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BY COURIER

April 17, 2009

Ms. Kirsten Walli
Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON.
M4P 1E4

Dear Ms. Walli:

EB-2009-0084 – The Cost of Capital in Current Economic and Financial Market Conditions – Hydro One Networks' Comments

Hydro One Networks Inc. ("Hydro One") is pleased to respond to the Ontario Energy Board's ("the Board") request for comments in the above proceeding.

Hydro One and the Coalition of Large Distributors ("CLD") have been concerned with the Return on Equity ("ROE") levels generated by the Board's formula for sometime. Hydro One and the CLD jointly commissioned Concentric Energy Advisors ("Concentric") in 2008 to perform a comparative analysis of equity returns for electric utilities similar to the report the Board commissioned for natural gas utilities in June, 2007. This proceeding represents the first opportunity to file the study with the Board. The June 2008 study has been attached for the information of the Board.

Given this previous effort, Hydro One and the CLD again, jointly engaged Concentric to provide a response to the issues raised by the Board in the EB-2009-0084 proceeding. Concentric's current report is also attached to this letter on behalf of Hydro One and the CLD.

Hydro One believes that the recommendations offered by Concentric in their report at page 32 would provide a short-term solution to the results generated by the current formula for ROE and short-term debt rates, thereby bringing both rates in line with current market conditions. Continued use of the current approach without modification would not satisfy the fairness standard.

Hydro One would therefore support a full cost of capital methodology review by the Board in the near future. Given similar initiatives underway by the Alberta Utility Commission and the National Energy Board, the Board may wish to consider the efficiency derived by holding a joint review proceeding given the common concerns of Canadian utilities and regulators.

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

Attachment

A Comparative Analysis of Return on Equity For Electric Utilities

FINAL REPORT

June 2008

Prepared for:
The Coalition of Large Distributors and Hydro One Networks Inc.

TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

The Coalition of Large Distributors ("CLD")[1] and Hydro One Networks Inc. ("Hydro One") here forth referred to as "the Utilities" retained Concentric Energy Advisors ("Concentric") to undertake a review of the Return on Equity ("ROE") for electric utilities in Ontario in comparison to awarded returns of electric utilities in other jurisdictions.

Specifically the Utilities requested Concentric to prepare a report that:

1. Compares recent ROE awards in jurisdictions outside of Ontario to those awarded by the Ontario Energy Board ("OEB" or "Board") for electricity utilities in the Province;

2. Provides an analysis of the forces that contribute to any differences in awards found between jurisdictions;

3. Provides a review and analysis of whether Canadian utilities compete for capital on the same basis as utilities in the U.S.; and

4. Addresses whether stand-alone companies compete for capital on the same basis as subsidiaries of larger holding companies.

This report provides Concentric's analysis and findings related to these topics. Concentric's research for this report is based on publicly available data, supplemented by prior research and interviews with knowledgeable sources regarding specific features of Ontario's utility regulation.[2] The report is not intended to be a comprehensive examination of the ROE for any specific company, but rather an overall examination of the major factors contributing to differences between ROE awards in Ontario and those in other jurisdictions.

[1] The members of the CLD include: Enersource Hydro Mississauga Inc., Horizon Utilities Corporation, Hydro Ottawa Limited, Powerstream Inc., Toronto Hydro-Electric Systems Limited and Veridian Connections Inc.

[2] Concentric conducted research and interviews for the report entitled "A Comparative Analysis of Return on Equity of Natural Gas Utilities", June 14, 2007, prepared for the OEB and available on the OEB's website under Regulatory Policy Development Research.

II. EXECUTIVE SUMMARY

Stemming from the passage of the *Energy Competition Act of 1998* ("the Act"), the authority to fix "just and reasonable" rates for Ontario's 270 plus municipal electric utilities that existed at that time was transferred to the OEB. In carrying out its responsibilities under the Act, the Board defined its broad objectives in restructuring the electric industry: i.) to protect the interests of consumers with respect to price and the adequacy, reliability and quality of electricity service; and ii.) to promote economic efficiency and cost effectiveness in the generation, transmission, distribution, sale and demand management of electricity, and to facilitate the maintenance of a financially viable electricity industry.[3] At the time, Ontario's electric distributors were comprised almost entirely of geographically concentrated, municipal organizations, without typical rates of return embedded in rates.

To effectively preside over the large number of diverse municipal electric utilities ("MEUs") in the Province, and to accomplish the primary objectives of protecting customer interests and promoting economic efficiency, the Board adopted a performance-based ratemaking framework. Through this rate structure, the OEB could effectively oversee the large number of MEUs with the installation of an expedient mechanism for adjusting rates, while at the same time incentivizing utilities to continue their efforts to control costs, increase efficiency, and maintain service quality; and to minimize the administrative burden and cost of regulation. As a component of this performance-based regulation ("PBR"), the Board required a methodology for determining the allowed return on common equity and the allowed overall rate of return on rate base for the regulated MEUs. The methodology adopted for setting electric distribution returns was aligned with existing ROE mechanisms employed for Ontario's gas distributors, where a formulaic risk premium approach had been adopted in favor of the case-by-case rate setting methodology employed previously in Canada and prevalent in the U.S.

Privatization and consolidation of the MEUs had become a common theme among Ontario's policymakers in addressing the efficiencies they sought in the newly restructured electricity distribution industry. Logically, consolidation of the MEUs would further progress towards

[3] *Ontario Energy Board Act*, S.O. 1998, Chapter 15, Schedule B, Part I, section 1.

achieving a privatized, financially viable electricity industry. However, successful consolidation essentially required municipally-owned utilities to be placed on equal footing with investor-owned utilities to promote balanced competition between them for investment capital. It is within this framework that we have evaluated the differences in ROE between the Ontario electric distribution companies and those of the U.S., as well as other Canadian jurisdictions.

Prior to the implementation of the formulaic ROE approach, adopted by the OEB for its natural gas utilities in 1997, ROEs in Canada and the U.S. were in virtual parity[4]. Since the adoption of this formulaic approach for Ontario gas utilities, in the "Draft Guidelines on a Formula-Based Return on Common Equity", a growing gap between the returns of U.S. gas utilities and Canadian gas utilities has developed. That divergence extends to the 80 plus electricity distribution utilities currently operating in Ontario, who have since been regulated under the same formulaic approach. Concentric's analysis reveals that there is an approximate 150 basis point difference between allowed electric distribution utility ROEs in the U.S. versus those of Ontario. Had the OEB set allowed returns in accordance with the formula for 2007, rather than freezing ROE at 9.00 percent for 2006 and 2007, the actual difference would have been approximately 215 basis points. Indeed the OEB recently issued its cost of capital parameters for 2008, reflecting a lower ROE of 8.57 percent. It is this divergence between ROEs in Canada and specifically Ontario, versus the U.S., that serves as the focus and subject matter of this report.

To begin, we examine the differences between allowed ROEs in Ontario from those found in the U.S. and other Canadian jurisdictions. This report looks to the companies themselves, as well as the jurisdictions and countries in which they operate, to determine if there are fundamental differences between Ontario and U.S. electric utilities that would explain ROE differences. In our analyses, we have identified several risk factors that generally play a significant role in developing authorized returns for electric utilities. While the specific characteristics of individual electric utilities and their respective regulatory environments can lead to variations in allowed returns, through our comparison of these common risk features, we conclude that U.S. and Ontario electric utilities share similar business risk profiles and, accordingly, do not warrant the observed difference in authorized equity returns. We do acknowledge, however, that the differing ownership structures and the

[4] Concentric Energy Advisors, Inc., *A Comparative Analysis of Return on Equity of Natural Gas Utilities*, June 2007, at 13.

different ROE setting processes between the U.S. and Ontario, which we have set aside for purposes of our business risk analysis, are likely the primary contributors to the divergence in returns.

We have also reviewed the tax rates on dividends between the U.S. and Canadian companies. Our determination is that although tax differences do exist that could impact required returns (depending on the tax status of the investor), those differences are not quantifiable without a determination of the tax status of utility investors, and are unlikely to cause significant differences in required returns. Taken as a whole, U.S. electric utilities are not demonstrably more or less risky than Canadian electric utilities, nor would their taxation policies explain the current divergence in returns. Additionally, acknowledging the previous parity between U.S. and Canadian utility authorized ROEs, there has been no obvious shift in fundamental factors to explain the recent and growing divergence in ROEs, other than the implementation of the ROE formula itself.

As a result of the interplay between Canadian and U.S. financial markets, Canadian utilities compete for capital essentially on the same basis as utilities in the U.S. In the current market environment, no fundamental differences were identified that would indicate a significant difference in investor required returns between the two markets. Capital flows efficiently between these two markets, and over the long-term, equity investors earn nearly identical returns. On the issue of subsidiaries competing for capital we find that subsidiaries of larger holding companies ultimately compete for capital much like stand alone companies, as they must compete among their affiliates for corporate investment. Over time, the equity returns must ultimately reward the parent or investor at the same rate as a similar investment of comparable risk. This "comparability standard" is a guiding principle in both Canadian and U.S. utility regulation.

Ultimately, Concentric finds that the gap between allowed ROEs for Ontario's utilities and their U.S. peers can be attributed to the following factors: i.) the use of an ROE formula tied exclusively to government bonds over a period of time when bond rates have moved steadily downward (although the same result, with a gap in the opposite direction, might be expected with steady increases in bond rates); ii.) municipal ownership of Ontario's utilities, where competition for capital is not subjected to a true private capital market test; iii.) the OEB has widely been recognized

as a supportive regulator and there is little concern on the part of investors that the OEB would allow its electric utilities to fall into financial distress; and iv.) while cross border capital flows are efficient, municipal utility owners in Ontario are not likely to pursue alternative investments.

ROE discrepancies between the U.S. and Ontario utilities may be sustained for some time, absent a reversal of the current trend in interest rates or a change in the government ownership of the utilities. Low rates of return have the consequence of negatively impacting reinvestment, with fewer equity-return dollars to plow back into the business. Ontario utilities are embarking on a period of substantial infrastructure investment and will be put to a test of their ability to access the incremental capital needed to fund investment in aging infrastructure and energy efficiency at the relatively low generic rates of return prescribed by the Ontario ROE formula. As long as government-owned utilities are willing to sustain operations at relatively low ROEs, the ultimate trade-off is the wealth transfer between electric ratepayers and taxpayers. However, privately held utilities will be put at a competitive disadvantage in raising capital if these rates of return do not reward investors at levels equal to those of comparable North American utilities.

It is important to note that this report does not attempt to estimate the "correct" ROE for the Ontario electric distributors, nor does it discuss which ROE calculation methodology or rate-setting approach is most appropriate for the Province. In this report we seek to quantify the differences in existing allowed ROEs between jurisdictions and countries, and provide a frank discussion of the factors that most likely explain the disparity.

The information provided in this report is based on independent research and analysis of publicly available information, but is also guided by Concentric's prior research and interviews with market participants and regulatory agencies.

REMAINDER OF THE REPORT

The remainder of this report is made up of six sections. Section III provides background on the theory and practice of ROE, including the applicable precedent and approaches used by various regulatory boards in Canada and the U.S. Section IV provides a comparison of ROE awards across

different jurisdictions within Canada and the U.S. Section V analyzes the inter-jurisdictional differences in ROE awards, as well as provides an assessment of risk factors for the companies in the sample population, and a discussion of what significant differences exist between electric distributors in Ontario and those in other jurisdictions. Section VI presents a discussion of competition for capital in Canada versus the U.S., and in Section VII we provide an assessment of stand-alone versus subsidiary companies. Section VIII contains our overall conclusions.

III. ROE BACKGROUND

The setting of ROE, as a component of the rate of return on rate base for a regulated utility, meets three essential objectives: (1) to provide a return consistent with other businesses having similar or comparable risks; (2) to support credit quality and access to capital; and (3) to balance investor and consumer interests. A return that is adequate to attract equity capital on reasonable terms enables the utility to provide safe, reliable service at just and reasonable rates while maintaining the utility's financial integrity. The ROE should be commensurate with the risks incurred by investors and comparable to the returns available elsewhere in the market for investments of equivalent risk. If a utility is allowed to earn its fair and reasonable ROE, both ratepayers and investors should benefit.

ROE PRECEDENTS IN CANADA AND THE U.S.

The Supreme Court of Canada set out the fundamental requirements that a fair and reasonable return on capital should be met in its decision *re.: Northwestern Utilities vs. City of Edmonton,* 1929. As stated by Mr. Justice Lamont in that case:

> The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise…. [5]

The NEB has further summarized its view that the fair return standard can be met by fulfilling 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).[6]

[5] Northwestern Utilities v. City of Edmonton [1929] S.C.R. 186 (NUL 1929).
[6] Reasons for Decision, TransCanada PipeLines Limited, RH-2-2004, Phase II, April 2005, Cost of Capital.

For a more detailed discussion of significant ROE-related decisions in Canada and the U.S., please see Appendix A to this report.

In Canada, the NEB regulates international and interprovincial aspects of the oil, gas and electric utility industries. The NEB regulates pipeline tolls and tariffs under its jurisdiction and authorizes the construction and operation of international power lines and designated interprovincial lines under federal jurisdiction. Most electric power lines and facilities fall within provincial jurisdiction. Regulatory boards at the provincial level, such as the OEB, regulate rates for Canadian electric and gas distributors.[7]

Similarly, in the U.S., the Federal Energy Regulatory Commission ("FERC") regulates the interstate transmission of natural gas, oil, and electricity. FERC also regulates natural gas and hydropower projects.[8] State public utility commissions are responsible, for the most part, for the regulation of U.S. electric and gas distribution companies.

Over the past decade, the formulas used to determine ROE awards by the NEB and the Canadian provinces (including Ontario) have largely utilized the "risk premium" method. The basic mechanism involves summing the forecasted yield for the long Government of Canada bond (30-year) for the test year with an equity risk premium. Subsequent adjustments to the ROE are based upon the application of an adjustment factor (*e.g.*, 75 percent) to the year-over-year change in the long-term forecasted bond yield. This adjustment is added to/subtracted from the previous year's rate of return, to obtain the current year's ROE. The long-term bond yield forecast is determined by taking the average of the three-month and twelve-month 10-year Canadian Bond forecasts plus a historical yield spread between the ten-year and thirty-year bonds.

By contrast, ROEs in the U.S. are typically determined through rate proceedings in which a variety of analytical techniques, including the Discounted Cash Flow ("DCF") Model (single and multi-stage), the Capital Asset Pricing Model ("CAPM"), risk premium, and comparable earnings methods

7 http://www.neb.gc.ca.
8 http://www.ferc.gov.

are presented. The state utility commission or FERC (for cases involving interstate commerce) ultimately decide the ROE for the subject utility based upon the evidence in the proceeding.

ONTARIO RATEMAKING PRECEDENT FOR ELECTRIC DISTRIBUTORS

The history of capital cost methods for Ontario's electric distributors is relatively recent. Up until 1999, electric distributors were principally municipal utilities under the regulation of Ontario Hydro. Not until 1998 and the passage of the *Energy Competition Act,* did the OEB have responsibility for regulating the 270 plus municipal electric utilities that existed at that time. Based on methodological recommendations forwarded by Dr. William Cannon, alignment with existing methods for gas distributors, and the objective of implementing a performance based ratemaking framework, the Board established a formulaic risk premium approach to ROE and created a hypothetical "deemed" capital structure that varied by size of the utility.[9] These ratemaking principles were adopted in the Electric Distribution Rate Handbook promulgated in the Board's Decision with Reasons in RP-1999-0034 on January 18, 2000. The principal features of this new era for Ontario's electric utilities were as follows:

- A uniform ROE of 9.88 percent for all electric utilities, based on a Canadian long-term bond rate of 5.95 – 6.00 percent and an equity risk premium of 375 – 380 basis points.
- Applicable to rate base for "wires only" activities.
- A deemed capital structure was established, varied by company size, as a proxy for differing business risk:

Table 1: Deemed Capital Structure by Risk Class

RISK CLASS	RATE BASE	COMMON EQUITY RATIO
Low	> $1.0 billion	35%
Medium- Low	$250 - $1.0 billion	40%
Medium-High	$100 - $250 million	45%
High	< $100 million	50%

Source: "Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors", December 2006

- A PBR mechanism was established with the Board's objectives of: reducing regulatory burden, creating incentives for cost reduction and productivity gains, establishing minimum service quality and reliability standards, and meeting the broader Government

[9] See: A Discussion Paper on the Determination of Return on Equity and Return on Rate Base for Electric Distribution Utilities in Ontario, Dr. William T. Cannon, December, 1998; and Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electric Distributors, Ontario Energy Board, December 20, 2006.

goals of "ensur[ing] efficiencies are achieved in the monopoly parts of the industry and results in benefits to consumers", and "tariffs that are as low as possible on a sustainable basis".10 The principal features of the overall rate plan were:

- Electric utilities should be "put on a commercial footing consistent with other commercial businesses operating in Ontario", including a "fair rate of return on the total capital employed".
- Unbundling of distribution and power costs.
- Establishing "market-based returns" for the newly corporatized utilities, based on the ROEs and deemed capital structures above, including an allowance for "payments in lieu of taxes, or proxy taxes".
- Inclusion of "historic contributed capital" into rate base at the same rate of return as other sources of capital, but exclusion of future "contributed capital" from rate base after January 1, 2000.
- Establishment of a "price cap" mechanism, with a three-year term with annual adjustments based on an input price index ("IPI"), a productivity factor ("PF"), and adjustment for extraordinary items ("Z factor").
- An earnings sharing provision where utility "shareholders" (i.e., the municipality) would share 50 percent of any cost savings in excess of the productivity expectation, set at 1.5 percent for the initial plan.
- Reporting of nine service quality measures with a requirement to remain, at a minimum, within historic performance levels.

Contemporaneously with the restructuring of Ontario's electric utility sector, the Independent Electricity System Operator ("IESO") was created as a not-for-profit corporate entity in 1998 by the Electricity Act of Ontario. It is governed by an independent board whose Chair and Directors are appointed by the Government of Ontario. Its fees and licenses to operate are set by the Ontario Energy Board, and it operates independently of all other participants in the electricity market. The functions managed by IESO include: connecting all market participants, establishing the wholesale

[10] Board's Decision with Reasons in RP-1999-0034 on January 18, 2000, pp 11-12.

market price of electricity based on a competitive market process, monitoring the system and identifying reliability needs, and enforcing reliability standards in the Province.[11]

Following the implementation of industry restructuring and the First Generation Incentive Regulation Mechanism ("IRM"), the government introduced the Electricity Pricing, Conservation and Supply ("EPCS") Act of 2002. In response to tightening power markets and rising electric prices, this legislation capped the price of electricity at 4.3 cents per kilowatt-hour for residential, small-business and other designated low-volume consumers, effective May 1, 2002 to May 1, 2006. Under the Act, all transmission and distribution rates were frozen at existing levels until at least May 1, 2006, which displaced any further reviews of cost of capital during that period.[12]

In 2006, the Board reaffirmed its overall approach to the setting of ROE and updated its formula-based ROE determination to 9.00 percent. The Board further simplified its approach to capital structure by adopting a 60 percent debt/40 percent equity ratio for all electric distributors.

