCGRAW-HILL COMPANIES	1.32	23.40	23.32	41.38	20.79	22.89	26.26	27.34	20.86	28.70	29.12	27.28	24.39	16.01	27.18
MDC HOLDINGS INC	5.92	10.46	8.68	9.93	10.92	19.54	26.02	28.31	27.41	23.01	23.37	32.13	18.81	8.35	22.29
MEREDITH CORP	6.37	10.02	15.98	21.46	32.38	23.60	25.26	19.20	17.22	19.13	18.06	20.32	19.08	10.79	21.85
MET-PRO CORP	8.81	12.50	14.59	16.18	16.90	15.93	15.70	17.04	12.72	11.08	10.91	7.80	13.35	11.97	13.81
MINE SAFETY APPLIANCES CO	4.07	5.89	7.36	9.43	9.17	7.64	6.81	10.04	13.36	13.09	22.12	20.94	10.83	5.77	12.51
MODINE MANUFACTURING CO	18.15	24.44	18.67	17.35	17.94	16.89	14.01	9.70	4.59	6.57	7.24	9.90	13.79	20.42	11.57
MOVADO GROUP INC	12.58	16.86	9.83	11.20	12.70	13.45	8.73	13.52	10.32	9.82	8.95	8.90	11.40	13.09	10.84
NATURES SUNSHINE PRODS INC	28.25	27.20	31.77	32.19	30.97	33.06	23.49	21.10	18.44	7.86	6.33	20.26	23.41	29.07	21.52
NEW YORK TIMES CO -CL A	0.46	13.57	8.61	5.22	15.65	17.59	20.82	29.13	36.59	24.78	22.74	20.95	18.01	7.55	21.50
NIKE INC -CL B	17.64	21.57	25.17	28.49	12.45	13.69	17.90	17.79	18.23	18.90	21.56	*19.80*	19.43	21.46	18.76
NORDSON CORP	21.80	22.82	23.74	22.27	21.45	9.57	21.78	23.32	9.63	8.29	12.36	18.01	17.92	22.79	16.30
NORFOLK SOUTHERN CORP	12.40	14.35	14.98	15.71	13.84	12.92	4.03	2.93	6.30	7.31	6.25	12.34	10.28	13.91	9.07
NORTHROP GRUMMAN CORP	7.45	2.68	18.33	13.05	17.13	7.09	15.82	16.95	7.23	4.34	5.67	6.67	10.20	9.49	10.44
OSHKOSH TRUCK CORP	4.52	11.18	7.23	-2.43	8.25	12.89	21.21	21.78	15.70	15.75	16.29	19.53	12.66	7.64	14.33
PALL CORP	14.39	17.51	19.24	20.01	8.65	11.77	6.89	19.66	15.41	9.21	11.77	15.24	14.15	17.05	13.18
PARKER-HANNIFIN CORP	6.97	5.49	20.23	18.61	18.70	20.01	17.56	17.69	14.23	5.09	7.69	12.57	13.74	10.90	14.68
PENTAIR INC	13.57	13.24	16.95	14.28	15.87	16.64	12.53	5.70	3.25	12.25	11.94	12.64	12.40	14.59	11.68
PEPSIAMERICAS INC	21.38	19.30	22.62	21.95	0.69	14.32	-1.20	6.20	1.31	9.01	10.46	11.41	11.45	21.10	8.24
PIER 1 IMPORTS INC/DE	2.96	11.66	4.44	17.50	21.81	20.17	17.70	19.46	17.93	21.05	17.78	8.97	15.12	6.35	18.04
PULITZER INC	24.26	28.80	27.88	25.63	23.55	21.92	0.25	4.33	1.34	4.30	5.06	5.04	14.36	26.98	10.16
PULTE HOMES INC	14.99	26.10	7.93	22.59	6.43	11.78	17.69	16.10	17.10	18.01	20.12	24.76	16.97	16.34	17.18
QUIXOTE CORP	25.02	24.27	10.53	-18.57	-8.58	0.02	18.39	20.02	23.14	12.43	14.06	-24.42	8.02	19.94	4.05
RAVEN INDUSTRIES INC	18.15	14.06	13.09	14.52	13.63	9.98	11.58	12.51	17.69	20.29	22.19	26.99	16.22	15.10	16.60
RAYTHEON CO	17.03	14.51	19.28	17.12	7.02	8.12	4.19	1.30	-6.76	-1.31	4.05	3.82	7.36	16.94	4.17
REGIS CORP/MN	10.34	8.21	21.53	20.72	5.11	18.02	14.27	19.27	17.16	18.38	17.21	16.87	15.59	13.36	16.33
ROBBINS & MYERS INC	11.37	11.62	18.63	25.21	26.74	22.69	7.77	11.24	10.75	6.33	5.25	3.31	13.41	13.87	13.25
ROCKWELL AUTOMATION	19.60	20.09	20.79	18.06	14.21	-10.18	19.11	23.97	14.29	14.27	17.90	24.07	16.35	20.16	15.08
ROLLINS INC	30.63	27.99	19.26	11.27	0.89	5.83	9.41	12.70	20.65	30.77	31.17	38.04	19.88	25.96	17.86
RUBY TUESDAY INC	20.28	26.65	-1.30	11.90	13.35	16.83	16.18	23.05	18.84	23.63	23.60	20.90	17.82	15.21	18.70
RUSS BERRIE & CO INC	5.67	2.41	7.50	13.43	29.23	12.29	10.98	14.66	11.66	12.38	8.64	-6.15	10.22	5.19	11.90
RYDER SYSTEM INC	-3.35	14.49	13.12	-2.67	16.22	14.75	36.87	7.25	1.50	9.63	11.05	15.11	11.16	8.09	12.19
RYLAND GROUP INC	-1.75	6.59	-1.57	4.53	6.59	13.10	17.99	19.43	26.80	29.87	32.13	34.08	15.65	1.09	20.50
SCHAWK INC -CL A	3.13	23.61	7.30	-41.86	21.00	38.73	17.92	15.08	10.41	15.98	17.32	19.07	12.31	11.35	12.63
SKYLINE CORP	9.03	8.76	10.82	11.56	11.09	13.63	7.81	5.80	6.28	3.12	3.10	3.10	7.84	9.53	7.28
SMITH (A O) CORP	16.60	19.69	17.93	16.42	37.32	11.11	10.20	6.77	3.22	10.66	9.60	6.07	13.80	18.07	12.37
SMUCKER (JM) CO	13.41	14.75	10.97	10.89	12.24	12.06	8.27	11.30	11.70	13.72	9.54	*9.20*	11.50	13.04	10.99
SOUTHWEST AIRLINES	16.17	15.64	13.70	13.48	17.38	19.67	18.13	19.89	13.69	5.71	9.33	5.92	14.06	15.17	13.69
STANDEX INTERNATIONAL CORP	18.58	22.58	30.50	23.00	19.52	14.02	20.33	16.94	14.78	11.64	8.31	6.52	17.23	23.89	15.01
STANLEY WORKS	13.45	17.59	7.99	12.80	-6.04	21.58	21.36	26.42	20.18	20.37	11.71	35.28	16.89	13.01	18.18
STRIDE RITE CORP	21.02	6.66	-3.01	0.95	7.86	8.65	10.67	10.08	7.42	9.36	9.79	9.97	8.28	8.22	8.30
STURM RUGER & CO INC	33.55	29.02	20.13	24.52	18.52	15.24	20.99	15.94	8.02	5.60	9.10	3.39	17.00	27.57	13.48
SUPERIOR INDUSTRIES INTL	28.81	29.87	24.72	19.51	20.57	17.46	21.29	21.25	13.05	15.98	13.13	7.47	19.43	27.80	16.64
SUPERIOR UNIFORM GROUP INC	11.70	14.45	5.36	12.10	12.04	10.02	11.17	9.01	7.87	6.49	6.91	6.26	9.45	10.50	9.10
SUPERVALU INC	15.41	3.53	13.88	13.94	18.48	15.33	15.49	4.05	10.77	13.15	13.28	16.35	12.81	10.94	13.43
SYSCO CORP	18.40	18.23	19.05	19.24	21.05	23.56	26.03	28.45	30.54	31.77	35.95	38.10	25.86	18.56	28.30
TECUMSEH PRODUCTS CO -CL A	12.27	16.34	14.34	12.34	10.32	7.44	14.13	6.58	4.34	5.53	0.01	1.00	8.72	14.32	6.85
TELEFLEX INC	13.20	14.24	14.71	14.95	16.05	16.54	16.75	16.90	15.30	14.82	11.05	0.88	13.78	14.05	13.69
TENNANT CO	10.80	17.45	18.69	17.31	18.41	19.09	14.88	19.33	3.02	5.40	8.85	7.88	13.43	15.65	12.69