11 http://www.theimo.com
12 http://www.oeb.gov.on.ca/html/en/abouttheoeb/history.htm

IV. COMPARISON OF PREVAILING ROE AWARDS

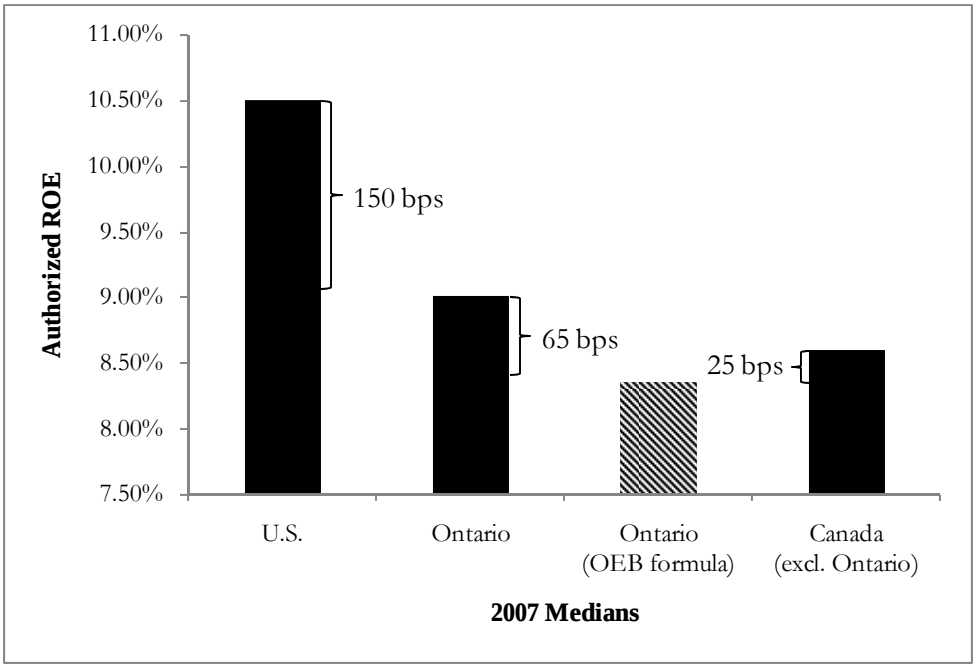
The focus of Concentric's analysis is to first identify where differences exist between awarded ROEs in Ontario and other jurisdictions, quantify those differences, and then evaluate the primary drivers of those differentials. Concentric's analysis begins with a snapshot of current ROE awards across Canada and the U.S. We have gathered fundamental financial data on 8 Ontario electric distribution companies, including the CLD, Hydro One, and FortisOntario for the 2005-2007 time period.[13] In addition, we gathered comparable data on 13 Canadian electric utilities in provinces other than Ontario[14] and on 55 U.S. electric distribution companies for the same time period.[15] From this research, we have created a database of the key attributes commonly considered to be factors in determining ROE. In the following analysis, we have included data for the focus group of 8 Ontario utilities mentioned above, noting that the vast majority (if not all) of Ontario electric utilities receive the same regulatory rate treatment. As Chart 1 indicates, the median allowed ROE for electric utilities in the U.S. in 2007 was 10.50 percent and the median allowed ROE in Canadian jurisdictions, other than Ontario, was 8.60 percent. The prevailing ROE for the Ontario electric utilities is currently fixed at 9.00 percent. However, applying the OEB ROE formula for 2007 results in a 65 basis point drop in ROE to 8.35 percent from its currently authorized fixed level of 9.00 percent, as indicated by the shaded bar on Chart 1, below.

[13] In addition, we gathered 2005–2006 data for the 86 electric distribution utilities in Ontario from the "Yearbook of Electricity Distributors", published annually by the OEB.

[14] The Canadian companies reviewed from provinces other than Ontario were: ATCO Electric, BC Hydro and Power Authority, Edmonton Power (EPCOR), Enmax Corporation, FortisAlberta, Hydro-Quebec, Manitoba Hydro, Maritime Electric, Newfoundland Power, New Brunswick Power, Nova Scotia Power, SaskPower, and West Kootenay Power Ltd. (FortisBC).

[15] See Appendix B for a listing of the 55 U.S. electric distribution companies covered by this report.

Chart 1: 2007 Allowed Median ROEs in U.S. and Canada



Sources: SNL Financial, Company Quarterly and Annual Reports, and Utility Commission Orders

As Chart 1 indicates, on the average, Ontario electric distributor ROEs, fixed at 9.00 percent for 2007, were 150 basis points below the median U.S. authorized return. Had Ontario's 2007 ROEs been determined through application of the OEB formula, Ontario ROEs would have been 215 basis points below their U.S. counterparts and 25 basis points below those of the other Canadian jurisdictions. However, as rates are frozen at 9.00 percent for 2007, Ontario utilities currently enjoy a slight premium of 40 basis points above other Canadian utility authorized returns. This premium will be eliminated as the freeze on ROEs expires in 2007, and Ontario electric utilities will be required to file rate applications to rebase their ROEs in accordance with the ROE formula.

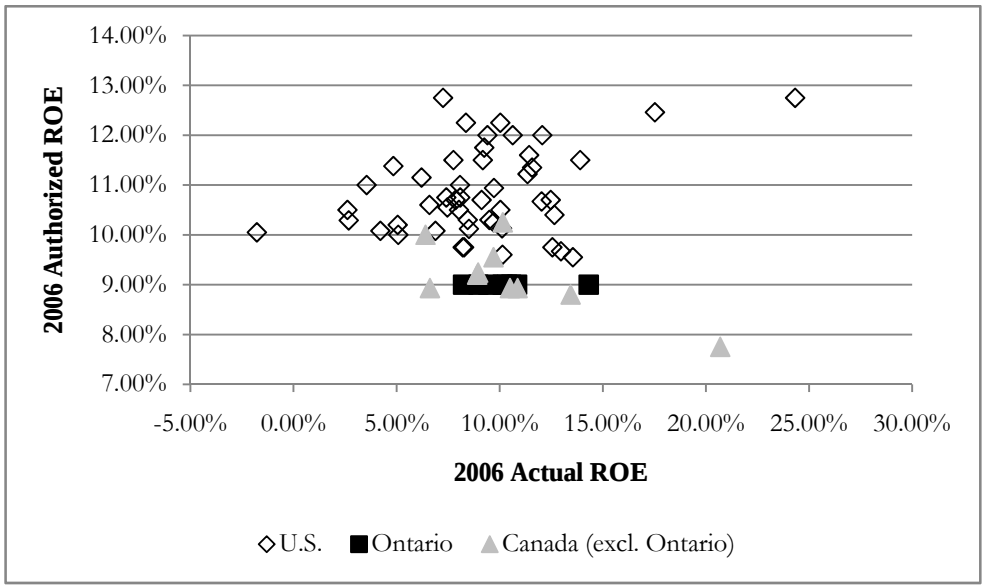
Table 2: Authorized Equity Returns for Canadian and U.S. Electric Distribution Utilities

JURISDICTION	2007 AUTHORIZED ROE	
	Mean	Median
U.S.	10.66%	10.50%
Ontario	9.00%	9.00%
Ontario (OEB Formula)	8.35%	8.35%
Canada (excl. Ontario)	8.85%	8.60%

Sources: SNL Financial, Company Quarterly and Annual Reports, and Utility Commission Orders

The following diagram compares authorized returns for 2006 to actual earned returns.

Chart 2: Authorized and Earned Returns in Canada and the U.S.[16]



Sources: SNL Financial, Company Quarterly and Annual Reports, and Utility Commission Orders

As Chart 2 shows, U.S. authorized returns are generally clustered in the 10.00 to 12.00 percent range, while the actual earned returns are dispersed over the 5.00 to 15.00 percent range. Ontario earned returns are very close to those authorized. The authorized returns from other Canadian provinces were slightly lower than their Ontario counterparts, while the actual earned returns also appeared to be clustered around the authorized returns though slightly more dispersed than the Ontario authorized returns with a tendency towards higher actual earned returns versus the authorized returns.

As can be seen in Table 3, the large electric distribution utilities in Ontario have authorized 2006 and 2007 ROEs of 9.00 percent, with a capital structure generally in the range of 60 percent debt and 40 percent equity.

[16] Earned ROE is calculated as consolidated net income / shareholder's equity and does not necessarily represent income generated solely from the distribution of electricity; Metropolitan Edison Company is excluded from presentation as an outlier (Earned ROE = -23.67%).

Table 3: Most Recent ROE Awards for Large Ontario Electric Distribution Utilities

UTILITY	2007 AUTHORIZED		2006 AUTHORIZED	
	ROE	EQUITY RATIO	ROE	EQUITY RATIO
Enersource Hydro	9.00%	40.00%	9.00%	40.00%
Horizon Utilities	9.00%	40.00%	9.00%	40.00%
Hydro One Networks	9.00%	40.00%	9.00%	40.00%
HydroOttawa	9.00%	40.00%	9.00%	40.00%
PowerStream	9.00%	40.00%	9.00%	40.00%
Toronto Hydro	9.00%	35.00%	9.00%	35.00%
Veridian Connections	9.00%	45.00%	9.00%	45.00%

Sources: 2007 and 2008 Electricity Distribution Rate Applications, "Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors," Company Quarterly and Annual Reports

For the remaining provinces in Canada, as indicated in Table 4, the average ROE was 8.85 percent for 2007 and 9.14 percent for 2006. In the U.S., the overall average allowed ROE was 10.66 percent for 2007 and 10.86 percent for 2006. As Table 4 reflects, of the three Canadian jurisdictions that employ rate proceedings to set ROE, two of the three yielded higher ROEs than those Canadian jurisdictions that utilize the automatic ROE adjustment mechanism.

Table 4: 2006 ROE Awards for Canadian and U.S. Jurisdictions

JURISDICTION	UTILITIES	2007 AUTHORIZED		2006 AUTHORIZED		ROE PROCESS
		ROE	EQUITY RATIO	ROE	EQUITY RATIO	
Canada						
Alberta	4	8.76%	38.00%	8.93%	38.00%	Automatic
British Columbia	2	8.57% [1]	40.00%	9.00% [1]	40.00%	Automatic
Saskatchewan	1	9.00%	40.00%	10.00%	40.00%	Automatic
Manitoba	1	- [2]	25.00%	- [2]	25.00%	Rate Case
Newfoundland and Labrador	1	8.60%	45.00%	9.24%	45.00%	Automatic
New Brunswick	1	- [3]	- [3]	- [3]	- [3]	Rate Case
Nova Scotia	1	9.55%	37.50%	9.55%	37.50%	Rate Case
Ontario	8	9.00%	41.25%	9.00%	41.25%	Automatic
Prince Edward Island	1	10.25%	40.00%	10.25%	45.00%	Rate Case
Quebec	1	7.79%	35.00%	7.75%	35.00%	Automatic
Canada - excl. Ontario (average)	13	8.85%	37.68%	9.14%	38.14%	N/A
United States (average)	55	10.66%	46.04%	10.86%	46.04%	Rate Case

[1] ROE for BC Hydro is post-tax return on equity for low-risk benchmark utility

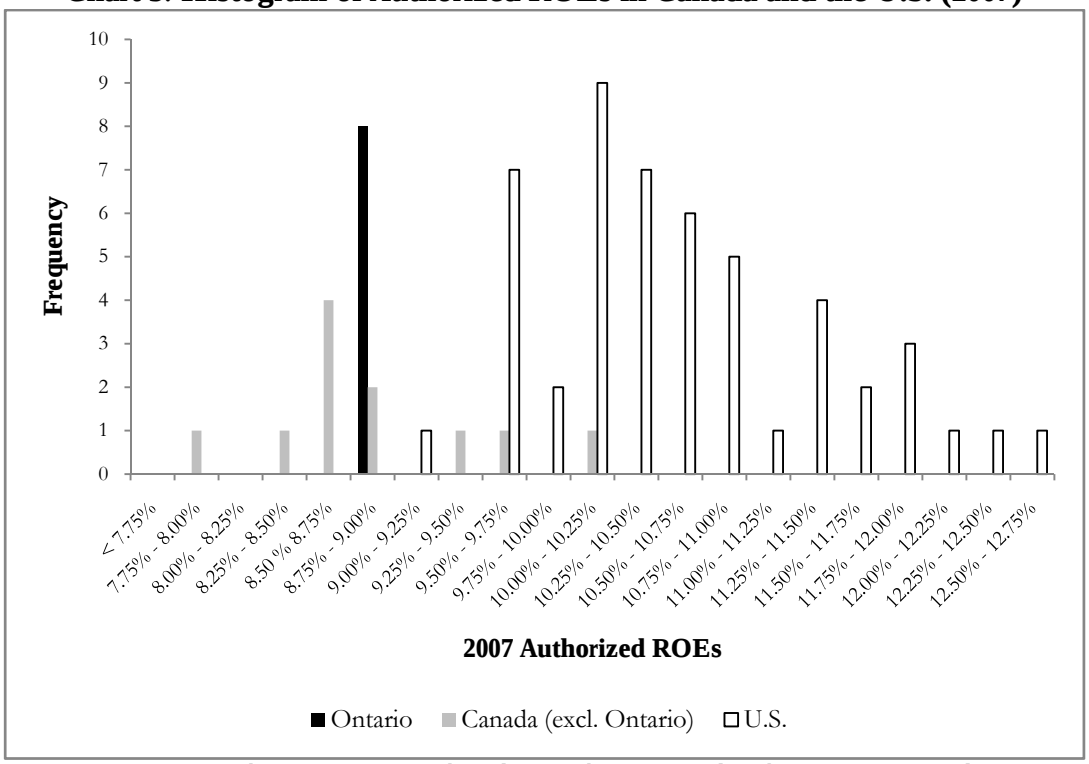
[2] Public Utilities Board of Manitoba targets a specific interest coverage ratio and capital structure

[3] New Brunswick Board of Commissioners of Public Utilities targets a specific interest coverage ratio

Sources: 2007 and 2008 Electricity Distribution Rate Applications, company quarterly and annual reports, utility commission orders, SNL Financial

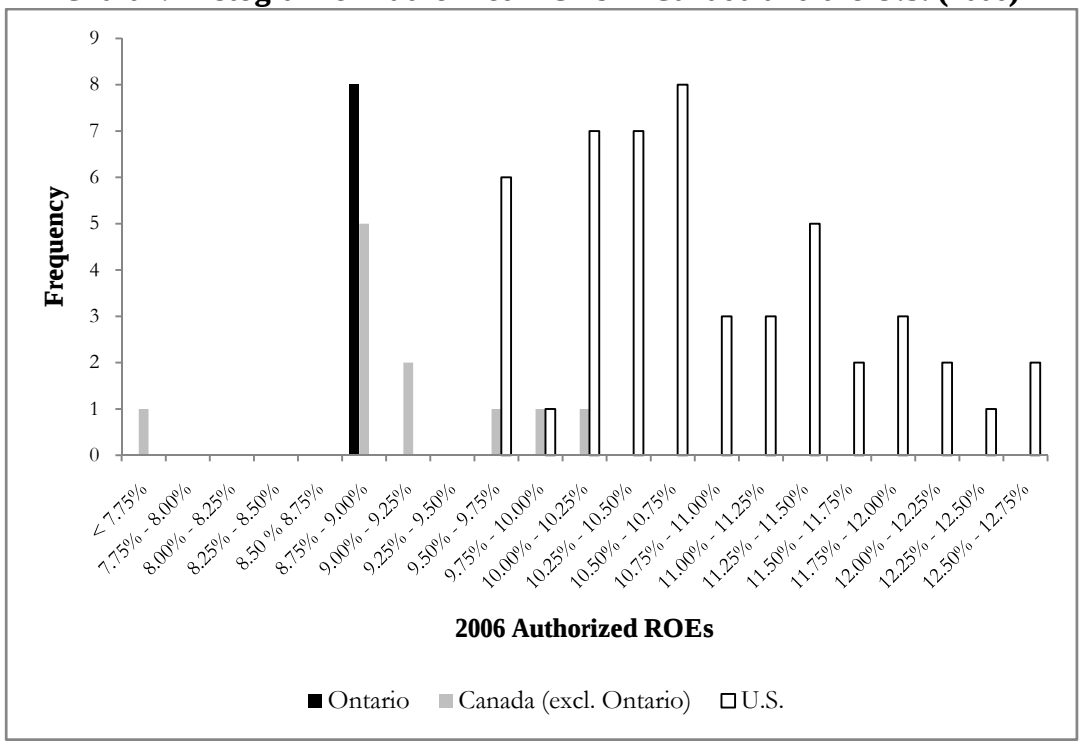
Charts 3 and 4 represent histograms of allowed ROEs in Ontario, the Canadian Provinces other than Ontario and the U.S. for 2006 and 2007. The Ontario electric utilities' ROEs during both periods were fixed at 9.00 percent. For the remaining provinces in Canada, the 2006 ROEs range from 7.75 percent for Hydro Quebec to 10.25 percent for Fortis' Maritime Electric on Prince Edward Island, a spread of 250 basis points. Similarly, in 2007, the other Canadian ROEs ranged from 7.79 percent for Hydro Quebec to 10.25 percent for Fortis' Maritime Electric on Prince Edward Island, a spread of 246 basis points. In the U.S., prevailing ROEs in 2006 ranged from 9.55 percent for New York State Electric & Gas Corp., to 12.75 percent for Bangor Hydro-Electric Company (a 320 basis point spread). The U.S. prevailing ROEs for 2007 ranged from 9.10 percent for Orange and Rockland Utilities, Inc., to 12.75 percent for PECO Energy Company.