RETURNS ON AVERAGE COMMON STOCK EQUITY FOR
188 LOW RISK US INDUSTRIALS

Company Name	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average 1993-2004	Average 1993-1995	Average 1996-2004
THOMAS INDUSTRIES INC	2.99	8.15	9.23	11.58	13.57	13.46	13.07	14.10	12.38	11.84	10.70	25.08	12.18	6.79	13.98
THOR INDUSTRIES INC	14.83	18.15	13.53	14.16	13.74	15.03	20.27	20.03	12.87	18.46	20.98	22.90	17.08	15.51	17.61
TOOTSIE ROLL INDUSTRIES INC	17.99	16.75	15.75	16.14	18.28	18.06	17.24	17.03	13.58	12.83	12.23	11.60	15.62	16.83	15.22
TORO CO	9.41	14.19	20.71	18.25	16.06	1.62	12.91	15.17	15.32	16.96	20.34	24.66	15.47	14.77	15.70
TREDEGAR CORP	6.34	22.66	14.05	23.51	24.10	23.63	15.43	25.61	2.00	-0.54	-5.79	6.29	13.11	14.35	12.69
TRIBUNE CO	17.79	19.40	20.29	25.88	23.84	20.15	52.90	4.51	1.54	10.42	13.57	8.27	18.21	19.16	17.90
TYSON FOODS INC -CL A	15.41	-0.16	15.90	5.78	11.75	1.40	11.23	7.02	3.18	10.92	8.85	9.77	8.42	10.38	7.77
UNIFIRST CORP	14.15	13.37	12.98	13.71	14.07	14.32	9.57	7.52	8.34	9.02	9.07	9.55	11.31	13.50	10.58
UNION PACIFIC CORP	14.81	10.90	16.46	12.39	5.25	-8.11	10.52	10.11	10.59	13.26	11.40	4.83	9.37	14.06	7.81
UNITED PARCEL SERVICE INC	21.13	21.96	21.29	20.74	15.17	26.26	8.99	26.42	24.27	28.67	21.23	21.34	21.45	21.46	21.45
UNIVERSAL CORP/VA	22.30	9.70	6.68	17.68	22.75	27.77	23.42	21.95	21.46	18.71	14.79	12.14	18.28	12.89	20.07
UNIVERSAL FOREST PRODS INC	20.30	16.10	18.13	19.37	15.72	17.18	15.49	13.52	13.19	13.83	14.13	14.69	15.97	18.18	15.23
VF CORP	18.02	16.52	8.76	15.76	18.02	19.45	17.01	12.07	6.14	19.32	21.93	21.18	16.18	14.43	16.76
WAL-MART STORES	23.92	22.84	19.94	19.16	19.78	22.37	23.75	22.02	20.08	21.60	21.83	22.08	21.61	22.23	21.41
WALGREEN CO	18.78	19.10	19.06	19.38	19.75	20.57	19.71	20.13	18.76	17.82	17.51	17.64	19.02	18.98	19.03
WASHINGTON POST -CL B	14.79	15.33	16.45	17.56	22.39	30.03	15.21	9.51	14.45	12.23	12.27	14.79	16.25	15.52	16.49
WATSCO INC	14.83	12.72	14.16	14.81	10.63	10.07	10.23	6.31	7.80	8.76	10.11	12.60	11.09	13.90	10.15
WATTS WATER TECHNOLOGIES INC	9.36	11.77	11.92	-13.86	15.84	15.08	9.44	7.74	11.02	11.97	9.11	10.08	9.12	11.02	8.49
WEIS MARKETS INC	10.29	10.16	10.22	9.80	9.39	9.63	8.81	7.91	6.80	10.98	9.68	9.97	9.47	10.22	9.22
WENDY'S INTERNATIONAL INC	14.04	15.15	14.67	16.63	11.65	10.95	15.62	15.48	17.96	17.66	14.72	3.00	13.96	14.62	13.74
WEYCO GROUP INC	8.18	10.15	11.02	13.11	14.42	14.88	16.64	15.27	13.11	16.65	18.66	18.55	14.22	9.78	15.70
WILEY (JOHN) & SONS -CL A	15.78	20.22	22.77	16.47	25.26	24.59	31.28	30.00	23.08	28.12	23.41	*20.10*	23.42	19.59	24.70
WINNEBAGO INDUSTRIES	12.07	21.62	30.81	12.04	20.11	20.29	33.29	29.85	22.89	28.23	25.55	34.25	24.25	21.50	25.17
WOLVERINE WORLD WIDE	10.80	13.53	14.29	14.82	15.92	14.30	10.24	3.19	12.72	12.89	12.94	14.84	12.54	12.88	12.43
WOODWARD GOVERNOR CO	6.29	-1.64	6.09	10.93	8.67	10.03	13.34	18.15	17.85	13.41	3.45	8.41	9.58	3.58	11.58
YORK INTERNATIONAL CORP	16.55	18.25	-16.68	21.05	6.64	19.82	10.50	14.40	6.18	11.42	1.57	9.86	9.96	6.04	11.27
Mean	14.31	16.07	14.71	14.98	15.77	15.72	15.94	16.07	13.40	13.98	13.60	13.59	14.8	15.0	14.8
Median	14.45	15.22	14.96	15.74	15.61	16.14	15.81	16.16	12.74	12.86	12.69	13.13	14.1	14.8	13.9
													14.6	14.6	14.5

Note: 2004 numbers in italics are *Value Line* forecasts.

Source: Standard and Poor's Research Insight, *Value Line*

RATIO OF DIVIDEND YIELD TO LONG TERM CANADA BOND YIELD FOR SIX CANADIAN UTILITIES[1/]
(Annual Average of Monthly Sample Median Values)

	Dividend Yield	30 Year Canada	Ratio
1996	5.49%	7.75%	70.9%
1997	4.45%	6.66%	66.8%
1998	3.96%	5.59%	70.9%
1999	4.60%	5.72%	80.4%
2000	5.10%	5.71%	89.2%
2001	4.24%	5.77%	73.5%
2002	3.81%	5.67%	67.4%
2003	3.76%	5.31%	70.8%
2004	3.59%	5.11%	70.3%
Means for 30-year Canada Bond yields:			
5.5% and below	**3.86%**	**5.26%**	**73.36%**
5.6 - 6.0%	**4.30%**	**5.79%**	**74.32%**
6.1 - 6.5%	**4.88%**	**6.26%**	**78.08%**
Over 6.5%	**5.22%**	**7.49%**	**69.52%**
All periods	**4.31%**	**5.89%**	**73.28%**

[1/] Canadian Utilities Ltd., Emera Inc., Enbridge Inc., Fortis Inc., Terasen Inc. and TransCanada Corp.

Source: Standard and Poor's Research Insight and Bank of Canada

Response of the Pre-Tax Return on Equity to a Change in Pre-Tax Bond Return Assuming Constant After-Tax Equity Risk Premium

Step 1:			
Initial Bond Return (Yield): 5%			
Pre-Tax Bond Return			5.00
Personal Income Tax Rate			45%
After-Tax Bond Return			2.75
Step 2:			
Initial Pre-Tax Equity Return: 10%			
Initial Pre-Tax Return on Equity			10.00
Return comprised of:			
	Dividends	40%	4.00
	Capital Gains	60%	6.00
Tax on Dividends		30%	1.20
Tax on Capital Gains		20%	1.20
After-Tax Equity Return			
	Dividends		2.80
	Capital Gains		4.80
After-Tax Equity Return			7.60
Step 3:			
After-Tax Equity Risk Premium			
Less After-Tax Bond Return			2.75
After-Tax Equity Risk Premium			4.85
Step 4:			
Increase Bond Return (Yield) to 6%			
Pre-Tax Bond Return			6.00
Tax Rate			45%
After-Tax Bond Return			3.30
Step 5:			
Calculate Required After-Tax Return on Equity:			
After-Tax Bond Return			3.30
Add After-Tax Equity Risk Premium			4.85
Required After-Tax Return on Equity			8.15
Step 6:			
Calculate Corresponding Pre-Tax Return on Equity:			
Tax Adjustment Factor [1/]			0.76
Pre-Tax Return on Equity	After-Tax ROE / Tax Adjustment Factor		10.72
Step 7:			
Calculate the changes in return:			
Change in Pre-Tax Equity Return	10.72 -10.00		0.72
Change in Pre-Tax Bond Return	6.00 - 5.00		1.00
"Sliding Scale"	Change in Pre-Tax Equity Return / Change in Pre-Tax Bond Return		72.4%

[1/] The after-tax return on equity is grossed up for personal income taxes at the rates and proportions of dividends and capital gains used in Step 2.

IMPACT OF CHANGE IN CAPITAL STRUCTURE ON COST OF EQUITY

THEORY 1:

The overall cost of capital is invariant to changes in the capital structure. The cost of equity rises as the debt ratio rises, but the after-tax weighted average cost of capital stays the same.

Formula for After-Tax Weighted Average Cost of Capital:

$WACC_{AT}$ = (Debt Cost)(1-tax rate)(Debt Ratio) + (Equity Cost)(Equity Ratio)

ASSUMPTIONS:

Debt Cost = Current Cost of Long Term Debt for A rated utility
= 6.35%

Equity Cost = Recommended Return on Equity for Benchmark Utility
= 10.5%

Tax Rate = 34.5%

STEPS:

1. Estimate $WACC_{AT}$ @ 37.5% common equity ratio

$WACC_{AT}$ = (6.35%)(1-.345)(62.5%) + (10.5%)(37.5%)
= 6.54%

2. Estimate Cost of Equity at 33% common equity ratio with $WACC_{AT}$ unchanged at 6.54%

$WACC_{AT}$ = (Debt Cost)(1-tax rate)(Debt Ratio) + (Equity Cost)(Equity Ratio)
6.54% = (6.35%)(1-.345)(67%) + (X)(33%)

Cost of Equity at 33.0% Common Equity Ratio = 11.4%

3. Difference between Equity Return at 37.5% and 33% common equity ratios:
11.4% - 10.5% = 0.9% (90 basis points)

THEORY 2:

After-Tax Cost of Capital Declines as Debt Ratio Rises; Cost of Equity Rises

ASSUMPTIONS:

Debt Cost = Current Cost of Long Term Debt for A rated utility
= 6.35%

Equity Cost = Recommended Return on Equity for Benchmark Utility
= 10.5%

Tax Rate = 34.5%

STEPS:

1. Estimate $WACC_{AT}$ @ 37.5% common equity ratio

$WACC_{AT}$ = (6.35%)(1-.345)(62.5%) + (10.5%)(37.5%)
= 6.54%

2. Estimate $WACC_{AT}$ @ 33% common equity ratio (67% debt ratio)

$$WACC_{AT(\text{new debt ratio})} = WACC_{AT(\text{old debt ratio})} \times (1\text{-}t \times \text{Debt Ratio}_{new})/(1\text{-}t \times \text{Debt Ratio}_{old})$$

$$WACC_{AT(\text{new debt ratio})} = 6.54\% \frac{(1\text{-}.345 \times 67.0\%)}{(1\text{-}.345 \times 62.5\%)}$$

$WACC_{AT(\text{new debt ratio})}$ = 6.41%

3. Estimate Cost of Equity at new $WACC_{AT}$ at higher debt ratio:

$WACC_{AT(new\ debt\ ratio)}$ = (Debt Cost)(1-tax rate)(Debt Ratio) + (Equity Cost)(Equity Ratio)

6.41% = (6.35%)(1-.345)(67%) + (X)(33%)

Cost of Equity at 33% equity ratio = 11.0%

4. Difference between Equity Return at 33% and 37.5% common equity ratios:
11.0% - 10.5% = 0.5% (50 basis points)

ESTIMATE OF IMPACT OF CHANGE IN CAPITAL STRUCTURE ON COST OF EQUITY

50-90 BASIS POINTS

The Rating Process and the Cost of Capital for Utilities

Five Reasons why Canadian Utilities Have Lower Ratios, and Five Changes to Regulation Which Should be Introduced in Canada

May 2003

Regulation in Canada

- Regulation in Canada (non-telecommunication) has been heavily influenced by the National Energy Board (NEB)
- The NEB in Canada has the greatest resources available, and ranks among the most sophisticated regulators in Canada
- Provincial regulators have followed many of the NEB practices, including use of the formula – Canada + 325 or so basis points to set return on equity, and also a range of deemed equity near the 35% level
- Encouraging competition where returns are consistent with risk has been a practice followed in Canada and the U.S.
- Performance-based regulation has been followed where customers and the utilities often negotiated how to share the efficiencies and have avoided long arduous regulatory hearings
- Canadian regulators generally have been flexible, and unfavourable decisions can be reversed or altered when the extent of the problem is seen
- No Canadian utility has gone bankrupt due solely to the actions of the regulator
- This is not so in the U.S. with the California incident – a good example