Chart 3: Histogram of Authorized ROEs in Canada and the U.S. (2007)



Sources: SNL Financial, Company Quarterly and Annual Reports, and Utility Commission Orders

Chart 4: Histogram of Authorized ROEs in Canada and the U.S. (2006)



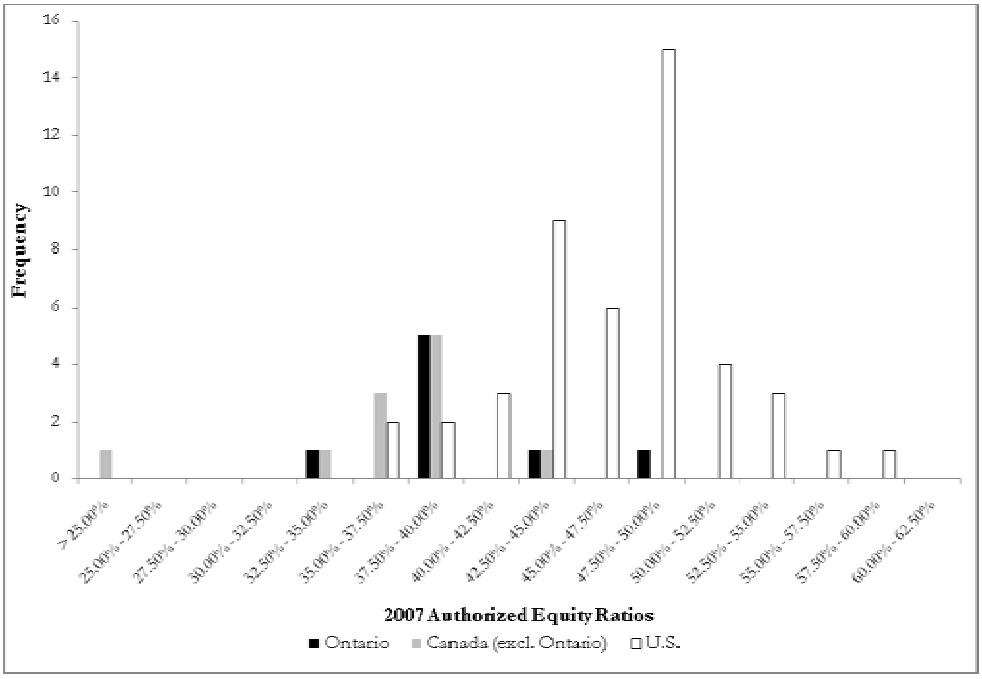
Sources: SNL Financial, Company Quarterly and Annual Reports, and Utility Commission Orders

As can be seen in Charts 3 and 4, there is very little overlap between the ranges of Canadian and U.S. ROEs, with Canadian ROEs being fairly evenly distributed between 7.75 percent and 10.25 percent, and U.S. ROEs clustering between 10.50 percent and 10.75 percent. There is no overlap between the U.S. ROEs and the Ontario ROEs.

Concentric also gathered data related to the allowed equity percentages for the companies analyzed. Generally, the OEB required a capital structure of 40 percent equity and 60 percent debt for 2006 and 2007, with Toronto Hydro Corporation, Fortis Ontario, and Veridian Connections being the exceptions. Toronto Hydro's equity ratio was 35 percent for both years, and FortisOntario's equity ratio was 50 percent for 2006 and 2007. Veridian Connections equity ratio was 45 percent in both years. The allowed equity percentages in 2006 and 2007 for the other Canadian provinces ranged from a low of 25 percent for Manitoba Hydro for both years to a high of 45 percent for Maritime Electric for 2006 (only) and the same equity ratio for Newfoundland Power for both years. In the U.S., actual capital structures are generally used for ratemaking purposes versus the deemed capital structures prevalent in Canada, so it follows that U.S. equity ratios vary considerably more than in Canada. In 2006, U.S. companies' equity ratios ranged from 26.72 percent for Bangor Hydro-Electric Company to 61.75 percent for Wisconsin Power and Light Company, and in 2007 ranged from 36.2 percent for PECO Energy Company and 60.0[17] percent for Public Service Company of Colorado. Charts 5 and 6 show the distribution of allowed equity percentages in Canada and the U.S.

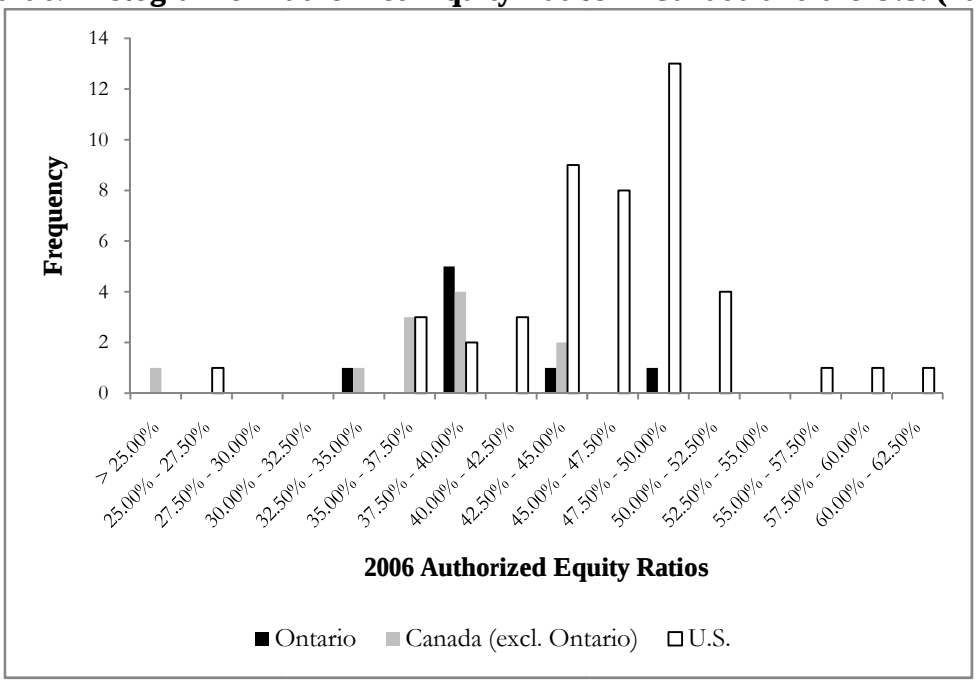
[17] It should be noted that Public Service Company of Colorado's high equity ratio compensates for the debt imputation of purchase power agreements, applied by the ratings agencies in determining their credit grade.

Chart 5: Histogram of Authorized Equity Percentages in Canada and the U.S. (2007)



Sources: SNL Financial, Company Quarterly and Annual Reports, Utility Commission Orders, and 2007 and 2008 electricity distribution rate applications

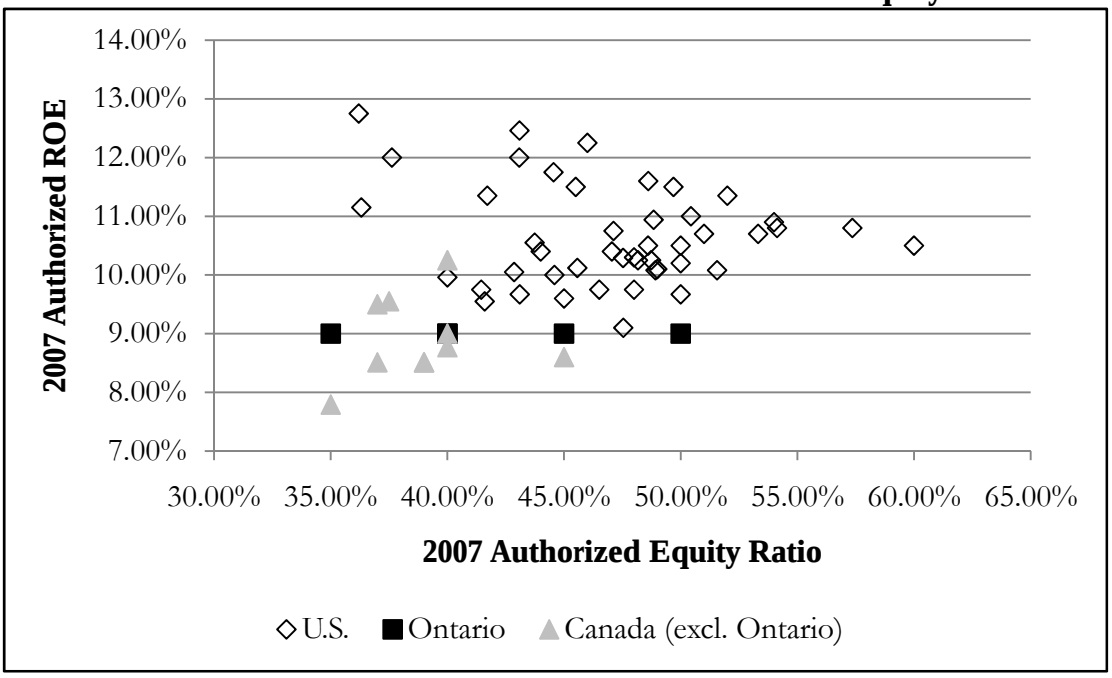
Chart 6: Histogram of Authorized Equity Ratios in Canada and the U.S. (2006)



Sources: SNL Financial, Company Quarterly and Annual Reports, Utility Commission Orders, and 2007 and 2008 electricity distribution rate applications.

While there is some overlap between the allowed equity ratios in Canada and the U.S., the Canadian equity ratios are clustered mainly between 32.50 percent and 45.00 percent, while the U.S. equity ratios are disbursed throughout the range, with the most instances between 42.50 percent and 50.00 percent. Chart 7, below, presents a scatter plot of ROEs and equity percentages in Canada and the U.S.

Chart 7: Scatter Plot of Authorized ROEs vs. Authorized Equity Ratio



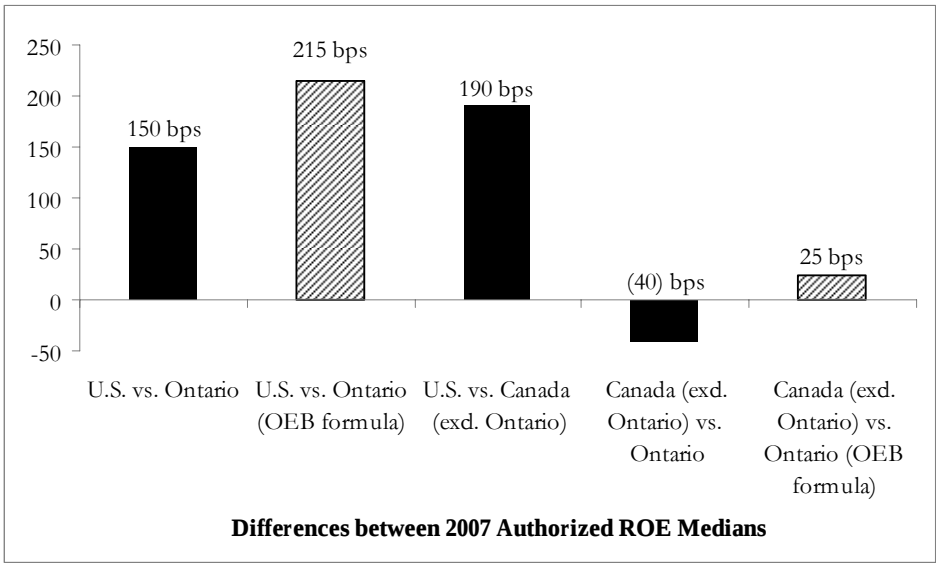
Sources: SNL Financial, Company Quarterly and Annual Reports, Utility Commission Orders, and 2007 and 2008 electricity distribution rate applications.

Chart 7 indicates that on average Canadian electric utilities receive lower authorized returns and authorized equity ratios than their U.S. counterparts. The Ontario utilities are clustered amid their Canadian counterparts. U.S. electric utilities are far more dispersed and exhibit little overlap with Ontario, or the other Canadian provinces.

V. ANALYSIS OF DIFFERENCES IN ROE AWARDS

In this section of our report, we analyze the differences between awarded ROEs in Ontario, the U.S. and the other Canadian provinces. To recap, as discussed in the previous section, the median differences between 2007 ROEs in Ontario, other provinces in Canada, and the U.S. are illustrated below:

Chart 8: Differences in 2007 ROE Medians between Ontario, U.S., and Other Canadian Provinces (Excluding Ontario)



To begin understanding the above differences, it may be beneficial to discuss the various ROE methodologies employed by the jurisdictions represented in this analysis.

DISCUSSION OF ROE METHODOLOGIES

Methodological approaches differ in determining ROE, but the primary drivers of investor returns (interest rates and risk) are represented in each alternative methodology. While the scope of this report does not include an analysis of the merits or appropriateness of each methodology, it is useful to understand the differing influences of alternative methodologies. Ideally, alternative methodologies would yield comparable results. However, some methods are more influenced by certain economic and business specific factors than others. For example, the DCF approach is the predominant approach for setting ROEs in the U.S. Under this approach, the ROE is determined

by adding the expected dividend yield to the long-term projected growth in dividends. That formula is the functional equivalent of the rate of return on equity, which when used to discount the expected cash flows associated with stock ownership (*i.e.*, the receipt of dividends in perpetuity), would theoretically yield the current stock price. Under the DCF approach, therefore, the ROE result is a function of annualized dividends, current stock prices, and anticipated long-term growth.

The CAPM is a risk premium approach that specifies the required ROE for a given security as a function of the risk free rate of return, plus a risk premium that represents the non-diversifiable (sometimes referred to as "systematic") risk of the security. Non-diversifiable risk represents the variability in returns of a given security that cannot be differentiated from the market as a whole, due to the combined macroeconomic forces in the economy. The fundamental notion underlying the CAPM is that risk-averse investors will require higher returns for assuming additional risk. This non-diversifiable risk is measured in terms of a company's Beta, or the covariance of the subject company's return relative to the broader market. Beta, therefore, is a measure of the extent to which the Company's returns are influenced by the same macroeconomic risks as the broader market, and thus cannot be reduced by diversification. The CAPM formula is given by the following equation:

$$k_e = r_f + \beta (r_m - r_f)$$

The risk premium ($r_m - r_f$) portion of the CAPM is generally determined by subtracting the historical risk free rate from historical market returns.[18] The resulting ROE derived by the CAPM approach is driven by the current level of interest rates and the historical relationship between equity returns and risk free investments for the broader market.

A modified CAPM (or an alternative equity risk premium approach) measures the relationship between interest rates and the equity risk premium for a given industry sector. Generally, for regulated utilities, this risk premium is calculated as the difference between authorized returns and the prevailing corporate or risk free bond yield. Using a corporate bond rate, the risk premium and recommended ROE would be given by the following formulas:

[18] It should be noted that the determination of the market equity risk premium is a hotly contested subject among experts and academics. There are several competing theories as to what the appropriate forward looking equity risk premium should be.

$RP = a + (X_{RP} \times b_c)$, and

$k_e = b_c + RP$

Where:

RP = the risk premium

a = the constant term in determining the risk premium, derived using an ordinary least squares regression model

X_{RP} = the slope coefficient for the change in risk premium for a given change in the bond yield (this is generally negative indicating an inverse relationship), and

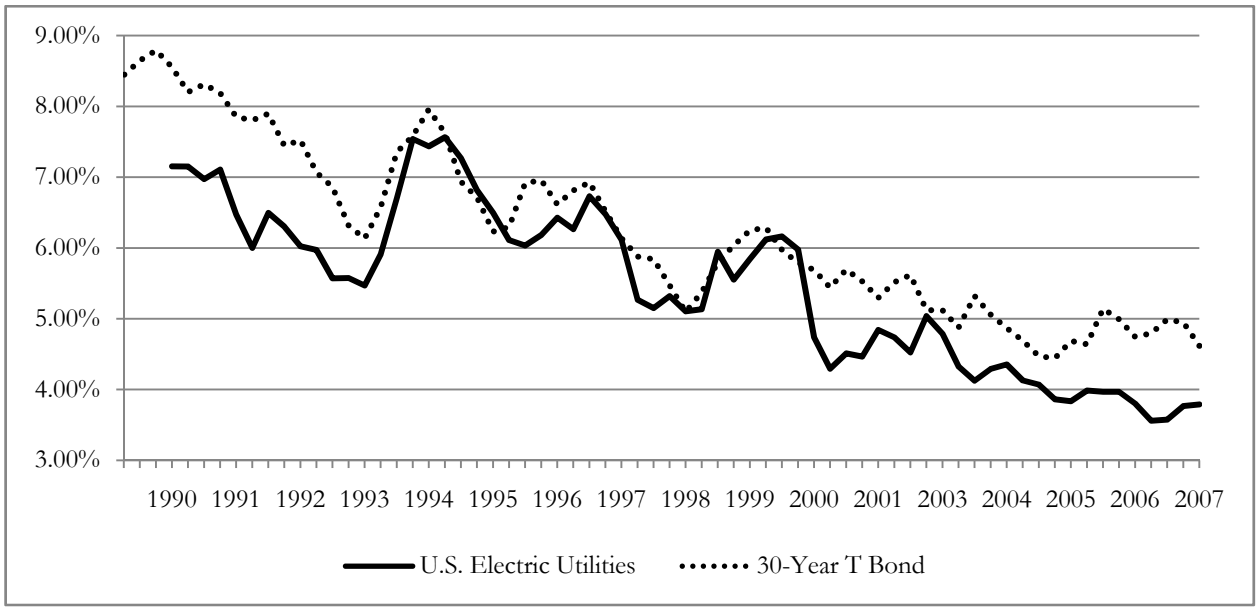
b_c = the corporate bond yield.

As this formula indicates, the risk premium is a function of interest rates. Generally, as can be observed in U.S. and Ontario data, the risk premium decreases as interest rates increase. The resulting impact on ROE takes into account both the change in interest rates and the inverse effect on the risk premium. With the typical estimation of this model, as interest rates change, the ROE changes by only a fraction of the change.

To understand why ROEs resulting from various methodologies, *i.e.* the DCF method, a risk premium method (the mechanism employed by the OEB), or CAPM method should yield comparable results, it is important to understand the relationship between utility dividend yields and bond yields.

There is significant academic research that establishes that utility stock prices are inversely related to the level of interest rates, and likewise that dividend yields and the level of interest rates are positively correlated. Chart 9 depicts the strong positive relationship between average U.S. Treasury yields and the average annual dividend yield for a representative group of U.S. electric distribution utilities.

Chart 9: Comparison of U.S. Electric Utility Dividend Yields and U.S. 30-Year Bond Yields for the Period 1990 – 2007[19]



Source: Bloomberg

This strong positive relationship is attributed both to the capital intensive nature of a utility, such that a decrease in debt capital costs will result in higher earnings and higher stock prices (lowering dividend yields), and to the fact that utilities' equity returns compete with debt yields in capital markets, as utilities are generally considered among investors to be relatively stable, lower risk investments.

There is also a measurable relationship between the utility equity risk premium and the prevailing bond yield. As interest rates rise, utility stock prices tend to fall and, accordingly, dividend yields rise, as depicted in Chart 9. Further, when interest rates rise, and correspondingly dividend yields rise, investor equity return requirements also rise, but to a lesser degree. As a result, the risk premium shrinks as interest rates rise, and expands as interest rates decline, indicating that the relationship between bond yields and equity returns is not one to one.

[19] Dividends calculated by dividing trailing 12-month dividends per share, as disclosed on the income statement, by the period end price per share. Dividend yield is an indication of the income generated by a share of stock for 37 companies that consistently paid dividends between January 1, 1991 and December 31, 2007. Given the unusual power and capital market conditions during the 2002-2003 timeframe, Chart 9 excludes data from July 1, 2002 through June 30, 2003.