Regulation in Canada (Cont'd…)

- PG+E went bankrupt when:
  - The state regulator forced sale of generation capacity
  - The regulator stopped PG+E from securing long-term power contracts
  - A flow-through of higher wholesale power costs was refused, and kept retail power rates rigid, resulting in the inevitable for PG+E
- Even debt levels of 30% would not have saved PG+E from bankruptcy
- Knowledge of the Regulator's policies, not quantitative ratios, were key to measuring the risk profile of PG+E
- DBRS looks at earnings past, present and future, the balance sheet and cash flows, past, present and future, and a wide range of subjective factors to arrive at a final rating. Regulation is an important component of this
- No one quantitative ratio is "magic," and the many qualitative and subjective factors are looked at in conjunction with quantitative data
- DBRS also stress tests the cash flow statement, looking at the effect different earnings, capital expenditure and dividend patterns have on future financial ratios – to get a worse case quantitative scenario – to complement the qualitative factors

Why Canadian Ratios for Utilities Are Lower Than Ratios in the U.S.

(1) Higher sensitivity to seasonality in Canada than the U.S.

- Canada has extreme temperatures which result in wide swings in accounts receivable and inventories
- Areas such as gas distribution tend to have wide swings in receivables and inventories between September to April
- The swing in debt levels can be 5%-10% between peak and trough

(2) Flow-through versus normalized tax accounting used in Canada

- Canadian regulators usually permit only flow-through accounting, versus the normalized taxation method often used in the U.S.
- Thus, U.S. utilities collect the corporate tax, and have coverage ratios up to 40-50 basis points better than Canadian utilities

Why Canadian Ratios for Utilities Are Lower Than Ratios in the U.S. (Cont'd…)

(3) Lower return on equity

- Canadian utilities earn lower return on equity, which is about 200 basis points below the U.S.
- In Canada, the formula method was initiated by the NEB, and adopted by most of the Provincial Regulators
- The formula generally allows a rate of return equal to 325 basis points over Canada bonds, with some limits on how much returns may change in any one given year
- The lower return on equity reduces interest coverage in Canada by about 20 basis points

Why Canadian Ratios for Utilities Are Lower Than Ratios in the U.S. (Cont'd…)

(4) Lower deemed equity in the capital structure in Canada

- Canadian utilities are generally allowed lower deemed equity to the degree of 5%-10%
- A 10% lower debt proportion can improve interest cost coverage by 50 basis points so this can cause significant savings in interest coverage
- Typically in Canada regulators often allow deemed equity of 30%-35%
- Utilities can partly neutralize this disadvantage to a degree by issuing hybrid capital known as super subordinate debt – which is not as good as pure equity
- If four conditions are met, DBRS will give a high weighting to hybrid securities
  - How subordinated are the instrument securities?
  - Do the securities have a maturity date?
  - Does default occur if the interest payment is not made?
  - Is the intent of the Company to treat the instrument as equity?
- Long-term super-subordinate debt 30 years + which receives good equity treatment by DBRS (which means interest payments also will have to be deferred) represents a cheap way of issuing equity, and may partly but not fully, neutralize the lower deemed equity allowed

Why Canadian Ratios for Utilities Are Lower Than Ratios in the U.S. (Cont'd…)

(5) Higher interest rates in Canada than the U.S.

- Interest rates were 100-200 basis points higher in Canada than the U.S. through much of the 1990s
- The higher interest rates in Canada had a downward effect on key coverage ratios, and much of this debt is still outstanding

Conclusion

- Quantitative ratios in Canada automatically have downward biases
- Our colder more extreme weather automatically raises debt proportions at the peak of the cycle because of inventory/receivable peaks and troughs
- The debt levels of Canadian utilities may swing, depending on the date chosen, due to seasonal factors

1) Flow-through tax accounting used in Canada costs Canadian utilities approximately 40 basis points on coverage

2) The 200 basis point lower allowed return on equity costs Canadian utilities 15-20 basis points on coverage

Why Canadian Ratios for Utilities Are Lower Than Ratios in the U.S. (Cont'd…)

Conclusion Cont'd…

3) The 5%-10% lower deemed equity of Canadian utilities can cost 50 basis points for EBIT coverage ratios

4) The 1%-2% higher interest rates which prevailed in Canada through most of the 1980s and 1990s cost Canadian utilities about 20 basis points

- Thus, Canada's climate, and the nature of Canadian regulation cost Canadian utilities about 130 basis points on average relative to the U.S.
- About 110 basis points of the 130 basis point difference is caused by regulators

5) Where all five variables discussed prevail at the same time (Case 5) the difference in interest coverage is 3.15 times versus 1.54 times, assuming Canada has (a) Deemed equity of 30% versus 40% in the U.S. (b) Return on equity of 12% in the U.S. and 10% in Canada (c) Income tax rates at 43%

The Need for Change in Standards by Canadian Regulators: Reasons for Change

(1) Different standards used between Canada and the U.S. have an immense effect on differences in coverage and other financial ratios which are important in credit ratings. On the whole, in our opinion Canadian regulators should give greater consideration to the effects that their actions have on the credit rating

(2) Competition is growing, raising risk and justifying higher rates of return

Examples:

- Alliance Pipeline provides competition for TransCanada Pipelines
- Restructuring of electricity in Alberta makes the area more competitive

The Need for Change in Standards by Canadian Regulators (Cont'd…)

(3) Regulators make returns in Canada more consistent with the U.S.

- TransCanada's 9.79% return on equity on 33% equity versus PGT's 12% on 35%
- Foothills eastern leg 9.79% on 30% versus Northern Border 12% on 35%
- TransCanada's Mainline 9.79% on 33% versus Great Lakes 13.25% on 44%
- Alliance Pipeline Canada 11.3% on 30% versus Alliance Pipeline U.S. 10.7% on 30%
- Maritime Northeast Pipeline Canada 13% on 25% versus Maritime NE Pipeline U.S. 14% on 25%
- Why is there such a different return between TransCanada versus Great Lakes or Foothills versus Northern Border?