When stock prices behave in accordance with their historical behavior, the DCF methodologies and the risk premium methodologies will yield comparable results. However, stock prices and growth rates do not always move in accordance with historical norms, relative to interest rates, which create differences between historical risk premium methodologies and the DCF approach. Economic factors that impact the utility sector, but not the broader market, such as stock price inflation due to speculation of merger and acquisition activities, or conversely, a sector-specific credit contraction such as that which occurred during the Enron bankruptcy, may yield different DCF results if such factors had not been incorporated into the risk premium or CAPM approaches. In short, the DCF approach is influenced to a substantial degree by industry-specific factors that are reflected in stock prices, but are not necessarily accounted for by the level of interest rates or incorporated into the equity risk premium in a timely fashion.

REVIEW OF THE FEATURES OF THE ONTARIO ROE FORMULA

To begin, we review the components of Ontario's ROE formula and adjustment mechanism and compare its features to the U.S. and the other Canadian Provinces excluding Ontario. Below is a representation of the Ontario electric utility ROE formula:

Table 5: Most Recent ROE Awarded for Ontario Electric Utilities

	OEB ELECTRIC ROE FORMULA
Average of 3- and 12-month Consensus Forecasts Outlook for 10-year Government of Canada bond rates	4.75%
Average spread during April 2005 between 10- and 30-year Government of Canada bond yields	0.45%
Equity Risk Premium	3.80%[20]
Allowed Return on Equity for 2006-2007	9.00%

Source: "Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors, December 2006.

The OEB formula employs a risk premium methodology; that is, a formula which adds the industry risk premium to the long term government bond yield, to derive ROE. Because the risk premium is simply the difference between the authorized return and the prevailing government bond yields, by

[20] It should be noted that although this was the formula set out in the OEB Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors, dated December 20, 2006; it was determined that the 3.80 risk premium was derived from an erroneous application of the formula, and should actually have been 3.93%. *See* Kathleen C. McShane letter on behalf of Toronto Hydro, January 20, 2006.

definition, the adjustment factor of 0.75 for a given change in interest rates implies that the risk premium moves inversely to interest rates by a factor of 0.25 (1 - 0.75). The ROE moves in the same direction with interest rates, but the risk premium rises or falls in an opposite direction, muting some of the impact of a given change in interest rates. Table 5 shows the derivation of the authorized return for Ontario electric distribution utilities for 2006 and 2007. Any subsequent updates to the equity rate of return for Ontario electric distributors will be made by adding the incremental product of .75 and the relative changes in forecasted government bond yields, to the previously authorized ROE. This formula associates a high degree of correlation (0.75) between authorized electric utility equity returns and the level of interest rates.

In order to put the interest rate adjustment factor into perspective (0.75), we compare that coefficient to that of the Ontario gas utilities and the U.S. electric utilities. In Concentric's *Review of the Return on Equity of Gas Utilities in Ontario,* performed for the OEB in June 2007, a series of regressions were performed on Ontario natural gas utility data to understand the historical relationship of long-term bond yields and authorized returns for natural gas utilities in Ontario. It is important to note that the Ontario history reviewed was prior to the implementation of the ROE mechanism, so that a true historical relationship (pre-mechanism) could be analyzed. The results of that analysis indicated that the interest rate sensitivity for the Canadian authorized returns, described by the coefficient for interest rates in the Ontario model, was 0.86. (That is, for every one percentage point change in interest rates, the Ontario ROEs changed by 86 basis points). That data is reproduced below in Table 6:

Table 6: Regression Results –Authorized Returns as a Function of Bond Yields – Ontario vs. U.S. Gas Utilities

	INTERCEPT	T-STAT$_\alpha$	X	T-STAT$_X$	R^2
Authorized Return Regression Model = Intercept + (X * bond yield) = Authorized Return					
Ontario Data from 1985 – 1997	0.0546	3.1822	0.8617	4.6132	0.6593

For the current study, a similar analysis was performed on U.S. electric returns, with a dataset comprised of a cross section of allowed electric returns for 55 U.S. electric distribution companies, with data from 2005 - 2007. The 30-year U.S. treasury yield in effect for the previous six month

period, prior to the ROE issuance date, was used to explain authorized equity returns. The results of that analysis are included in Table 7, below:

Table 7: Regression Results –Authorized Returns as a Function of Bond Yields –U.S. Electric Distribution Utilities

	Intercept	t-stat$_\alpha$	X	t-stat$_x$	Adj R^2
Authorized Return Regression Model = Intercept + (X * bond yield) = Authorized Return					
55 U.S. electric distribution utilities (148 data points)	0.07701	35.263	0.550	14.829	0. 598

To summarize, the OEB's factor of 0.75 used in its automatic ROE adjustment mechanism is reasonably close to what the above analysis on Ontario data suggests was the historical relationship between Canadian Long Bonds and gas utility authorized returns. It can be inferred that a similar relationship would have been derived for electric utility authorized returns. Specifically, the above analysis suggests these variables are historically correlated by a factor of 0.86 in contrast to the 0.75 used in the OEB adjustment formula. This result differs markedly from the more recent cross-sectional U.S. electric utility data, which suggests a coefficient between authorized returns and interest rates of 0.550. The reason for the difference between the Ontario coefficient of 0.86, implied by the regression model, and the U.S. implied factor of 0.55 for the electric utilities is subject to speculation, but may be due in part to Canada's historical reliance on the risk premium approach in establishing authorized ROEs, as well as more frequent ROE determinations in Ontario (as opposed to the less frequent ROE determinations in the U.S.). Regardless, the higher adjustment factor used in Ontario, and in Canada in general, increases the sensitivity of ROEs to changes in interest rates. During periods of extended changes in rates, in one direction or the other, the resulting ROEs may become out-of-sync with ROEs determined through other methods, such as the DCF. This has been the case in recent years, as steadily declining interest rates have been the single greatest source of the growing gap between U.S. and Canadian ROEs.

Next, we review the prevailing authorized return for the period ending 2007, and the corresponding long term government bond yields to derive the equity risk premium implied by the current data. As discussed previously, the risk premium can be statistically derived, but for purposes of this analysis, we review a snapshot of the data for the 2007 period.

Table 8: Risk Premiums Implied by 2007 Authorized Return Medians

2007	MEDIAN ROE AWARD	PREVAILING LT GOV BOND YIELD	RISK PREMIUM
U.S.	10.50%	4.84%	5.66%
Ontario	9.00%	4.31%	4.69%
Canada (excl. Ontario)	8.60%	4.31%	4.29%
Ontario Formula (2nd Generation)[21]	9.00%	5.20%	3.80%

Sources: see Table 1, Bank of Canada, Bloomberg

As the table above indicates, the "observed" Ontario risk premium is significantly higher than that prescribed by the formula. Ontario's bond yield was lower than that projected, resulting in a higher observed risk premium (4.69 percent) than the stated risk premium of 3.80 percent. If the prevailing long bond yield (4.31 percent) had been applied to the stated Ontario risk premium of 380 basis points, the resulting ROE would have been 8.11 percent rather than the 9.00 percent authorized for 2006 and 2007.[22] Recognizing that Ontario's 2007 ROEs were frozen at 9.00 percent and not derived by the ROE formula, the observed positive difference between Ontario's observed risk premium and that of the other Canadian provinces is temporary and will likely reverse in 2008.

Differences in interest rates between Ontario and its counterparts explain a portion of the divergence between U.S. and Canadian ROEs. At prevailing 2007 bond rates, this difference would substantiate a 53 basis point higher ROE for a U.S. utility. Understanding the difference between risk premiums, however, requires an analysis of the various drivers impacting risk and accordingly ROEs in the U.S. versus Ontario and greater Canada (excl. Ontario).

ASSESSMENT OF INTER-JURISDICTIONAL DIFFERENCES IN ROE

The fact that a difference exists between ROEs for utilities in Ontario and other jurisdictions, particularly the U.S., is not disputed. As stated earlier, the Utilities requested that Concentric seek to gain an understanding of why the difference exists, and if there is some explanatory justification

[21] It should be noted that although this was the formula set out in the OEB Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors, dated December 20, 2006; it was determined that the 3.80 risk premium was derived from an erroneous application of the formula, and should actually have been 3.93%. See Kathleen C. McShane letter on behalf of Toronto Hydro, January 20, 2006.

[22] Note that Hydro One was recently awarded an ROE of 8.35% for 2007 and 2008 electricity transmission revenue requirements in EB-2006-0501, dated August 16, 2007. In this proceeding the forecasted long bond rate was 4.17%, implying an observed equity risk premium of 4.18%.

beyond the methodology employed in Ontario versus other jurisdictions. As return on equity is a measure of the return that investors seek for a given amount of risk, the key question is:

> *Are electric distribution companies in other jurisdictions more risky than those in Ontario, as would be indicated by higher ROEs applied to larger equity percentages, and vice-versa?*

A key issue is therefore assessing comparative risk. To perform this assessment, Concentric collected data regarding fundamental operating, financial, regulatory and business risks for the eight large Ontario utilities, the 55 U.S. utilities, the 13 other Canadian utilities (in provinces other than Ontario), and a set of 10 U.S. public power companies. A full discussion of our data gathering techniques and the company data gathered can be found in Appendix B to this Report.

COMPANY-SPECIFIC DATA

Both Dominion Bond Rating Service ("DBRS") and Standard & Poor's ("S&P") cite a series of factors used to determine the business risk of an LDC. Table 9 is a summary of the factors provided by these two ratings agencies.

Table 9: DBRS and S&P Business Risk Factors

DBRS	S&P
• Regulatory factors • Competitive environment • Regulated vs. non-regulated activities • Domestic vs. foreign operations • Capital spending program • Coverage ratios • Qualitative factors such as customer mix, economic strength in the service territory, and management expertise	• Regulatory factors • Earnings sharing • Allowed ROE • Financial protection from affiliates • Markets and competition (including service territory growth, saturation, customer mix, and economic strength) • Factors related to power supply, and hedging • Management

Sources: Dominion Bond Rate Service, Standard & Poor's

To address the relative risks of companies within our four datasets, we have collected data on the following operating and financial characteristics of each company for the periods ending 2005 -

2007.[23] While not all of this data was available for the companies studied, Concentric gathered as much data as was publicly available along the lines discussed below. We have collected data on the following characteristics:

- *Utility Description* – Name, Parent Company's Name, Country, State or Province, and Regulatory Jurisdiction.
- *Jurisdictional Ranking* – Because the U.S. data is composed of 50+ potential jurisdictions, we have provided a SNL[24] ranking of each U.S. state commission as a business attribute. This ranking rates Commissions for regulatory climates: Above Average, Average, and Below Average. Within the principal rating categories, the numbers 1, 2, and 3 indicate relative position. The designation 1 indicates a stronger rating; 2, a mid-range rating; and, 3, a weaker rating. The evaluations are assigned from an investor perspective and indicate the relative regulatory risk associated with the ownership of securities issued by the jurisdiction's utilities. The evaluation reflects SNL's assessment of the probable level and quality of the earnings to be realized by the state's utilities as a result of regulatory, legislative, and court actions. Concentric has converted these rankings to a numerical ranking from 1 to 9, with 1 being the best, most cooperative regulatory environment.
- *Ownership Structure* – Investor-owned versus municipally-owned or Crown-corporation
- *Regulatory Rate Information* –
    - Authorized ROE;
    - Authorized Equity Ratio; and
    - The ROE rate-setting process employed.
- *Credit Rating* – Obtained the credit rating for each company and developed a ranking for each credit rating, ranging from 1 to 26, to correspond with all the ratings notches used by S&P, with 1 being the best.
- *Long-Term Government Bond Yield* – For the U.S. companies, to best identify the relationship between government bond yields and ROEs we have calculated the six-month average of the long-term government bond yield as of the date the ROE was authorized to best reflect the interest rates that were in effect during the rate setting process. As the Canadian process is

[23] 2007 figures are as of September 30, 2007.
[24] SNL is a proprietary data and research service to which Concentric subscribes.

generally forward looking and utilizes forecasted bond yields, Concentric used the average bond yield for the 12-month period for which the ROE was applicable.[25]

- *Implied Long-Term Debt Cost* – calculated as interest expense / long term debt, unless expressly stated.
- *Performance Attributes* –
    - Actual Return on Equity calculated as Net Income / Stockholder's Equity; and
    - Interest Coverage calculated as EBIT / interest expense.
- *Financial Attributes* –
    - Book Value
    - Actual Equity Ratio
- *Operations Attributes* –
    - Capital Expenditures as a percent of book value, unless expressly stated, Concentric calculated this by taking cash spent on capital investments (from the cash flow statement) divided by shareholder's equity. Generally, heightened capital requirements increase business risk for companies in several ways: (1) risk of cost under-recovery associated with project cost over-runs and/or poor performance of the new facilities; and (2) capital requirements to finance new construction can result in downward pressure on the Company's credit rating. Market data indicate that investors recognize these risks and discount the valuation multiples of companies with high ratios of capital expenditures to net plant. That is, the financial community acknowledges the risks associated with substantial capital expenditures and reflects those risks in lower valuation multiples, and therefore, higher required returns.
    - Electric Distribution Customers; and
    - Industrial MWhs sold as a percent of total MWhs sold; a large concentration of industrial sales has certain risk ramifications due to the large and unpredictable swings in the industrial load profile, in addition to the risk of loss of load due to competition, fuel switching, bypass or self-generation.

[25] For BC Hydro and Manitoba Hydro, whose fiscal year ends on March 31, the average bond yield matches the fiscal year.

- *Affiliate Attributes* – Concentric calculated the percent of affiliate revenues to that of the ultimate parent, any percentage lower than 75 percent was assigned a "1" indicating that the company was affiliated.

Table 10: Comparison of Most Recent Key Operational and Financial Data

UTILITY / JURISDICTION	AUTH. ROE	AUTH. EQUITY RATIO	CREDIT RATING	ROE SETTING PROCESS	BOOK VALUE ($MILLIONS)	INTEREST COVERAGE	CAPITAL EXPENDITURES / BOOK VALUE	ELECTRIC DISTRIBUTION CUSTOMERS	INDUSTRIAL LOAD (% MWHS)
Enersource Hydro	9.00%	40.00%	A	Automatic	209.5	2.04	17.13%	181,642	12.33%
FortisOntario	9.00%	50.00%	A-	Automatic	-	-	-	52,000	57.60%
Horizon Utilities	9.00%	40.00%	A	Automatic	181.2	4.12	18.71%	231,638	56.78%
Hydro One Networks	9.00%	40.00%	A	Automatic	4,866.0	2.68	20.96%	1,293,396	5.00%
HydroOttawa	9.00%	40.00%	A-	Automatic	282.2	4.79	33.78%	282,393	8.77%
PowerStream	9.00%	40.00%		Automatic	192.2	2.90	30.06%	228,471	58.36%
Toronto Hydro	9.00%	35.00%	A-	Automatic	916.5	2.37	24.22%	678,000	10.15%
Veridian Connections	9.00%	45.00%	A	Automatic	84.8	2.42	18.95%	107,239	50.59%
Ontario (median)	9.00%	40.00%	A-	Automatic	209.5	2.68	20.96%	230,055	31.46%
Canada (median of 13 companies excl. Ontario)	8.60%	39.00%	A		1,448.6	2.00	30.32%	433,000	36.04%
U.S. (median of 55 companies)	10.50%	47.54%	BBB	Rate Case	1,026.3	3.85	18.43%	458,001	24.18%
U.S. Public Power (median of 10 companies)	N/A	N/A	AA-	N/A	1,505.3	1.69	19.17%	505,840	44.00%

Sources: 2007 and 2008 Electricity Distribution Rate Applications, Company Quarterly and Annual Reports, Annual Information Forms, DBRS Rating Agency Reports, Utility Commission Orders, and 2006 Yearbook of Electricity Distributors

Table 11: 2006 Descriptive Statistics

2006		Credit Rating	Cost of Debt	Book Value ($M)	EBIT Interest Coverage	Capital Exp. / Book Value	Electric Distribution Customers	Industrial Load (% MWhs)	% Revenue of Parent
Mean	U.S.	BBB+	5.25%	1,622.9	3.81	24.24%	847,552	23.88%	41.86%
	U.S. Public Power	AA-	4.47%	1,695.2	1.57	38.76%	640,712	48.01%	N/A
	Canada (excl. Ontario)	A	7.04%	2,837.0	2.65	34.50%	708,034	36.92%	73.97%
	Ontario	A-	6.23%	837.6	3.00	22.75%	381,861	32.45%	86.05%
	Ontario (distribution only)[1]	-	7.44%	379.0	2.89	27.64%	362,785	52.74%	-
Median	U.S.	BBB	5.45%	1,035.2	3.63	19.95%	507,478	23.73%	38.99%
	U.S. Public Power	AA-	4.55%	1,424.4	1.63	23.94%	505,840	46.68%	N/A
	Canada (excl. Ontario)	A	7.03%	1,396.3	2.11	25.87%	429,987	36.59%	100.00%
	Ontario	A	6.18%	200.9	2.69	18.83%	230,055	31.46%	100.00%
	Ontario (distribution only)[1]	-	6.56%	187.5	2.87	27.10%	229,985	57.57%	-
Standard Deviation	U.S.	1.73 notches	1.40%	1,940.8	1.33	20.66%	1,037,479	13.96%	31.45%
	U.S. Public Power	1.35 notches	0.50%	1,388.5	0.80	46.89%	394,089	13.38%	N/A
	Canada (excl. Ontario)	1.97 notches	1.24%	5,667.9	2.24	26.49%	1,021,401	15.27%	38.56%
	Ontario	1.11 notches	0.83%	1,631.3	0.95	6.65%	413,860	25.19%	32.01%
	Ontario (distribution only)[1]	-	2.30%	493.7	0.65	9.54%	376,618	19.93%	-
Minimum	U.S.	BB	0.90%	24.1	1.46	3.58%	37,160	1.60%	0.73%
	U.S. Public Power	A-	3.84%	169.8	0.02	10.02%	156,499	25.97%	N/A
	Canada (excl. Ontario)	BBB	5.03%	220.0	2.24	8.96%	71,000	11.30%	8.37%
	Ontario	BBB	4.89%	37.5	0.95	17.07%	52,000	5.00%	8.83%
	Ontario (distribution only)[1]	-	4.66%	14.9	1.80	19.00%	28,024	7.61%	-
Maximum	U.S.	AA-	7.65%	8,676.2	8.23	140.58%	5,121,487	61.39%	102.70%
	U.S. Public Power	AA	5.00%	4,111.6	2.53	159.02%	1,445,000	68.00%	N/A
	Canada (excl. Ontario)	AA	9.43%	18,840.0	9.50	95.00%	3,815,126	65.00%	100.00%
	Ontario	A	7.60%	4,821.0	4.79	33.78%	1,293,396	58.36%	100.00%
	Ontario (distribution only)[1]	-	11.01%	1,494.3	3.76	47.58%	1,163,961	71.58%	-
Count[3]	U.S.[4]	47	50	50	49	50	50	46	50
	U.S. Public Power	10	9	9	10	9	10	8	N/A
	Canada (excl. Ontario)	11	12	10	12	10	13	9	13
	Ontario	7	8	8	8	8	8	8	8
	Ontario (distribution only)[1]	-	7[2]	8	8	8	8	8	-

[1] 2006 Yearbook of Electricity Distributors, Ontario Energy Board (data represents distribution only and is therefore lower than "Ontario" figures which include transmission, generation, other, etc.)
[2] Excludes data for Toronto Hydro-Electric System Limited (Cost of Debt [interest expense / long-term debt] = 42.52%)
[3] Counts vary due to unavailability of 2006 data for the specified operational or financial attribute.
[4] Concentric was missing 2006 data for 5 of the 55 U.S. companies reviewed.

Sources: 2007 and 2008 Electricity Distribution Rate Applications, Company Quarterly and Annual Reports, Utility Commission Orders, and 2006 Yearbook of Electricity Distributors

In contrast to the other Canadian utilities, these data suggest Ontario's utilities have relatively comparable ROEs, allowed equity ratios, capital expenditure levels and credit ratings. To the positive from a business risk standpoint, Ontario's Utilities have higher interest coverage ratios and less industrial load. These advantages may be offset by Ontario utilities' smaller size. In contrast to the U.S. group, the Ontario utilities have lower ROEs, less allowed equity, higher credit ratings despite lower interest coverage, comparable capital expenditures, more industrial load exposure and are significantly smaller. These comparisons point in different directions from an ROE perspective. All else being equal, the lower equity ratio (and more debt), greater industrial exposure, lower interest coverage and smaller size should imply a higher ROE. Pointing in the other direction, the higher credit rating would tend toward a lower ROE. On balance, these data would not suggest that Ontario is less risky than the U.S. utilities or vice versa; and accordingly does not explain the observed differences between the allowed ROEs.

To further examine the primary influences behind authorized returns in the U.S., Ontario, and the other Canadian provinces, Concentric has developed a series of regression models which considered the above factors in developing a model of each group's authorized returns. It is important to note that these models measure regulators' behavior in assigning authorized returns given a set of financial and operational attributes for specific companies, and do not measure the relative importance or actual weight of any one attribute on the actual risk of the company. The regression results for the U.S. companies are detailed below:

Table 12: U.S. Regression Model

U.S. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.858[a]	.737	.722	.4580683%	.737	49.613	7	124	.000	.954

a. Predictors: (Constant), Affliate (Yes = 1/No = 0), Industrial Load (% MWhs), Authorized Equity Ratio, Capital Exp. / Book Value, Jurisdiction Rar Book Value ($B), Long-Term Govt. Bond Yield

b. Dependent Variable: Authorized ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	9.429	.531		17.757	.000	8.378	10.480			
	Jurisdiction Rank	-.172	.028	-.300	-6.114	.000	-.228	-.117	-.296	-.481	-.282
	Authorized Equity Ratio	-.020	.008	-.130	-2.566	.011	-.035	-.005	-.308	-.225	-.118
	Long-Term Govt. Bond Yield	.495	.037	.694	13.362	.000	.422	.568	.764	.768	.616
	Capital Exp. / Book Value	.004	.003	.081	1.704	.091	-.001	.009	.021	.151	.079
	Industrial Load (% MWhs)	.015	.003	.248	5.088	.000	.009	.021	.291	.416	.234
	Book Value ($B)	.063	.022	.141	2.853	.005	.019	.107	.009	.248	.131
	Affliate (Yes = 1/No = 0)	-.153	.114	-.067	-1.341	.182	-.379	.073	-.038	-.120	-.062

a. Dependent Variable: Authorized ROE

As the above results indicate, by reviewing the relative strength of the t-statistics, the long-term government bond yield was the single most important factor in determining authorized returns in the U.S. The second most significant factor was the jurisdictional rank assigned by SNL. This variable addresses the regulatory risk that is present in the U.S. among jurisdictions; the higher the ranking, the lower the perception of the regulatory climate, and the more likely companies operating in those jurisdictions are to receive a low ROE award, as confirmed by the negative sign on the coefficient. The next most significant factor in determining the level of ROE was the percentage of industrial MWhs sold of the total sales volume. As industrial sales make up a greater portion of total sales, higher ROEs were awarded. Of the factors considered that may explain the risk profile of an electric distribution company, i.e. book value, capital expenditures as a percent of book value, interest coverage, credit rating, fuel mix, payout ratio, number of customers, affiliate percentage, and percent distribution revenues; the percentage of industrial load was the most significant risk factor. This is a logical result as industrial customers are characterized by cyclical demand and are prone to fuel switching and system bypass, posing risks to the electric utility. Book value was the next most significant factor in estimating ROE, with larger book values receiving greater awards. To some extent, this result is counterintuitive, as generally large companies are more diversified, have greater economies of scale, and as a result are often granted lower rates of return. However, as this analysis focuses on companies at the operating company level, there is very little diversification. The authorized equity ratio was the next most significant variable in estimating U.S. authorized returns. As the equity ratio becomes larger, theoretically, the risk of the company is less and thus authorized returns are less. This is confirmed by the negative equity ratio coefficient. Capital expenditures as a percent of book value was the next most significant factor that helped to specify the level of authorized returns in the U.S. Many regulators in the U.S. consider a company's level of capital requirements in their ROE awards. If it is certain that the company will have to access capital

markets to support its capital investment plan, regulators may be more accommodating in providing an ROE that will be sufficient to attract this incremental capital. Lastly, the affiliate indicator for U.S. companies was not statistically significant at the 95 percent confidence level (it is at 80 percent however). Though not conclusive and potentially subject to a high degree of error, it is informative that the coefficient suggests U.S. affiliated companies receive a 15 basis point reduction in ROE. Though we conclude that the data suggests that affiliated utilities may receive lower ROEs than those that are unaffiliated, the magnitude of that relationship may be significantly higher or lower than the coefficient would suggest due to its low degree of certainty.

A similar model was developed for the Ontario companies. There were only two levels of ROE from 2005 – 2007 in Ontario, and those ROEs were based on forecasted bond yields, so it is not surprising that the only significant factor was the long-term government bond yield. The results are provided below:

Table 13: Ontario Regression Model

Ontario (Only) Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.965[a]	.931	.928	.11402%	.931	295.686	1	22	.000	2.874

a. Predictors: (Constant), Long-Term Govt. Bond Yield

b. Dependent Variable: Authorized ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-16.744	1.514		-11.057	.000	-19.884	-13.603			
	Long-Term Govt. Bond Yield	6.002	.349	.965	17.196	.000	5.278	6.726	.965	.965	.965

a. Dependent Variable: Authorized ROE

The next analysis specified the level of authorized returns in the Canadian provinces with Ontario's returns set out with a dummy variable to capture any differences specific to Ontario. Those results are provided below:

Table 14: Canadian Provinces Regression Model

Canadian Provinces (Ontario Effects Isolated with a Dummy Variable) Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.848[a]	.720	.676	.325299%	.720	16.428	5	32	.000	1.988

a. Predictors: (Constant), Ontario Dummy, Long-Term Govt. Bond Yield, Authorized Equity Ratio, Affiliate Dummy Variable % of Ult Parent <75%, Book Value ($B)

b. Dependent Variable: Authorized ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-10.290	3.325		-3.095	.004	-17.062	-3.518					
	Authorized Equity Ratio	.006	.017	.036	.332	.742	-.029	.041	.293	.059	.031	.763	1.310
	Long-Term Govt. Bond Yield	4.445	.750	.555	5.925	.000	2.917	5.973	.575	.723	.555	.999	1.001
	Book Value ($B)	-.059	.012	-.544	-5.021	.000	-.083	-.035	-.601	-.664	-.470	.747	1.339
	Affiliate (Yes = 1/No = 0	-.126	.141	-.091	-.889	.380	-.414	.162	.010	-.155	-.083	.838	1.194
	Ontario Dummy	.207	.115	.183	1.805	.080	-.027	.441	.351	.304	.169	.857	1.167

a. Dependent Variable: Authorized ROE

As the regression equation above shows, Canadian ROEs are highly sensitive to the level of interest rates. Furthermore, in Canada, book value and long-term bonds are nearly equally as important in determining authorized returns. In Canada, as book value increases, ROE awards decrease. It is evident that Canadian regulators are attentive to book value as a determinant of risk. In the discussion paper by Dr. Cannon, *A Discussion Paper on the Determination of Return on Equity and Return on Rate Base for Electricity Distribution Utilities in Ontario*, he recommends using size to determine equity thickness, with the larger companies considered less risky and thus receiving the smaller equity portions.[26] The authorized equity ratio coefficient and the affiliate dummy variable coefficients are inconclusive. Finally, the Ontario dummy variable adds a small increment to ROEs indicating that, all else being equal, ROEs in Ontario are slightly higher than those of its neighboring provinces. However, as indicated previously, 2007 ROEs in Ontario were frozen at the 9.00 percent level. We would expect this positive difference between Ontario and the other Canadian provinces to disappear once the ROE formula is applied in Ontario.

A final regression model was specified to include all the companies and all the primary drivers for authorized returns. Both "Country" and "Ontario" were specified with a dummy variable. Though the jurisdiction rank was only available for the U.S. companies, in this analysis we assume that all of

[26] Dr. William T. Cannon, *A Discussion Paper on the Determination of Return on Equity and Return on Rate Base for Electricity Distribution Utilities in Ontario*, December 1998, at 3.

the Canadian provincial regulatory energy boards are within the above average range and are assigned a ranking of 2. The results are as follows:

Table 15: U.S. and Canada Combined Regression Model

U.S. & Canada Combined Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.880[a]	.775	.763	.5012158%	.775	63.699	8	148	.000	1.294

a. Predictors: (Constant), % Revenue of Parent (< 75% = 1), Industrial Load (% MWhs), Capital Exp. / Book Value, Authorized Equity Ratio, Long-Term Govt. Bond Yield, Jurisdiction Rank, Ontario Dummy, U.S. = 1, Canada = 0

b. Dependent Variable: Authorized ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	7.526	.449		16.746	.000	6.638	8.414					
	Jurisdiction Rank	-.156	.030	-.274	-5.126	.000	-.216	-.096	.207	-.388	-.200	.532	1.879
	Authorized Equity Ratio	-.015	.008	-.083	-1.839	.068	-.030	.001	.007	-.149	-.072	.747	1.338
	Long-Term Govt. Bond Yield	.507	.040	.605	12.810	.000	.429	.585	.789	.725	.500	.681	1.469
	Capital Exp. / Book Valu	.003	.003	.044	1.120	.265	-.002	.008	-.040	.092	.044	.979	1.021
	Industrial Load (% MWhs	.009	.003	.135	3.327	.001	.004	.014	.108	.264	.130	.925	1.081
	U.S. = 1, Canada = 0	1.838	.209	.655	8.788	.000	1.424	2.251	.596	.586	.343	.273	3.658
	Ontario Dummy	.261	.204	.070	1.282	.202	-.141	.664	-.373	.105	.050	.507	1.971
	Affiliate (Yes = 1/No = 0)	-.210	.106	-.090	-1.975	.050	-.420	.000	.247	-.160	-.077	.734	1.363

a. Dependent Variable: Authorized ROE

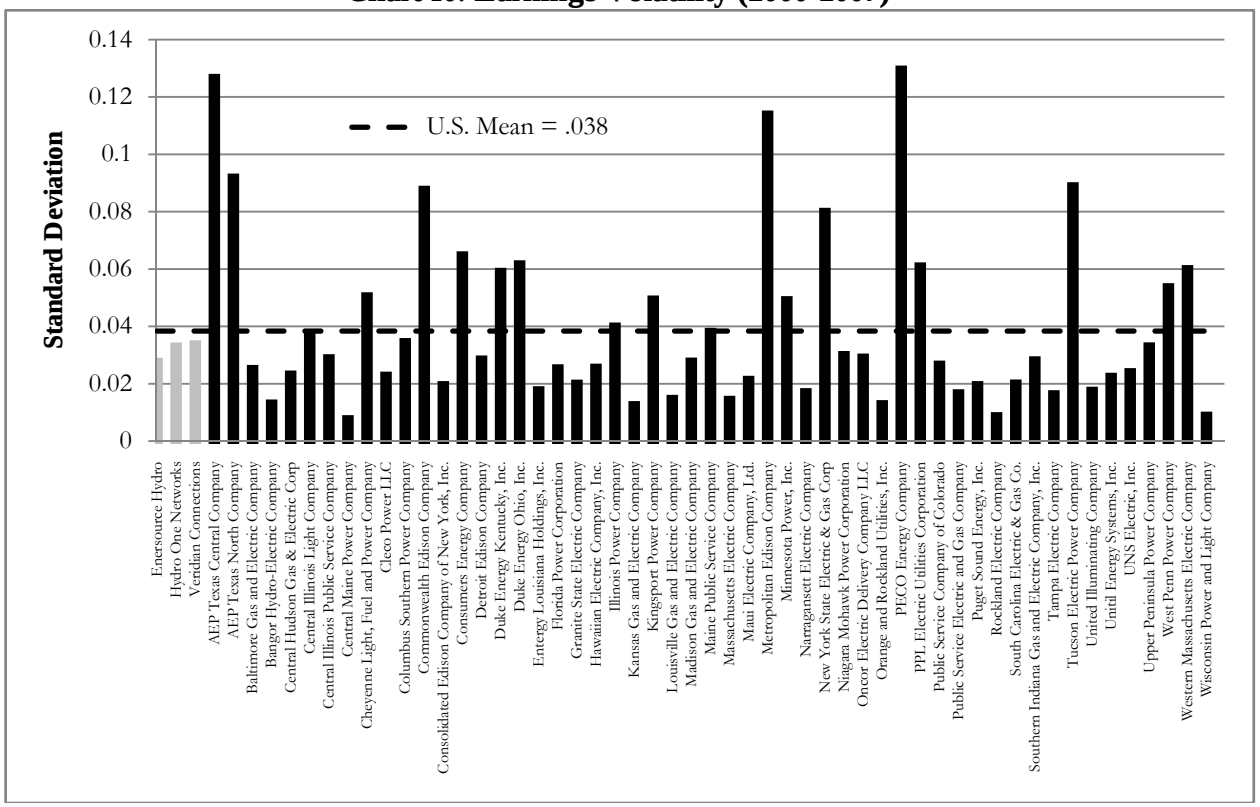
In the final analysis, we can see that U.S. and Ontario electric distribution ranges of sizes, types and numbers of customers, credit ratings, risk factors and other operational attributes largely overlap. This model combines the effect of U.S. and Canadian ROE approaches and provides an assessment of each individual factor's historical impact on ROE across both Countries. The model suggests that Ontario returns are approximately 26 basis points higher than the other Canadian provinces, and the U.S. authorized returns are an additional 158 basis points higher than the Ontario returns, assuming the same level of interest rates. As indicated previously, the OEB froze ROEs at 9.0 percent for 2007. Annual application of the ROE formula would likely reduce or eliminate any positive difference between Ontario and the other Canadian provinces.

These data and regression analyses cannot determine why utilities in Ontario and other Canadian provinces receive a lower allowed return than in the U.S. In essence, the above model says that there is a 184 basis point differential between the U.S. and other Canadian provinces, and 158 basis

points between the U.S. and Ontario's utilities that cannot be explained by the fundamental differences in interest rates and company attributes.

We also considered earnings volatility in our analysis of ROEs. The Chart below reflects the annual volatility in actual earned ROE for a small sample of Ontario electric utilities versus that of the U.S. electric utilities since 2000.

Chart 10: Earnings Volatility (2000-2007)[27]



Sources: SNL Financial, Enersource Hydro, Hydro One Networks, Veridian Connections historical return data

As shown in Chart 10, the variability in ROE for the U.S. companies encompasses a broad range of results (from .0072 to .71). The average standard deviation of .038 is comparable to that of the Ontario electric utilities, but there is little doubt that the range of U.S. earned returns is greater than those sampled in Ontario. However, of the 53 U.S. companies in this sample, 36 had the same or lower variability, while 17 had greater variability in relation to the Ontario sample. The variability in earned ROEs between individual utilities can be attributed to a myriad of factors. These include but

[27] Excludes data for Aquila (Std. dev. = 0.46) and Pacific Gas & Electric (Std. dev. = 0.71) for visual purposes.

are not limited to: regulatory environment, revenue stabilization mechanisms, operational environments, customer profile, book value, capital expenditures, affiliation, and other associated uncertainties. Thus, while volatility in earnings may affect the risk of both U.S. and Ontario utilities, the majority of U.S. companies sampled had lower volatility than the Ontario utilities represented and on average the volatilities between the U.S. utilities and the Ontario utilities were virtually the same.

Since company-specific data do not explain the gap between inter-jurisdictional ROEs, we must expand the analysis to include territory and country-specific factors that were not addressed in the above models. Specifically, we will analyze the (1) macro-economic factors that may generally impact the level of equity returns; (2) differences in ownership structure between the U.S. companies and the Ontario and other Canadian companies, and (3) prevailing tax treatment of dividends for respective investors.

MACRO-ECONOMIC FACTORS

Table 16 provides data for Canada and the U.S. regarding indicators of economic growth and stability, as well as market returns.

Table 16: Macroeconomic Factors

	GDP GROWTH		RETURN ON:		CPI		EXCHANGE RATE (CAD / US)
	CANADA	U.S.	S&P / TSX (TSE 300)	S&P 500	CANADA	U.S.	
1983	5.74	4.52	27.28	16.82	4.51	3.70	1.23
1984	4.37	7.19	(5.65)	2.20	3.66	4.10	1.30
1985	6.43	4.13	19.29	23.90	4.31	4.00	1.37
1986	0.73	3.47	5.95	14.73	4.14	1.40	1.39
1987	5.35	3.38	5.81	7.51	4.12	4.20	1.33
1988	3.63	4.13	7.55	13.16	3.81	4.20	1.23
1989	1.68	3.54	16.14	24.97	5.14	4.40	1.18
1990	(1.98)	1.88	(19.35)	(5.51)	4.89	6.20	1.17
1991	0.25	(0.17)	7.90	24.39	3.73	2.90	1.15
1992	1.35	3.33	(4.42)	4.84	2.15	2.90	1.21
1993	2.97	2.67	25.78	7.19	1.64	2.70	1.29
1994	5.55	4.02	(1.97)	(1.07)	0.24	2.70	1.37
1995	0.47	2.50	11.57	29.67	1.73	2.50	1.37
1996	2.22	3.70	23.28	19.16	2.14	3.30	1.36
1997	4.59	4.50	13.12	28.67	0.78	1.70	1.38
1998	3.95	4.18	(1.31)	25.71	0.99	1.40	1.48
1999	6.16	4.45	27.12	19.47	2.60	2.70	1.49
2000	3.37	3.66	9.50	(8.23)	3.16	3.40	1.49
2001	0.48	0.75	(13.13)	(11.69)	0.74	1.50	1.55
2002	3.10	1.60	(13.68)	(23.24)	3.74	2.60	1.57
2003	2.77	2.51	22.22	24.87	2.07	1.80	1.40
2004	2.87	3.64	12.39	9.23	2.12	3.50	1.30
2005	3.69	3.07	20.38	3.48	2.07	3.40	1.21
2006	1.78	2.87	14.40	13.27	1.67	2.50	1.13
2007	2.32	2.19	7.91	4.74	2.36	4.20	1.07
25-year Avg.	2.95	3.27	8.72	10.73	2.74	3.12	
10-year Avg.	3.05	2.89	8.58	5.76	2.15	2.70	
5-year Avg.	2.69	2.86	15.46	11.12	2.06	3.08	
Standard Deviation			13.11	13.72			
Correlation	0.64		0.62		0.65		

Sources: Canada GDP growth, Return on S&P/TSX (TSE 300), Return on S&P 500 – Bloomberg; U.S. GDP growth – U.S. Bureau of Economic Analysis; U.S. CPI – U.S. Bureau of Labor Statistics; Exchange Rate – U.S. Federal Reserve

As can be seen in Table 16, the correlation between GDP growth in the two countries is quite high, as is the correlation between the consumer price indices for each country, indicating that these metrics tend to vary together over time between the two countries. For returns on broad market indices (*i.e.*, the Toronto Stock Exchange/S&P and the S&P 500), the correlation is almost as robust. In addition, the returns on these two indices show a similar volatility as measured by their standard deviations. Based on these macroeconomic factors, there are no obvious dissimilarities between Canada and the U.S. (*i.e.*, in terms of volatility in growth, inflation, or exchange rates) which could explain significant differences in investors' expectations. Based on the past five years,

investors investing in the Toronto stock exchange have enjoyed a six percent greater return than those investing in the U.S. S&P 500. Over the long term, however, returns in the respective markets have been more similar. Furthermore, the magnitude and significance of trade between the two countries would indicate the integration of the two markets. In 2006, Canada exported 81.60 percent of its total exports to the U.S. and imported from the U.S. 54.90 percent of its total imports.[28] The above macroeconomic data indicate that the U.S. and Canadian markets are highly correlated and integrated. There is nothing in the above data to suggest that Canadian companies should receive lower returns than those in the U.S. If anything, recent stock market return data suggest that Canadian investors would expect higher returns.