(4) Provide more consistent standards

- A 30% deemed equity gets the same return on equity as a 35% or 40% deemed equity
- The lower the equity component, the higher the risk – so this is inconsistent reasoning

(5) Less of a safety margin in financial ratios if things go wrong in Canada

Positive Factors with Canadian Regulators

(1) Provincial regulation is quite consistent with NEB regulation. Policies usually do not clash

(2) Less turf wars between federal and provincial regulators

(3) (a) Canadian regulators will work with utilities to help them overcome problems.
Example: The TransCanada take or pay gas recovery – over ten years

(b) Contrast this with the California regulator and PG&E experience

Effect of Canadian Style Regulation on Ratings

- DBRS has given Canadian regulation positive marks for consistency and stability (on the downside), and has considered this in the ratings (a subjective factor)
- However, Canadian utilities have less "safety margin" than U.S., and are vulnerable to a quick downgrade if something goes wrong
- There is a significant difference in financial ratio strength between Canadian and U.S. utilities

General Changes in Regulation That DBRS Would Like to See

1. Movement to performance-based regulation, where the customers and the utility work out returns and rewards, and regulatory hearings are reduced
2. Increase the allowed return on equity in order to make it more consistent with U.S. returns
3. Increase the deemed equity component to 35%-40% ranges

Regulation Comparison of OFGEM vs. FERC vs. NEB

Factor	OFGEM (U.K.)	FERC (U.S.)	NEB (Canada)
Regime	Rate cap	Cost-plus	Cost-plus
Philosophy/Objectives	The main objective is to protect the consumer and neutralize monopoly conditions in distribution and transmission. This includes not only establishing rates of return, but also monitoring quality of service, adequacy of capex to satisfy future demand, and measures of efficiency to determine future rates. The regulator is sophisticated, transparent, and has a good understanding of the rating process.	Although FERC historically employed a "laissez faire" approach to company regulation when compared to OFGEM and NEB, recent market events have prompted it to become a more active force in the marketplace. However, in general the rates of return better balance protection to the consumer and returns to the utility. The returns allowed by FERC can be 200 basis points higher than in Canada. Despite this, FERC often has to contend with lawsuits from utilities challenging its decisions. FERC is knowledgeable about the importance of ratings to a utility.	The NEB falls in between OFGEM and FERC in rate of return philosophy. It allows negotiated settlements between utilities and shipper, which makes possible performance-based regulation in Canada. Setting returns high enough to ensure investment-grade ratings is one of the principles followed by OFGEM and FERC. However, the NEB's policies have not strongly considered capital market access for utilities, and the NEB is the least concerned about how credit ratings affect capital access of utilities.

Regulation Comparison of OFGEM vs. FERC vs. NEB (Cont'd…)

Factor	OFGEM (U.K.)	FERC (U.S.)	NEB (Canada)
Consistency	One regulator prevails in the U.K. for all matters relating to onshore downstream natural gas and electricity (offshore and upstream are not regulated by OFGEM). This results in consistent decisions and only one body to conduct hearings.	Individual states have jurisdiction over matters relating to retail gas and electricity, while FERC has jurisdiction over inter-state movements. The result is inconsistency between states, and high costs preparing for many rate hearings.	As in the U.S., there can be inconsistency since the ten provinces and the federal NEB have jurisdiction. (The NEB has jurisdiction for inter-provincial movements of energy) However, practice shows that the provincial regulators work consistently with federal regulators.

Regulation Comparison of OFGEM vs. FERC vs. NEB (Cont'd…)

Factor	OFGEM (U.K.)	FERC (U.S.)	NEB (Canada)
Methodology	Cost of debt is calculated using risk-free rate of return and risk factor related to corporate risk. Cost of equity is calculated using a beta coefficient calculation to arrive at average cost of equity, and finally a weighted-average cost of capital.	Cost of equity calculation is used to arrive at weighted pre-tax cost of capital. Cost of equity return is equal to dividend yield plus growth factor to establish final return on equity. Final allowed return on regulatory assets is a composite cost of capital multiplied by regulatory assets.	Average risk-free return is used, plus a spread to allow for risk. The risk-free return is calculated using the three-year average yield of long-term Canada bond. The risk adjustment is calculated at 325 basis points over forecast 10-year Canada bond yields, with year-over-year adjustments capturing 75% of the movement in interest rates.

Regulation Comparison of OFGEM vs. FERC vs. NEB (Cont'd…)

Factor	OFGEM (U.K.)	FERC (U.S.)	NEB (Canada)
Profitability	Resulting returns on regulatory assets in the real 6.25%-6.50% range are low relative to alternative investments. The regulator subjected companies to sharp rate cuts effective April 1, 2000. Then annual rate changes restricted to RPI (Inflation) minus 1.5%-3%. Finally, cost saving benefits are expected to revert to the consumer in 2005, negatively affecting long-term profitability further. In 1998, the U.K. government also a levied surprise windfall profits tax on most utilities.	FERC had an initial conflict when gas and electricity divisions were merged at the FERC level. Returns in the electricity area were 100 basis points higher than what was allowed in the pipeline area. FERC resolved the situation by allowing higher returns for the pipelines, the company's proxy for calculating returns. The six proxy companies used in gas pipelines are now down to three companies due to mergers.	Use of average return on Canadian securities resulted in low returns (below 10% return on a deemed common equity). The allowed return is about 200 basis points below the U.S. utilities.

Regulation Comparison of OFGEM vs. FERC vs. NEB (Cont'd…)

Factor	OFGEM (U.K.)	FERC (U.S.)	NEB (Canada)
Intensity	Regulator watches and controls (with open transparency) most aspects of regulation in a hands-on procedure.	A "laissez-faire" procedure, once the rules have been set.	In between the two regulators. It does not control as intensely as OFGEM.
Lawsuits against regulatory decisions	Lawsuits are rare.	Lawsuits are common. Litigation after a regulatory decision happens quite often.	Lawsuits are rare, but could become more prevalent if there is no change.

Regulation Comparison of OFGEM vs. FERC vs. NEB (Cont'd…)

Factor	OFGEM (U.K.)	FERC (U.S.)	NEB (Canada)
Excess profits and cost savings	The decision to levy a windfall profit tax in 1998 was political, not regulator induced. The cost savings are expected to accrue to the customer after 2005, restricting future growth in profitability.	Regulation allows excess profits beyond allowed returns to accrue to the company. Once the returns have been set, (if through efficiency the company does better) the Company can keep the excess. Under performance-based regulation, the company and customers may negotiate how to share savings.	Profits remain with the company until the next rate hearing. Under performance-based regulation, the NEB has generally approved all agreements negotiated between pipelines and customers.

Examples of Effects of Coverage Ratios

Example:		
Assets	Liabilities + Equity	
1000	Debt	700
	Equity	300
	Total	1,000

Case 1

Effects of 12% return on equity in the U.S. versus 10% returns in Canada, all other things being equal

	Canada	U.S.
Income		
300 x 10%	30	
300 x 12%		36
Taxes (43%)	23	27
Total EBT	53	63
Interest (based on Canadian interest)	56	56
EBIT	109	119
Interest coverage	$\frac{109}{56} = 1.95$	$\frac{119}{56} = 2.13$

- The 200 higher return on equity gives U.S. entities 18 basis points higher interest coverage
- Interest and taxes were deemed to be the same (Canada, U.S.) to show the effect of return on equity only

Examples of Effects of Coverage Ratios (Cont'd…)

Case 2

Illustrate a higher 40% deemed equity versus 30% in Canada. Return on equity of 10% is used in both countries to highlight deemed equity effect

	Canada	U.S.
Income		
300 x 10%	30	
400 x 10%		40
Taxes (43%)	23	30
EBT	53	70
Interest (8% interest rate)	56	48
EBIT	109	118
Interest coverage	1.95	2.46

- Coverage differential is 51 basis points in the example in favour of the U.S.
- This is a major reason why interest coverage between the U.S. and Canada is so big

Examples of Effects of Coverage Ratios (Cont'd...)