[28] Strategis, Industry Canada, February 2007.

OWNERSHIP STRUCTURE

The Canadian electricity industry remains dominated by government-owned utilities despite recent efforts on the part of Canadian regulators to encourage privatization. In fact, as the Table below indicates, the seven large Ontario electric distributors who commissioned this study are generally municipally or provincially owned:

Table 17: Ownership Structure of Ontario Large Electric Utilities

UTILITY	OWNERSHIP	EQUITY OWNERS			
Enersource Hydro	Municipal	City of Mississauga (90.0%)		BPC Energy Corporation (10.0%)[1]	
Horizon Utilities	Municipal	Hamilton Utilities Corporation (78.9%)		St. Catharine's Hydro, Inc. (21.1%)	
Hydro One Networks	Provincial	Province of Ontario (100.0%)			
HydroOttawa	Municipal	City of Ottawa (100.0%)			
PowerStream	Municipal	City of Vaughan (57.0%)		Town of Markham (43.0%)	
Toronto Hydro	Municipal	City of Toronto (100.0%)			
Veridian Connections	Municipal	City of Pickering (41.0%)	Town of Ajax (32.1%)	Municipality of Clarington (13.6%)	City of Belleville (13.3%)

[1] Wholly owned subsidiary of Ontario Municipal Employee Retirement System

Sources: Company Quarterly and Annual Reports

Privatization efforts have been slowed by the regulators' reluctance to allow restructured market forces to play out if that would result in higher electricity prices for the consumer. As such, the majority of electric utilities are established as quasi-private utilities that are allowed a return on equity, albeit largely unsubstantiated in its ability to attract external capital.

Ownership structure results in differing ultimate goals for the respective entities. An investor-owned utility will presumably seek to maximize profits for its shareholders. The incentive exists for investor-owned utilities to seek the highest level of allowed return and the highest deemed common equity ratio allowable by regulators. Indeed, because such utilities must seek financing in capital markets where discriminating investors shop for the highest return for a given perceived level of risk, regulators are obliged to provide a return that is commensurate with returns of competing investments of comparable risk, to position the utility so that it may attract capital investment.

Conversely, municipally owned organizations are driven to provide low cost service, promote the growth and welfare of the community, and often overlay other social and energy policy objectives into its rate setting policy. Municipal rates are often set by the utility without the same degree of regulatory scrutiny as investor-owned utilities. This leaves room for consideration of larger policy issues, where electric rates may be considered against municipal tax burdens. In effect, the setting of electric rates is a wealth transfer decision between electric ratepayers and taxpayers when the utility and municipal government are serving the same community (assuming any under-recovery of utility capital costs will be met with other forms of municipal taxation). There are implicit advantages to the municipality by setting lower electric rates, i.e. prosperity in the community and attraction of new business. Alternatively, higher electric rates may serve to reduce the tax burden of the community, but at the expense of the ratepayer. In either case, there is no real market test for a municipally owned utility ROE if the utility is not required to compete for investment capital in capital markets.

It is conceivable that the Canadian electric utility industry suffers to some extent from an identity crisis. While provincial policies may promote privatization, many utilities operate as quasi-corporate entities, serving as conduits for community welfare, either by way of lower electric rates, lower property taxes or other policy objectives. Regulators safely presume that for the dominant majority of electric utilities there is a financially strong municipality supporting the financial integrity of the utility. Regulators provide a return that is theoretically sufficient to attract investment capital, but the vast majority of the utilities enjoy the financial support of their primary investor (e.g., the municipal government) without the need to test these returns in competitive capital markets.

We believe that ownership structure is a significant factor in explaining the divergence in utility returns between the U.S. and Canada. As indicated previously, Canadian utility returns are generally 184 basis points below those of their American counterparts, Ontario returns are 158 basis points below U.S. returns, yet Canadian utilities enjoy more favorable credit ratings than their U.S. counterparts, and the broader Canadian equity market returns actually exceed U.S. equity returns. The ownership structure of the Canadian and Ontario owned electric utilities is undoubtedly contributing to this difference. Although the ownership structure does not directly impact the computation of ROE, it provides a higher level of financial stability enabling the utilities to continue to access capital regardless of the level of their authorized returns. As such, the level of return has minimal bearing on the vast majority of Canadian utilities ability to access capital. Debt investors are primarily concerned with the ability of the utility to cover interest and principal payments in their debt obligations, with little regard for funds remaining for "equity" (only as a safety cushion over debt obligations). Returns may be set as low as ratings agencies will tolerate, providing they are sufficient to maintain a fundamental level of financial integrity. As such, since the majority of Canadian electric utilities are municipally owned, ratings agencies will continue to provide high credit ratings for the financial strength of the government. There is little incentive for setting returns at competitive private market rates, especially when regulators perceive political pressures associated with rising electric rates. Such policies will, however, ultimately slow the pace of privatization if investors believe they will not be able to earn market-based rates of return.

TAX LAW

Tax law can play a role in investors' expected returns, particularly as it relates to the taxation of dividends. This is especially true for utilities, as they typically have relatively high dividend payout ratios. Even though the Ontario utilities' shareholders are non-taxable municipalities or Crown corporations, we consider the OEB's overarching goal to set returns at levels that will encourage privatization. As such, we evaluate the differing corporate and individual tax treatment of capital gains and dividends for private investors in both countries. Below is a table that summarizes the relevant tax treatment for both countries:

Table 18: Comparison of Tax Rates

	CANADA		UNITED STATES[1]
	FEDERAL	ONTARIO	FEDERAL
Corporate Income	21%	5.5% - 14%	15% - 35%
Individual Income	15% - 29%	6.05% - 11.16% [2]	10% - 35%
Capital Gains	50% taxable	50% taxable	5% - 15%
Dividends	Dividend Tax Credit Calculated by grossing-up dividend by 145% and calculating credit at 19% of grossed-up dividend	Dividend Tax Credit of 6.7% of grossed-up dividend.	15%

[1] State corporate income taxes range from no income tax (South Dakota) to 9.99% (Pennsylvania); and individual income taxes range from no income tax (Alaska, Florida, Nevada, South Dakota, Texas, Washington and Wyoming) to 9.5% (Vermont).
[2] Excludes Ontario Health Premium.

Sources: Canada Revenue Agency, and The Tax Foundation

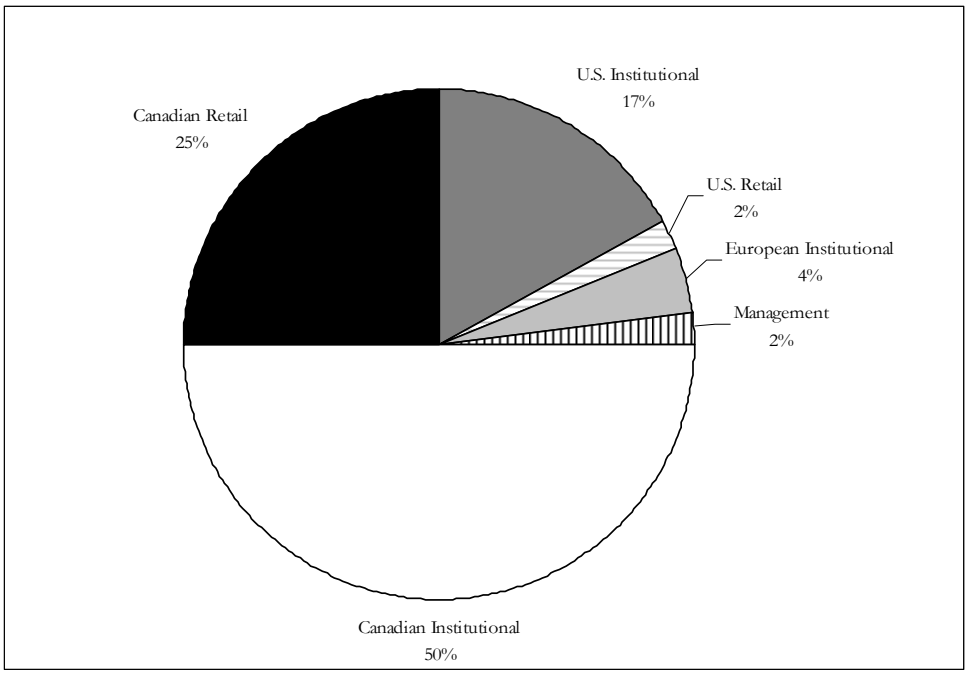
As indicated in the Table above, Canada and the U.S. both employ incentive tax treatment for dividends and capital gains. In Canada, for instance, investors receive a dividend tax credit to compensate for the "double taxation of corporate earnings", i.e. taxes paid by the corporation (by paying dividends on after tax income), and then again paid by investors when they are taxed on dividend income. Canada mitigates this double taxation by allowing a credit to investors to reimburse them for the majority of the taxes they would otherwise have paid on the dividend income. In the U.S., there is no dividend tax credit, but dividends are taxed at a favorable maximum rate of 15 percent for individuals, effective with the passage of the Jobs and Growth Tax Relief Reconciliation Act of 2003. Similarly, capital gains are taxed at a reduced rate of 15 percent in the U.S.; but are only 50 percent taxable in Canada at the normal income tax rate.

If the equity ownership of the Canadian utilities and U.S. utilities were primarily comprised of taxable corporate and individual investors, we would be able to assess what effect, if any, tax treatment might have on the ROE required by investors. However, the taxable identity of U.S. and Canadian equity investors is many shades of gray. The Ontario utilities' shareholders have no tax attributed to them[29], however as indicated earlier, to encourage private investment and consolidation among the Ontario electric distribution utilities, the authorized return should be sufficient to attract necessary capital from private investment. In investor-owned utilities in both the U.S. and Canada,

[29] Ontario's municipal utilities have a payment-in-lieu-of taxes arrangement where the utility pays the Ontario government as if it were a corporate entity, but pays no federal tax.

institutional investors of a utility comprise the vast majority of U.S. utility stock ownership, typically 50 to 70 percent of the total equity share of a utility. Since many of those institutions are tax-exempt funds, it is likely that a large percentage of U.S. and Canadian companies' equity investors pay no income tax at all. Moreover, the ultimate investors in these tax-advantaged retirement funds (pension fund or 401-K account holders) are able to defer tax effects until retirement, here again; the effect of taxes is mitigated. Below, is an illustration of the equity ownership of a typical private investor-owned Canadian utility, Enbridge, Inc. As the chart reflects, Enbridge's domestic and international institutional ownership is approximately 71 percent. As we will discuss later, U.S. utilities are similarly capitalized.

Chart 11: Enbridge Inc. Investor Base



Source: Concentric Energy Advisors, Inc., "A Comparative Analysis of Return on Equity of Natural Gas Utilities," (June 2007)

Furthermore, it is important to note that tax advantages related to dividends may be diminished or not available to international investors. Cross-border taxation of dividends also differs depending on the direction of the investment (*i.e.*, a U.S. investment in a Canadian security), as well as the type

of account in which the investment is held (*i.e.*, retirement versus taxable).[30] For example, Canadian individual investors lose the benefit of the dividend tax credit if the dividend income is derived from foreign investment, whereby there is no corresponding tax disincentive for U.S. investment abroad. Further, many taxing authorities will refund taxes paid on international investments, while replacing those foreign taxes with domestic taxes. As such, national tax policies tend to promote domestic investment and discourage the flow of funds out of the country either through penalties or by removing tax incentives that otherwise would make international investment attractive. Overall, most countries set policy so there is little or no tax benefit for international investment, thereby retaining domestic funds for investment in the home country. Generically, these limitations and disincentives serve to limit the flow of cross border investment.

On balance, we do not find a basis for divergent utility returns in the tax laws. This conclusion is supported by the comparability in returns between Ontario companies and U.S. companies in the broader stock market, as illustrated in Table 16, which provides no evidence that Canadian investors accept lower returns, due to their taxation policies or for any other reason, than those required by U.S. investors. To quantify the effect of taxation policy on allowed equity returns, the investor's tax position must be known. As we cannot know the actual tax status of equity investors in U.S. and Canadian utilities, we must look to the broader market for inferences on the impact of such policies, or make assumptions based upon what we know of the ownership of the U.S. and Canadian utilities. As the Ontario utilities' shareholders (the municipalities and provinces) are not subject to taxes, and the U.S. utilities are primarily owned by U.S. institutional investors, some of which are non-taxable or participate in plans in which taxes are deferred (as in the case of 401-K retirement plans), the taxable composition of a U.S. utility or that of what a Canadian privatized utility hypothetically would be is muddy at best. In the context of the broader equity markets, we see no evidence that tax policy differences have resulted in differing returns, implying that the effects of tax policy differences are substantially diminished by the ownership of non-taxable investors. As such, we do not consider tax differences to be a significant factor contributing to the difference between equity returns in U.S. and Canada.

[30] For a description of cross-border taxation of dividends, *see*, Susan E.K. Christoffersen, et al., "Crossborder dividend taxation and the preferences of taxable and nontaxable investors: Evidence from Canada," *Journal of Financial Economics*, August 24, 2004.

VI. COMPETITION FOR CAPITAL IN CANADA VERSUS THE U.S.

A company's access to capital is a key consideration in setting a fair return. Without access to capital (at reasonable cost rates), a utility would be challenged to maintain its basic systems, and ultimately system integrity would be jeopardized, let alone any future capital expansion plans. Companies obtain capital in a variety of ways, through debt or equity issuances, or in the form of equity infusions from their parent. Regardless of where capital is coming from, there is a cost for providing that capital that compensates either the creditor, the investor, or the parent for the risk they take on in providing capital to the entity, and that compensation should be no less than what could be received by an alternative investment target of comparable risk.

This section of the report examines whether capital for utility investment between the Canadian and U.S. markets is integrated, and whether Canadian companies must compete with U.S. companies for capital. To answer this question, consideration has been given to three primary questions: (1) Are there fundamental differences between the securities markets of the U.S. and Canada that would result in corresponding differences in the countries' required returns? (2) Do the investment bases in U.S. and Canadian utilities suggest that the markets are integrated? (3) Is capital migrating to jurisdictions with the higher returns? In the following section, those questions will be analyzed and discussed.

INTERNATIONAL MARKET RETURN ON EQUITY – CANADA VS. U.S.

Morningstar, Inc. (formerly Ibbotson Associates) identifies several methods for determining the international cost of capital, highlighting differences between countries. Of those methodologies described by Morningstar, five are employed below to ascertain if there are fundamental differences in the required returns between Canada and the U.S. that are attributable to the countries' equity markets. Such differences would address inflation, political risk, exchange rate risk, and other macroeconomic factors.

The first methodology employed is the "International CAPM". Morningstar states that the principles of the CAPM can also be applied to the international market. The definition of the market portfolio can be expanded to include the equity markets of all countries of the world. Morningstar's International CAPM model uses the country specific risk free rate and Beta, and uses

an equity risk premium calculated on a worldwide basis.[31] Beta is estimated using the world equity market as the benchmark. Morningstar determined the world equity risk premium to be 7.73 percent, and the Betas for the U.S. and Canada are determined to be 0.99 and 0.96, respectively.[32] Using both countries' 12-month average respective 30-year government bonds for the risk free rate results in country specific ROEs of: [33]

U.S. CAPM = 4.84 + 0.99 (7.73) = 12.41%
Canada CAPM = 4.31 + .96 (7.73) = 11.73%

An alternative approach utilizes country specific equity risk premia, albeit developed over a shorter period of time (1970-2005) than the preferred dataset (1926 – 2006). Expressed in local currency, the equity risk premia are 3.71 for Canada and 4.75 for the U.S. over this period (and notably lower than the longer term risk premia measured, as cautioned by Morningstar). Applying the country specific risk premia to long bonds in each country's currency yields the following results:[34]

U.S. CAPM = 4.84 +4.75 = 9.59%
Canada CAPM = 4.31 + 3.71 = 8.02%

Another approach to estimating the required return in international markets, put forward by Morningstar, is the "Country Risk Rating Model", which takes into account a forward-looking measure of risk for alternative markets. This approach uses a linear regression model on a sample of returns as the dependent variable and the natural log of country credit ratings as the independent variable. This analysis indicates that the U.S. required equity return should be 16 basis points lower than that of the Canadian return, based upon the relationship of the relative country credit rating and historical returns:

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31 Morningstar relied upon the Morgan Stanley Capital International (MSCI) world index as a proxy for world markets; *see* SBBI Morningstar 2007 Yearbook, Valuation Edition, at p. 178.

32 SBBI Morningstar 2007 Yearbook, Valuation Edition, at p. 179.

33 Taking the average monthly bond yield for the preceding 12 months, results in 12 month average 30-year yields of: Canada 4.31% and the U.S. 4.84%; taking comparable averages of the 10year yields results in Canada 4.27% and U.S. 4.63%. Current spot yields for both bonds have moved lower in both countries.