Case 3

The U.S. uses normalized taxation, versus the flow-through method used in Canada. Assume that all the tax can be tax sheltered

	Canada	U.S.
Income	30	30
Taxes (43%)	0	23
EBT	30	53
Interest	56	56
EBIT	86	109
EBIT coverage	1.53	1.95

- Taxation, with a full tax shelter results in 42 basis points difference
- If the tax shelter, due to capital cost allowances exceeding depreciation was 50%, the difference between Canada and the U.S. would be 21 basis points on the coverage ratio, but utilities can often tax shelter most income in the early years of expansion

Examples of Effects of Coverage Ratios (Cont'd…)

Case 4

Higher interest rates in Canada versus the U.S. by 1.5%

Assume 70/30 Debt to Equity

	Canada	U.S.
Income	30	30
Tax	23	23
EBT	53	53
Interest		
700 x 8% - Canada	56	
700 x 6.5% - U.S.		46
EBIT	109	99
Interest coverage	1.95	2.15

- Lower interest rates in the U.S. makes a difference of 20 basis points in coverage
- While interest rates in Canada were lower in the 1990s then the U.S. – the long-term debt issued would take at least ten years to neutralize the interest rate differential

Examples of Effects of Coverage Ratios (Cont'd…)

Case 5

Coverage – U.S. and Canada combining all four variables

	Canada	U.S.
Earnings 300 x 10 - Canada	30	
Earnings 400 x 12 – U.S.		48
Income tax	0	36 *
EBT	30	84
Interest		
Canadian 700 x 8%	56	
U.S. 600 x 6.50%		39
EBIT	86	123
EBIT coverage	1.54	3.15

* In the U.S., assumption is made that all tax is sheltered.

- When all four variables are put together the difference in interest coverage is 161 basis points
- Of the four variables, three variables are directly related to actions of the regulator, including: (1) Return on equity, (2) Capital ratios, and (3) taxation methods

Summary

Differential in interest coverage U.S. higher than Canada due to:

Higher return on equity	0.18
Higher equity base	0.30
Normalized taxation with 100% tax shelter	0.42
Lower interest rates	0.20
Interest rate differential	1.10

- Interest coverage differential between U.S. and Canada is 1.10%
- If all factors are combined at the same time, the interest rate differential becomes 1.61%
- This differential gives Canadian utilities less of a "safety" margin should anything go wrong, because their ratios are much weaker

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February 1, 2005

David S. Bryson
Treasurer
Terasen Inc.
1111 West Georgia Street
Vancouver, BC V6E 4M4

Dear Mr. Bryson, David -

On January 14th, Nicole Martin and I had the privilege of representing Standard & Poor's at a CAMPUT meeting with the heads of various Canadian utility-sector regulatory bodies in Montreal. Nicole and I delivered a presentation on the influence of Canadian regulatory factors on the credit ratings of Canadian utilities, focusing on the relative capital attractiveness –from a risk perspective– of the sector. I have attached a copy of our presentation for your information.

In our opinion the relatively low ROEs and low equity levels awarded by Canadian regulators render typical Canadian regulation less favourable than approaches taken in other jurisdictions. Moreover, other regulatory risk factors (such as transparency, timeliness, etc.) are mid-range compared to other jurisdictions, in terms of their contribution to our assessment of business risks. Combined, the overall effect of regulatory factors is to constrain the ratings on Canadian utilities compared with international peers, all other things being equal.

The key message is that operating and business risks are more challenging than ten years ago, yet the allowed capital returns have not changed. Taking into account an underlying trend towards an increasingly challenging business environment in which utilities operate, coupled with extensive demands for reinvestment in the years ahead, current regulatory approaches to equity and ROE levels may entail growing downward pressure on ratings, with implications for utilities' capital market access and, ultimately, overall cost of service and rates.

As part of our ratings coverage of the Canadian utility sector, we take it upon ourselves to explain our methodologies and perspectives to any market participants who may have an active interest in our ratings and their correct interpretation. Since ratings are frequently referred to in regulatory proceedings and decisions, it is particularly important that regulatory boards and staff have an accurate understanding of our ratings, and of how our analysis views the various elements of

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utility business and financial risk, including the implications of regulatory decisions. The CAMPUT meeting was part of an ongoing effort on our part to ensure regulators understand our perspective on utility sector issues to the extent those are of interest. This effort is matched by a reciprocal effort on our part to understand the approaches and actions taken by the various Canadian regulators in detail.

Please feel free to contact me or any member of our utilities ratings team at any time if you have questions on our ongoing interactions with regulators, and how that factors into our ratings process.

Yours sincerely,

Tom Connell

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CAMPUT Financial Seminar

Attracting Capital -- How Does Canada's Regulatory Environment Compare Internationally?

Montreal
14 January 2005

Thomas Connell, *Managing Director*

Nicole Martin, *Associate Director*

The McGraw·Hill Companies

Contents

- Introduction and background
- The credit rating perspective generally
- Ratings methodology
- **Observations on Canadian vs other regulatory environments**
- Conclusions
- Q&A, Discussion

Introduction and Background

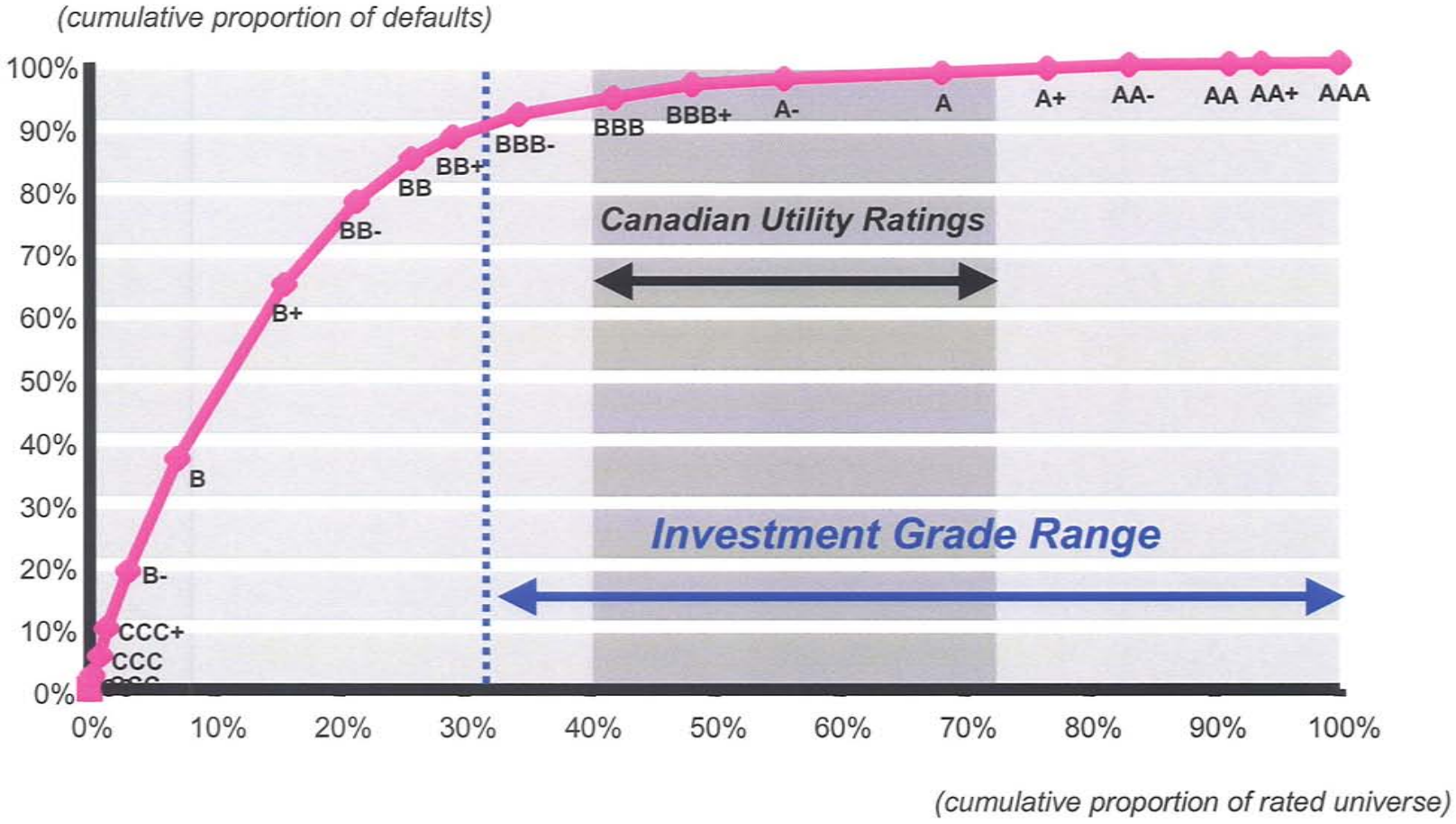
- Introducing Standard & Poor's
- Can Canadian jurisdictions attract new investment in regulated assets?

Credit Rating Perspective

- Ratings are opinions on relative debt servicing capacity and risk (and of only indirect interest for equity investors)
- Ratings are not audits, buy/sell/hold recommendations, or views on share price
- Rating judgments are concerned with regulatory actions to the extent those actions have credit implications
- Arguably, there are no good or bad ratings (*BBB "no worse" than A, but does entail more risk*)

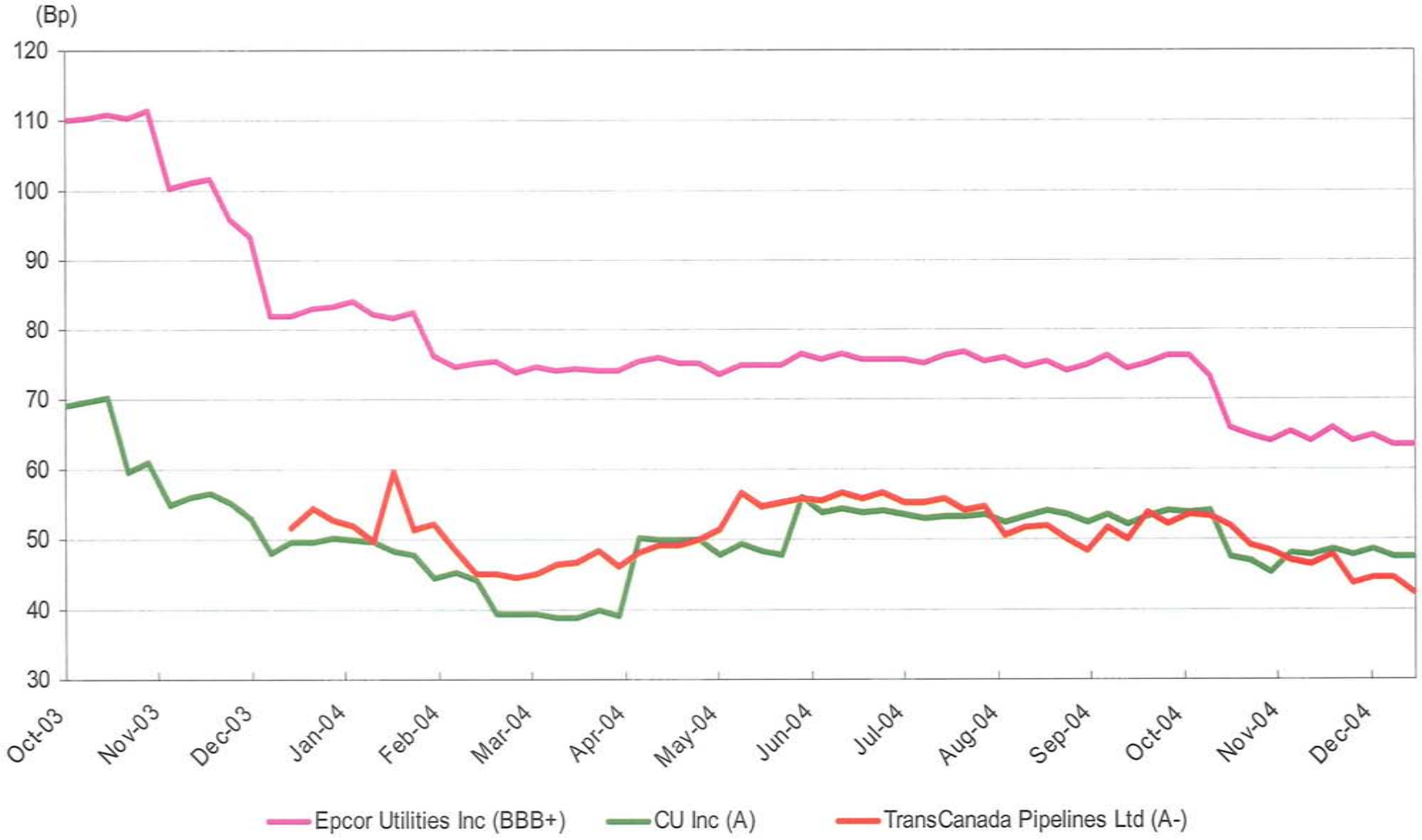
What the Ratings Mean: Relative Default Probabilities

Five-Year Relative Corporate Ratings Performance (1981-2003)



Source: Standard & Poor's Global Fixed Income Research; Standard & Poor's Risk Solutions CreditPro® 7.0