34 SBBI Morningstar 2007 Yearbook, Valuation Edition, at p. 176.

U.S. credit rating = 94.5, U.S. required equity return = 10.60%[35]

Canada credit rating = 93.7, Canadian required equity return = 10.76%[36]

Yet another approach to estimating the international required return on equity, according to Morningstar, uses a spread methodology, between countries. This approach adds a country specific spread to a cost of equity determined from more conventional means. The spread between long term government bonds is added or subtracted to the U.S. cost of equity estimate obtained through a normal CAPM assuming a market Beta of 1.00. This approach results in a 53 basis point spread, where the U.S. long term government bond is 53 basis points above its Canadian counterpart:

U.S. Required Equity Return = 4.84 + 1 (7.13) = 11.97%

Spread = U.S. 30-Year Treasuries – Canada Long Bond = 4.84% - 4.31% = 0.53%

Canadian Equity Return = 11.97% - .53% = 11.44%

The last of the methodologies proposed by Morningstar is a "Relative Standard Deviation Model". In this model, the standard deviation of international markets is indexed to the standard deviation of the U.S. market. Countries with higher standard deviations than the U.S. are given a higher equity risk premium in proportion to their relative standard deviation. Morningstar's study indicates that the Canadian standard deviation relative to the U.S. market is 1.25[37]; hence Canada's risk premium should be the product of the U.S. risk premium and the Canada/U.S. index, or 7.13 x 1.25 = 8.91. This increased risk premium would yield a higher Canadian return than that in the U.S. by 125 basis points (13.22 percent - 11.97 percent), derived below:

U.S. Required Equity Return = 4.84 + 1 (7.13) = 11.97%

Canadian Required Equity Return = 4.31 + 1(8.91) = 13.22%

The five Morningstar approaches identified above are summarized below in Table 19:

35 SBBI Morningstar 2007 Yearbook, Valuation Edition, at p. 181.

36 Ibid.

37 Ibid., at p. 183.

Table 19: International Cost of Capital Summary

MORNINGSTAR METHODOLOGY	U.S. RETURN	CANADIAN RETURN	DIFFERENCE
International CAPM	12.41 %	11.73%	0.68%
Country Specific Risk Premia	9.59 %	8.02 %	1.57%
Country Risk Rating Model	10.6%	10.76%	(0.16%)
Country-Spread Model	11.97%	11.44%	0.53%
Relative Standard Deviation Model	11.97%	13.22%	(1.25%)
Average	11.30%	11.03%	0.27%

Source: SBBI Morningstar 2007 Yearbook, Valuation Edition

As Table 19 indicates, the five international cost of capital methodologies yield diverse results depending on the drivers of the methodology employed (*i.e.*, bond yields or relative risk metrics), with results ranging from a Canadian required return exceeding the U.S. return by 125 basis points, to a U.S. required return exceeding the Canadian return by 157 basis points. The average of all approaches indicates a 27 basis point differential, reflecting a nominally higher cost of equity in the U.S. These results are not surprising, given the difference between U.S. and Canadian bond yields, averaging 53 basis points over the recent 12-month period measured here. Higher U.S. bond yields are partially offset by the increased relative risk of Canadian returns (as determined under these methodologies).[38] As a result, there do not appear to be determinative market differences between the U.S. equities market and the Canadian equities market at this time to justify any sustained differences in required returns on equity.

In a 2002 study performed by Dimson, Marsh and Staunton, the authors indicate that when deriving a forward looking projection of required return on equity from a purely historical estimate of the risk premium, it is necessary to "reverse-engineer" the facts that impacted stock returns over the past 102 years, backing out factors that could not be anticipated to be recurring in the future, such as unanticipated growth or diminished business risk through technological advances. To this point, the authors state:

[38] According to the Country Risk Rating Model and the Relative Standard Deviation Model Canadian returns should be higher than those of the U.S. Consideration of the lower Canadian bond yield in the International CAPM Model and the Country-Spread Model, indicates that Canadian returns should be lower than U.S. returns. As such, it appears that the higher risk of Canadian returns as evidenced by the credit rating and standard deviation of Canadian returns is mitigated by the lower bond yield relative to that of the U.S.

> While there are obviously differences in risk between markets, this is unlikely to account for cross-sectional differences in historical premia. Indeed much of the cross-country variation in historical equity premia is attributable to country-specific historical events that will not recur. When making future projections, there is a strong case, particularly given the increasingly international nature of capital markets, for taking a global rather than a country by country approach to determining the prospective equity risk premium…
>
> ...Indeed it is difficult to infer expected premia from any analysis of historical excess returns. It may be better to use a "normal" equity premium most of the time, and to deviate from this prediction only when there are compelling economic reasons to suppose expected premia are unusually high or low.[39]

The current difference between Canadian and U.S. long-term bond yields is informative at least in part in understanding the recent differences in authorized ROEs in the U.S. and Canada. Historically, however, as discussed below, these bond yields have been highly correlated, and based on historical performance, the current spread may not be sustainable.

BOND YIELDS

The correlation between the Canadian and U.S. Treasury bonds was noted by the NEB in its decision establishing an ROE formula for NEB-regulated pipelines. "[T]he Board is of the view that inflationary expectations in the U.S. are likely to put upward pressure on U.S. interest rates. This, in turn, is likely to exert upward pressure on Canadian interest rates."[40]

While the spread between Canadian and U.S. long-term bond yields has averaged three and two basis points over the past five and ten-year periods, respectively (with Canadian bond yields exceeding U.S. yields, on average), Canadian bond yields decreased relative to U.S. bond yields during 2007.

[39] Elroy Dimson, Paul Marsh and Mike Staunton, Global Evidence on the Equity Risk Premium, Copyright September 2002.
[40] National Energy Board, Reasons for Decisions, RH-2-94, March 1995, at p. 6.

As of February 1, 2008, the following bond yields were in effect:

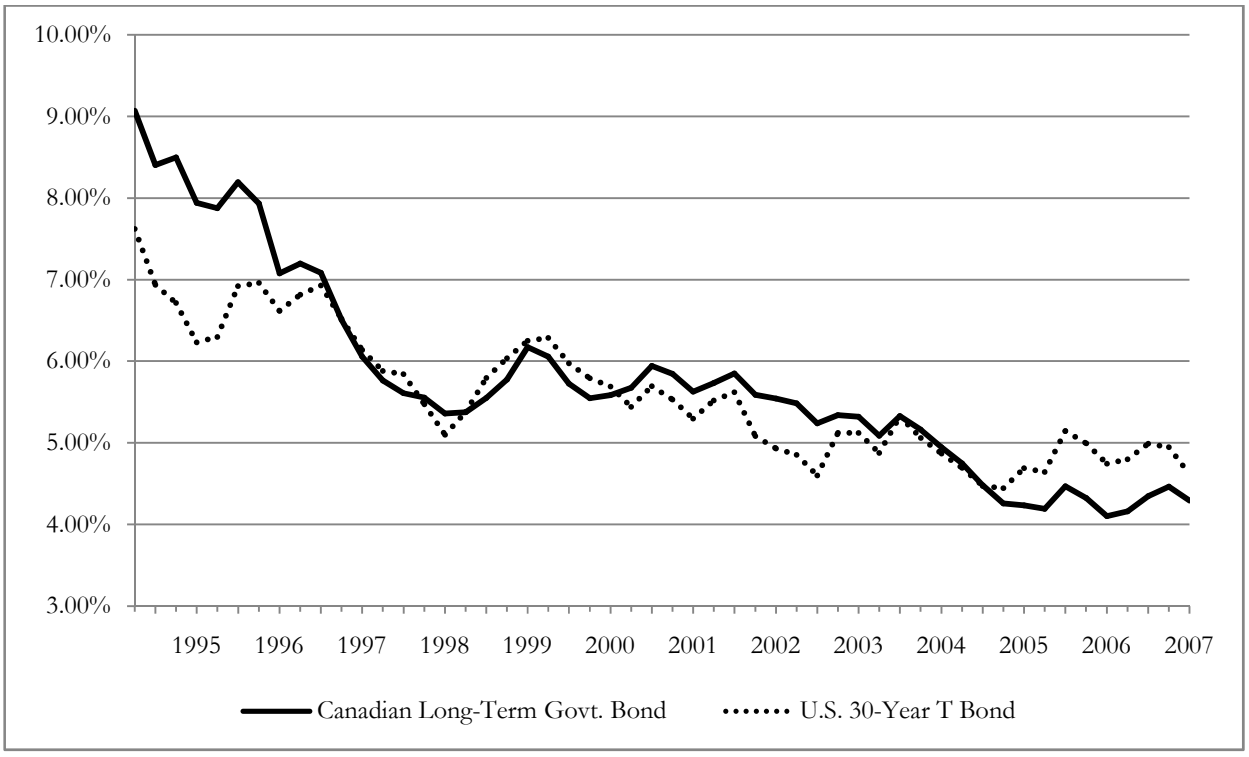
Table 20: U.S. and Canadian Long Term Bond Yields

	U.S.	CANADA	DELTA
10-year	3.59	3.88	.29
30-year (or Canadian "Long Bond"	4.31	4.18	(.13)

Sources: Bank of Canada and Bloomberg

The 30-year bond in Canada is still 13 basis points below that in the U.S., but the Canadian 10-year bond is 29 basis points higher. Inasmuch as 30-year U.S. bond yields have been higher in each of the past two years, this can account for some of the current difference in ROEs between Canada and the U.S. Based on the long bond yields, this would explain a 36 basis point difference in 2007 for example. However, as the two yields have historically been very highly correlated, with a minimal spread between them, the difference in yields may not persist over the long run.

Chart 12: Comparison of Yields on the Canadian Long-term Bond Vs. the U.S. 30-Year Bond



Sources: Bank of Canada and Bloomberg)

INVESTOR BASE OF CANADIAN UTILITIES

Concentric has found evidence that there is a high degree of integration of the capital markets between the U.S. and Canada, though there appears to be evidence of a "home country" preference for investors, in that investors tend to seek investments in their home countries before investing abroad, using foreign holdings as a means of balancing portfolios. This may be due to an outright preference to invest within the home country, tax policies that favor domestic investment, greater knowledge and equity analyst coverage of in-country companies, and reluctance on the part of the investor to invest in unfamiliar territory. Nonetheless, there is substantial institutional investment flowing across borders.

For example, according to a December 2003 CGA study, the average pension fund in Canada was invested 56 percent in equities and 44 percent in debt and other instruments, or roughly 60 percent equity and 40 percent debt. The assumed asset allocation was 35 percent Canadian equities, 12.5 percent U.S. equities, 12.5 percent International equities, and 40 percent bonds.[41]

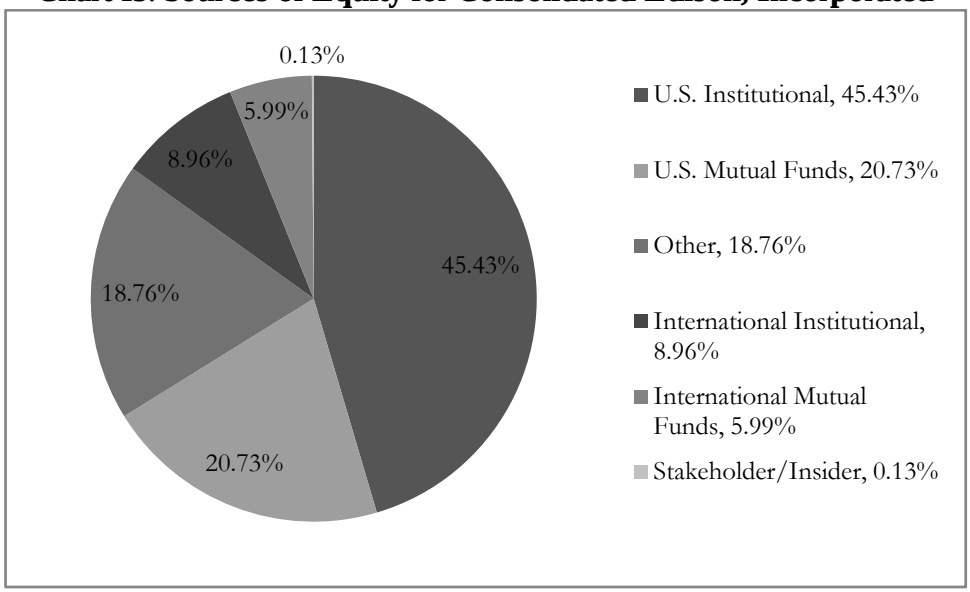
Examining the capital sources for a few representative U.S. and Ontario utilities lends some perspective to this matter. HydroOne and Toronto Hydro are capitalized with a mix of equity, short-term and long-term debt. We presume that the equity is sourced from its respective owners, the Province of Ontario and the City of Toronto. We further presume that debt is sourced primarily through Canadian banks. This is not to say, however, that the Province, City, HydroOne, Toronto Hydro and their lenders are not sourcing their capital needs from a mix of international investors. In a prior analysis of Enbridge (*see* Chart 11), Concentric found that 75 percent of Enbridge Inc.'s equity investors were Canadian. However, the U.S. share of investment was still significant at 19 percent of Enbridge's investor base. It is worthy to note that U.S. investors do play a significant role in the capitalization of Canadian companies. Even though the U.S. share is a minority, one could argue that in order to attract this incremental capital, Canadian companies are competing on the margin for the same capital as U.S. electric utilities.

Looking at two U.S. utilities (Charts 13 and 14), Consolidated Edison and PG&E, we find that these utilities are capitalized with a mix of 10-15 percent international equity from institutional sources,

[41] Andrews, Doug, An Examination of the Equity Risk Premium Assumed by Canadian Pension Plan Sponsors, July 2004, at p. 4.

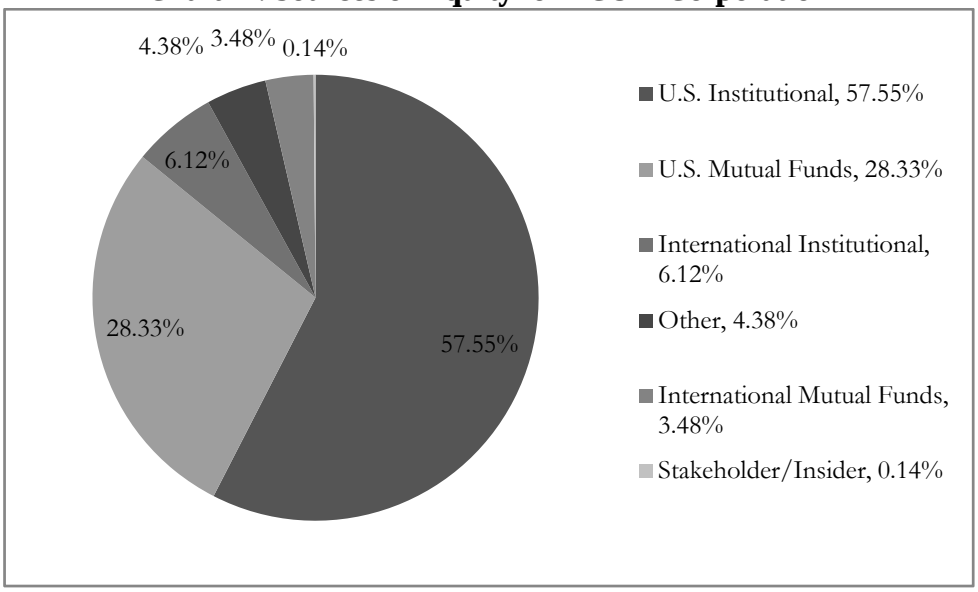
slightly lower than what we found for Enbridge. On balance, this suggests a decided home country preference among utility investors, leaving room for required returns for one market that can diverge from those in another. However, we would also expect that competition for incremental capital in both markets would eventually narrow these spreads to those differences justified by business or country-risk fundamentals.

Chart 13: Sources of Equity for Consolidated Edison, Incorporated



Sources: SNL Financial

Chart 14: Sources of Equity for PG&E Corporation



Sources: SNL Financial

MIGRATION OF CAPITAL ACROSS U.S. AND CANADIAN BORDER

The question remains, if there is a fluid cross-border flow of capital between the Canadian and the U.S. markets, how is it that Ontario utilities are not required to meet U.S. higher returns to attract capital in Ontario? Through research conducted by Concentric, as well as analysis of the factors

discussed above, there are several explanations why these ROE differentials may exist without loss of capital: (1) the home country preference of investors and tax policies that promote domestic investment; (2) imperfect information regarding investment options; (3) the prevalence of public ownership of Canadian utilities; (4) Canadians perceive the U.S. regulatory environment to be riskier than the Canadian regulatory environment; and (5) investors in utilities tend to be long-term focused and recognize the reciprocity of the ROE adjustment mechanism.

On the issue of home country preference, the average Canadian retail investor may not invest across the border to the U.S., despite the fact that returns might be higher. As discussed earlier in this report, Canadian individual investors lose valuable tax benefits by investing abroad. Further, pension funds have various internal restrictions that limit investment in foreign nations, to keep jobs and income in Canada. As such, large investors such as pension funds and mutual funds have prescribed investment levels in foreign markets.

On the second point, although market theory and financial market principles are founded on the assumption of "perfect information", the reality is that investors have access to imperfect information regarding their investment options. An investor, especially individual investors, may not be aware of the full range of utility investment options available to them and choose the "buy and hold" strategy, even when superior investment options may be available.

On the third point, it is important to note that Ontario's electric utilities are largely municipally owned. The equity investor, in this case, is the government and its citizens. Governments may view the cost of capital through a very different lens than a private investor. Even though one of the OEB's guiding principles for restructuring was that electric utilities should be "put on a commercial footing consistent with other commercial businesses operating in Ontario", including a "fair rate of return on the total capital employed", the municipal owner of the utility is essentially negotiating a fair rate of return before another government agency, where many trade-offs between rates and other social objectives may play out. For example, the four year rate freeze adopted under the Electricity Pricing, Conservation and Supply (EPCS) Act of 2002 placed the welfare of consumers amid rising electric prices over and above concerns for annual cost of capital adjustments. In a business dominated by private equity investors, such trade-offs present a greater challenge.

To the fourth point of relative risk between the Canadian and the U.S. regulatory environments, there have been several well chronicled examples that may give Canadian investors reason to believe Canadian utilities are less risky. The California energy crisis and evolving regulatory structures in the U.S. no doubt factor into perceptions of the relative risk of U.S. and Canadian utilities. Another potential factor is the protection afforded by the OEB to enable the utility to actually earn the authorized return. Concentric's analysis shows far greater latitude among U.S. utilities, both upside and downside, around allowed vs. earned returns. Nothing was identified in this analysis to justify a differential between U.S. and Canadian returns on the basis of relative risk. Nonetheless, Canadian investors may perceive greater risk in investing in a U.S. utility versus that of a Canadian utility, and prefer to hold investments in their home country, where they believe returns are currently low but are not subject to the same risks of non-recovery as those of U.S. returns. Debt investors are more concerned with the security of their investments and overall credit quality of the enterprise, and do not share the same perspective as an equity investor. Senior debt takes priority over equity returns in the utility cash waterfall.