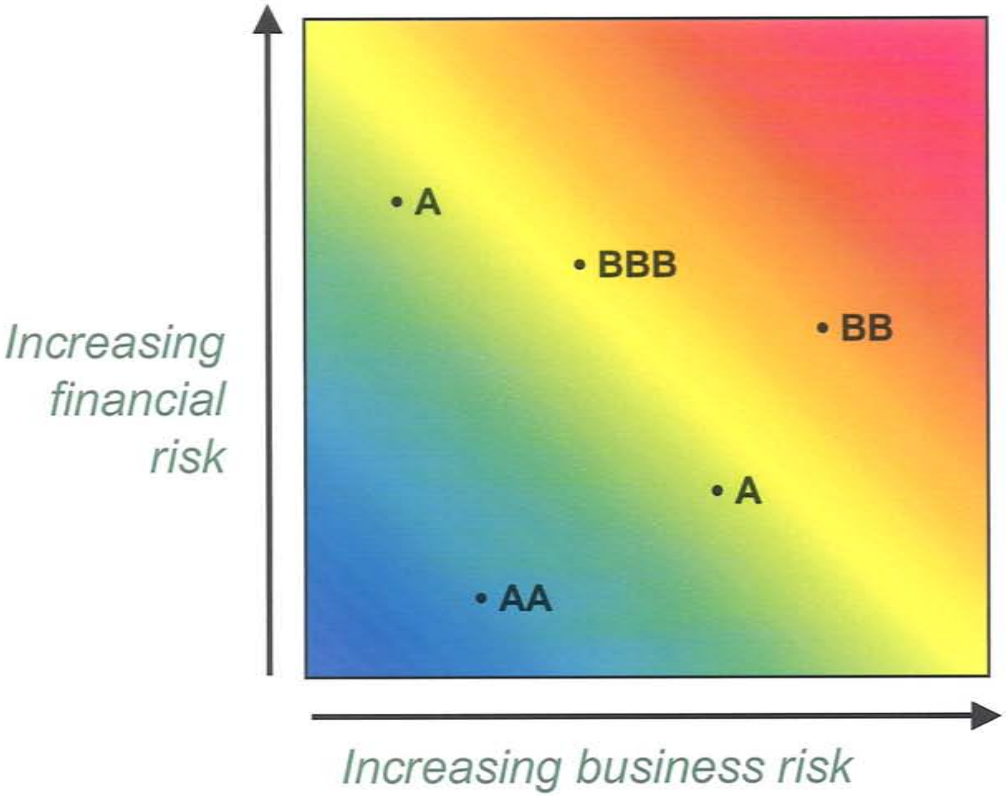
Representative Credit Spreads for Canadian Utility Companies



Source: *Bloomberg*

Credit Rating Methodology

- Ratings reflect combined view of prospective business and financial risks, broadly defined



- Higher business risk entails lower debt servicing capacity at a given rating level, and vice versa

Credit Rating Methodology (cont'd)

- Regulation is a central determinant of business risk for regulated entities, through oversight of revenues and expenses
- Regulation dictates how business, operational, and financial risks can affect a company
- Regulation entails a distinct set of risks (e.g., disallowances, performance penalties, lags)
- Potential exists for circularity between rating and regulatory outcomes

Specific Methodological Issues

- Emphasis on cash-flow-oriented analysis
- Financial ratio guidelines
- Financial statement adjustments
- Group or parent-subsidiary issues (ring-fencing)

Canadian Regulatory Environments

- Canadian regulated utilities (and regulation itself) have a track record of stable performance
- Regulatory jurisdictions across Canada provide a foundation for stable investment-grade ratings on regulated utilities (but regulation does not shield utility companies from all risks)
- Canadian regulation is evolving, along with the business and operational risks that utility companies have to manage

Regulatory Factors Affecting Utility Risk Profile

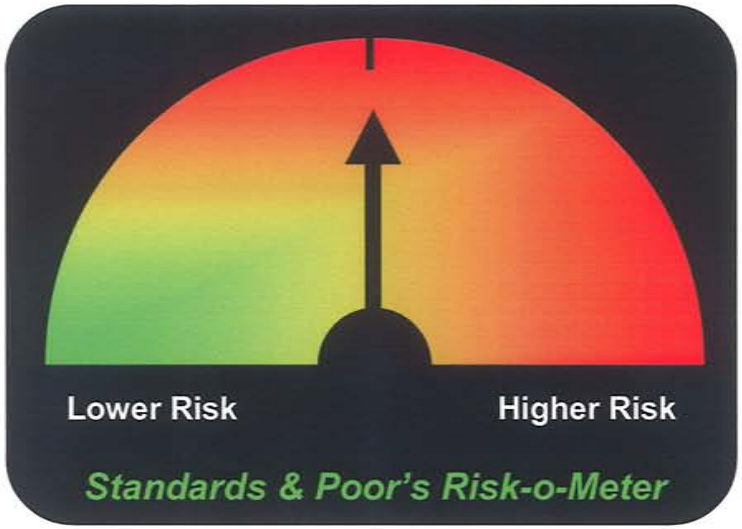
In ratings methodology, regulation can affect perceived degree of risk in varying ways, depending on:

1. Business Position Factors
   - Consistency and predictability
   - Efficiency and timeliness
   - Balance
   - Clarity and certainty
   - Political insulation
   - Risk allocation
2. Financial Position Factors
   - Capital structure, rates of return

Comparing Regulatory Risk Factors

A *Risk-o-Meter* will be used to characterize the risk contribution of different elements of the Canadian regulatory environment.

A neutral reading means that the degree of regulatory risk is in line with international median for investor-owned utilities in developed markets.



Business Risk Factors I

1. Consistency and Predictability

- Canadian regulators follow a reasonably well-established path
- Relatively free of surprises and outcomes are fairly predictable
- Slow to adapt to changes in external factors

2. Efficiency and Timeliness

- Regulatory proceedings tend to be drawn out and procedurally involved, with short-term perspective
- Notable for heavy legal component and extent of intervenor involvement
- Long waits for after-the-fact decisions; few automatic components of process; performance is improving

Business Risk Factors II

3. Balance

- Regulatory mandates and outcomes emphasize consumer protection
- Prevailing aversion to price volatility, increases
- Utility financial strength suffers accordingly

4. Clarity and Certainty

- Outcomes readily anticipated for the most part
- Extensive rationale and documentation available (perhaps even to excessive degree)
- Clear jurisdictions and coherent methodologies

Business Risk Factors III

5. Political Insulation

- Potentially most problematic risk factor arising from policy environment
- Utility services costs and standards often politically sensitive, influenced by social values
- Difficult (but not impossible) to predict

6. Risk Allocation

- Broad acceptance of (eventual) recovery of costs prudently incurred
- Specific line items can affect risk profile on the margin, on jurisdiction-specific basis
- Punitive retroactive disallowances are uncommon

Financial Risk Factors

1. Capital Structure

- Deemed equity of 35% to 45% is low compared with approaches in many other jurisdictions
- Capital structure can be further exacerbated by deferral accumulations and seasonal effects
- Liquidity management is a critical issue

2. Allowed Rates of Return

- Allowed ROEs are relatively modest
- Combined effect of ROE and equity thickness results in relatively thin debt service coverage levels

Overall View of Canadian Regulatory Environment

- Overall, regulatory factors contributing to business risk are in line with median of other comparable jurisdictions
- Other nonregulatory factors will also influence business risk level
- Weak (regulatory-driven) financial profiles constrain ratings

Conclusions

- Regulatory environment in Canada is near median of peer jurisdictions from relative risk perspective
- Regulatory risk in Canada does not impede attainment of stable investment-grade ratings
- Confidence in regulation would improve over time with enhanced timeliness, more evident priority for utility financial condition, continuing reasonable risk allocation, and sustained political forbearance
- Higher ROEs and deemed equity could support more 'A' range ratings (if desired)
- Attraction of equity capital may be more of an issue than attraction of debt capital

Questions

&

Discussion