Lastly, with respect to the long-term nature of utility investments, both equity and debt investors recognize that the regulator is largely in the driver's seat in this relationship, relying on principals of a fair return in setting allowed returns. Market participants also recognize the symmetrical nature of the OEB adjustment mechanism and that interest rates are at historical lows and eventually will rebound. While Concentric did not perform an analysis of the effect of allowed returns on the financial integrity of regulated utilities or on customers' rates, we do note that, all else being equal, at extremely low interest rates and correspondingly low returns, unexpected earnings variations (i.e., deviations from those conditions that would have been anticipated when setting rates) will generally have a more pronounced effect on the financial condition of the utilities, as those deviations would be applied to a smaller earnings base. Accordingly, in an extreme low (or high) interest rate environment (i.e., at those points in which the ROEs in Canada and the U.S. would most greatly diverge), further consideration is warranted to assess whether the allowed return is consistent with the established standards.

VII. COMPETITION FOR CAPITAL FOR STAND-ALONE COMPANIES VERSUS SUBSIDIARIES

In general, subsidiaries of larger corporations compete for capital in much the same way that stand-alone entities would. Specifically, investment decisions at the parent level involve seeking a certain amount of return for a given amount of risk, much the same as investment decisions are made by investors when buying stakes in stand-alone companies or purchasing assets. Inasmuch as one subsidiary can provide a better return to the parent than another subsidiary of comparable risk, it is reasonable to assume the parent would prefer to invest in the more profitable company, all else being equal.

One important distinction, however, between stand-alone and subsidiary investments is the difference in relative liquidity of the investments. A parent company may have to accept lower returns from a subsidiary than it would demand from "outside", or third party, investments, especially if the parent has no easy, cost-effective method for exiting the business. A utility parent company is not going to let a subsidiary flounder because its regulator offers substandard returns. In some ways, this effect is compounded for a utility company, in that it must maintain safe, dependable operations. However, a parent company would most likely seek to minimize additional capital investment in its underperforming subsidiary if a more attractive return were available elsewhere. This is, perhaps, the greatest risk of sustained rates of return that are not sufficient to attract needed sources of incremental capital.

In section V, we observed in the U.S. and Canada electric utility regression analyses, that affiliate utilities earn a lower return than their less-affiliated or stand alone counterparts in the range of approximately 10 – 20 basis points. This may be due in part to the regulators' perception of the relative risk of an affiliated company versus a stand-alone company, or a reflection of scale in setting the return.

Lastly, affiliated companies can generate certain types of tax savings that stand-alone entities cannot. These tax savings can materialize in the form of one affiliated company being able to offset its taxable income with a loss from the operations of another affiliate. It is important to realize,

however, that these tax savings do not affect the relative risk of the individual affiliated companies, and there is much debate as to the degree that these savings can and should affect the cost of capital at the subsidiary level.[42]

[42] Please note that Concentric is not offering an opinion regarding the issue of consolidated taxes as it pertains to utility rate-making in this report.

VIII. CONCLUSIONS AND SUMMARY OF FINDINGS

Based on the foregoing analyses, Concentric's general conclusions are as follows:

1. Ontario's electric utilities have authorized ROEs slightly higher than those elsewhere in Canada (40 basis points higher), but well below those allowed in the U.S. (150 basis points below). Ontario's 2007 authorized return would have been 65 basis points lower by applying the ROE formula in 2007, in place of the 9.00 percent fixed return authorized for 2006 and 2007, increasing the gap from U.S. returns (215 basis points below). Likewise, if the ROE formula had been applied in Ontario for 2007, the difference between Ontario and the other Canadian utilities' ROEs would have reversed (25 basis points below).
2. In developing a regression model that combines the effects of Canadian and U.S. regulatory approaches to ROE, assigning a common coefficient to U.S. and Canadian company attributes; a 184 basis point differential remains between the U.S. and other Canadian provinces; and a 158 basis point differential remains between the U.S. and Ontario's utilities, that cannot be explained by the fundamental differences in interest rates and common company attributes.
3. While the ranges of ROEs in Canada and the U.S. overlap at the margin, allowed returns in the U.S. are generally dispersed over a wider spectrum than in Canada. Ontario's ROEs are below all U.S. authorized ROEs in the study.
4. Ontario's utilities have lower allowed equity ratios than U.S. companies. The median utilities' equity percentage is 40 percent, 7 percent lower than the median U.S. utility, but comparable to other Canadian electric utilities. In general, financial theory would suggest that as equity ratios decrease, the cost of equity increases, which does not hold true in this cross-border comparison.
5. Actual ROEs in Ontario and Canada are closer to the authorized levels than in the U.S. This lower variability in return may be, in part, due to the greater frequency of rate adjustments inherent in the annual formulaic rate adjustments.
6. In contrast to the other Canadian utilities, Ontario's utilities have comparable ROEs, allowed equity ratios, and credit ratings. To the positive from a business risk standpoint, Ontario's utilities have higher interest coverage ratios, comparable capital expenditures and less industrial load. These advantages may be offset by Ontario utilities' smaller size.

7. In contrast to the U.S. group, the Ontario utilities have lower ROEs, less allowed equity, higher credit ratings despite lower interest coverage, comparable capital expenditures, more industrial load exposure and are significantly smaller. These comparisons point in different directions from an ROE perspective. All else being equal, the lower equity ratio (and more debt), greater industrial exposure, lower interest coverage and smaller size should imply a higher ROE. Pointing in the other direction, the higher credit rating would tend toward a lower ROE. On balance, these data would not explain the observed differences between the allowed ROEs, and they do not suggest material differences that would render U.S. utilities significantly more risky than their Canadian counterparts.
8. The OEB's formulaic adjustment factor of .75 is significantly more sensitive to changes in interest rates than is suggested by regression results based on U.S. data. The difference in the interest rate sensitivity of each, the U.S. regression model and the Ontario adjustment mechanism, help explain the recent disparity between U.S. authorized returns and Ontario authorized returns. The OEB ROE adjustment mechanism, however, is reciprocal; as interest rates recover ROEs will rise at a faster rate in Ontario than in the U.S. Ontario authorized returns could eventually surpass U.S. authorized returns.
9. Through our research, Concentric has identified a strong positive historical relationship between long-term Canadian Bond yields and Canadian authorized returns. The ROE adjustment formula employed by the OEB reflects this historical relationship. While Concentric did not perform an analysis of the effect of allowed returns on the financial integrity of regulated utilities or on customers' rates, we do note that, all else being equal, at extremely low interest rates and correspondingly low returns, unexpected earnings variations (*i.e.*, deviations from those conditions that would have been anticipated when setting rates) will generally have a more pronounced effect on the financial condition of the utilities, as those deviations would be applied to a smaller earnings base. Accordingly, in an extremely low (or high) interest rate environment (*i.e.*, at those points in which the ROEs in Canada and the U.S. would most greatly diverge), further consideration is warranted to assess whether the allowed return is consistent with the established standards. This may require the consideration of additional qualitative and financial metrics in making the ROE determination.

10. On the whole, there are no evident fundamental differences in the business and operating risks facing Ontario utilities as compared to those facing U.S. companies or other provinces' utilities that would explain the difference in ROEs.
11. Other market related distinctions and resulting financial risk differences, particularly between Canada and the U.S., do exist. These factors, including differences in ownership structure, taxation policies, market structure, investor bases, regulatory environments, and other economic factors have an impact on required returns. Over time, we would expect the integration of U.S. and Canadian capital markets, and the utility industry, to narrow these differences.
12. As a result of the interplay between the Canadian and U.S. markets, publicly traded Canadian companies compete for capital essentially on the same basis as publicly traded companies in the U.S.
13. Concentric concludes that stand-alone companies compete for capital just as subsidiaries of larger holding companies do, as the latter must compete among their affiliates for parental investment. Nonetheless, the parental obligation to invest necessary capital to maintain system integrity will typically provide the wholly owned subsidiary sufficient capital to sustain operations, where no such provision exists for standalone utilities as external investors have no similar obligation to invest. Thus, one could argue that subsidiaries enjoy the benefit of more patient capital, but over time, the equity returns must ultimately reward the parent for investments of comparable risk. Concentric observed through our analysis that regulators tend to authorize slightly lower returns (10 to 20 basis points) for utilities that operate in an affiliated holding company structure.
14. Ultimately, Concentric finds the gap between allowed ROEs for Ontario's utilities and their U.S. peers can be attributed to the following factors:
    - The use of an ROE formula tied exclusively to government bonds over a period of time when bond rates have moved steadily downward (although the same result, with a gap in the opposite direction, might be expected with steady increases in bond rates);
    - The recent divergence between U.S. and Canadian bonds;
    - Municipal ownership of Ontario's utilities, where competition for capital is not subjected to a true private capital market test;

- The OEB has widely been recognized as a supportive regulator and there is little concern on the part of investors that the OEB would allow its electric utilities to fall into financial distress;
- While cross border capital flows are efficient, municipal utility owners in Ontario are not likely to pursue alternative investments.

As long as the ownership structure of Ontario's electric utility industry remains largely in the government sector, these differences in returns are sustainable, but may be reversed with a prolonged upward trend in interest rates. Given the greater penetration of private capital among gas utilities, and the existence of a comparable ROE gap vs. U.S. utilities[43], one must assume that Canadian and U.S. utility returns may diverge, and remain so for some time. Initiatives aimed at privatization of the electric sector will, in all likelihood, be slowed by these ROE differentials, and prices received in a sale or public stock offering would reflect lower valuations. The rate of capital reinvestment would also be impacted, with fewer equity-return dollars to plow back into the business. The final trade-off is the wealth transfer between electric ratepayers and taxpayers. If rates are set lower than private market based rates, customers benefit with lower electric bills (or greater consumption). The reduced "earnings" from utility operations must presumably come from another source, such as property or income taxes, so taxpayers (that may or may not be the same in identity or usage levels) pay higher rates to offset the lower electric rates. This is probably not a zero sum game, and could send distorted price signals to electric consumers.

It was not within the scope of this report to develop or recommend specific policy actions, but we would endorse an examination of the issues discussed above, and the consistency of existing rate policies with the overarching public and energy policies of the Province.

[43] See Concentric's June 14, 2007 report on this topic.

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APPENDIX A
DISCUSSION OF SIGNIFICANT ROE DECISIONS IN CANADA AND THE U.S.

The United States Supreme Court's precedent-setting *Hope* and *Bluefield* decisions established the standards for determining the fairness and reasonableness of a utility's allowed return on common equity. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; and (2) adequacy of the return to support credit quality and access to capital.

The *Hope* and *Bluefield* cases read, in pertinent part:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be adequate, under efficient and economic management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.[44]
>
> Rates which are not sufficient to yield a reasonable return on the value of the property used at the time it is being used to render the service are unjust, unreasonable and confiscatory…[45]
>
> From the investor or company point of view, it is important that there be enough revenue not only for operating expenses, but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[46]

The Supreme Court of Canada in *Northwestern Utilities vs. City of Edmonton* established a similar definition of fair return. As stated by Mr. Justice Lamont in that case:

> The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital

[44] Bluefield Waterworks & Improvement Company v. Public Service Commission of West Virginia, 262 U.S. 679, 1923, at 692-693 ("Bluefield").
[45] Id., at 690-692.
[46] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591, 1944, at 603 ("Hope").

> invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise…[47]

The standards set out in these court cases are endorsed and used by the Federal Court of Canada and the NEB.[48] In its December 1971 Decision, the NEB concluded as follows in respect of the framework for consideration of an appropriate rate of return for TransCanada:

> The Board is of the opinion that in respect of rate regulation, its powers and responsibilities include on the one hand a responsibility to prevent exploitation of monopolistic opportunity to charge excessive prices, and equally include on the other hand the responsibility so to conduct the regulatory function that the regulated enterprise has the opportunity to recover its reasonable expenses, and to earn a reasonable return on capital usefully employed in providing utility service. Further, it holds that to be reasonable such return should be comparable with the return available from the application of the capital to other enterprises of like risk. The Board accepts that, with qualifications, the rate of return is the concept perhaps most commonly used to project for some future period the ratio of return which has been found appropriate for the capital employed usefully by a regulated enterprise in providing utility service in a defined test period. The expectation is that, pending major changes, that ratio will provide a return, notwithstanding changes in the amount of capital invested, which will be fair both from the viewpoint of the customers and from the viewpoint of present and prospective investors.

An example of how the NEB describes their utilization of the fair return standard is seen in the RH-2-2004 (Phase II) proceeding.[49]

> The Board is of the view that the 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).[50]

---

47 Northwestern Utilities v. City of Edmonton [1929] S.C.R. 186 (NUL 1929)

48 *See* TransCanada PipeLines Limited v. Canada (National Energy Board), [2004] F.C.A. 149, paragraphs 35 and 36; AO-1-RH-1-70 Reasons for Decision, pp. 6-6 through 6-9; RH-4-2001 Decision, pages 10-12.

49 Reasons for Decision, TransCanada PipeLines Limited, RH-2-2004, Phase II, April 2005, Cost of Capital.

50 Id., at p. 17.

CAPITAL STRUCTURE

The U.S. Supreme Court and various utility commissions have long recognized the role of capital structure in the development of a just and reasonable rate of return for a regulated utility. In particular, a utility's leverage, or debt ratio, has been explicitly recognized as an important element in determining a just and reasonable rate of return:

> Although the determination of whether bonds or stocks should be issued is for management, the matter of debt ratio is not exclusively within its province. Debt ratios substantially affect the manner and cost of obtaining new capital. It is therefore an important factor in the rate of return and must necessarily come within the authority of the body charged by law with the duty of fixing a just and reasonable rate of return.[51]

The NEB, in the RH-2-94 Multi-Pipeline Cost of Capital Decision, established the ROE for a benchmark pipeline to be applied to all pipelines in that hearing. It then determined that any risk differentials between the pipelines could be accounted for by adjusting the common equity ratio.[52]

The NEB stated that, "case law establishes that it is the overall return on capital to the company which ought to meet the comparable investment, financial integrity and capital attraction requirements of the fair return standard." Yet they indicated that this does not in the NEB's view, "require that the Board make the necessary determinations solely by means of examining evidence on overall return."[53]

[51] New England Telephone & Telegraph Co. v. State, 98 N.H. 211, 220, 97 A.2d 213, 1953, at 220-221 citing New England Tel. & Tel. Co. v. Department of Pub. Util., (Mass.) 327 Mass. 81, 97 N.E. 2d 509, 514; Petitions of New England Tel. & Tel. Co. 116 Vt. 480, A.2d 671 and Chesapeake & Potomac Tel. Co. v. Public Service Comm'n, (Md.) 201 Md. 170, 93 A..2d 249, 257.

[52] RH-2-94, at p.25.

[53] Reasons for Decision, TransCanada PipeLines Limited, RH-2-2004, Phase II, April 2005, Cost of Capital, at p. 19.

APPENDIX B
LISTING OF COMPANIES STUDIED AND DATA COLLECTION PROCESS

Concentric's sample of U.S. electric utility companies used for this Study was drawn from the SNL Financial LC ("SNL") database. This database provides access to all publicly available information from annual reports, quarterly reports, Federal Energy Regulatory Commission ("FERC") filings and state utility commission filings.

To obtain the sample of 55 unique companies, and the associated 148 data points, Concentric first extracted all investor owned electric utilities (including parent companies and their operating subsidiaries) from the database. This resulted in an initial group of 219 companies. That group was narrowed to exclude companies operating in multiple states, as Concentric's analysis has focused on the financial and operational characteristics of a subject company, associated with a specific ROE award. Cases where the company operated in multiple jurisdictions; and thus had multiple ROEs associated with it, but where only consolidated financial information was available; *i.e.* there was inadequate financial information at the state level, the subject company and its operating subsidiaries were eliminated from consideration. Of the original 219 companies, 103 electric or diversified utility companies remained. For those companies, Concentric gathered financial and operating data for the years 2005 through 2007 (2007 figures are year-to-date as of September 30, 2007).

Concentric then gathered ROE data for electric utilities, authorized in the United States since 1989, from Regulatory Research Associates ("RRA"), a division of SNL. The ROE data yielded 135 unique electric companies (at the operating subsidiary level). After matching the ROE awards with the same companies' financial and operating data (at the state level), Concentric derived a dataset of 66 companies that were covered by both the SNL database and RRA. Concentric matched the ROE award to the operating and financial data for the years in which the ROE award was in effect. For example, if the most recent rate case was settled in 2006, the authorized ROE would have been applied to data in years 2006 and 2007, while the applicable ROE for 2005 could have been authorized anytime between 1989 and 2005. In certain cases, the authorized ROE was not disclosed, and consequently, the entry was excluded from the dataset. The final list of sample companies, contained in Table B1, consists of 55 unique companies, yielding 148 data points.

APPENDIX B
LISTING OF COMPANIES STUDIED AND DATA COLLECTION PROCESS

Table B1: Companies in Dataset

AEP Texas Central Company	Massachusetts Electric Company
AEP Texas North Company	Maui Electric Company, Ltd.
Aquila, Inc.	Metropolitan Edison Company
Baltimore Gas and Electric Company	Minnesota Power, Inc.
Bangor Hydro-Electric Company	Narragansett Electric Company
Central Hudson Gas & Electric Corp	New York State Electric & Gas Corp
Central Illinois Light Company	Niagara Mohawk Power Corporation
Central Illinois Public Service Company	Oncor Electric Delivery Company LLC
Central Maine Power Company	Orange and Rockland Utilities, Inc.
Cheyenne Light, Fuel and Power Company	Pacific Gas and Electric Company
Cleco Power LLC	PECO Energy Company
Columbus Southern Power Company	PPL Electric Utilities Corporation
Commonwealth Edison Company	Public Service Company of Colorado
Consolidated Edison Company of New York, Inc.	Public Service Electric and Gas Company
Consumers Energy Company	Puget Sound Energy, Inc.
Detroit Edison Company	Rockland Electric Company
Duke Energy Kentucky, Inc.	South Carolina Electric & Gas Co.
Duke Energy Ohio, Inc.	Southern Indiana Gas and Electric Company, Inc.
Entergy Louisiana Holdings, Inc.	Tampa Electric Company
Florida Power Corporation	Tucson Electric Power Company
Granite State Electric Company	United Illuminating Company
Hawaiian Electric Company, Inc.	Unitil Energy Systems, Inc.
Illinois Power Company	UNS Electric, Inc.
Kansas Gas and Electric Company	Upper Peninsula Power Company
Kingsport Power Company	West Penn Power Company
Louisville Gas and Electric Company	Western Massachusetts Electric Company
Madison Gas and Electric Company	Wisconsin Power and Light Company
Maine Public Service Company	

Concentric also gathered data for U.S. public power companies from company websites, and quarterly and annual reports. Concentric selected the 10 largest public power companies, per the American Public Power Association (http://www.appanet.org), based on revenue and customers served. Table B2 presents the list of public power companies analyzed by Concentric.

Table B2: U.S. Public Power Companies

Austin Energy	Memphis Light, Gas and Water
CPS Energy (San Antonio)	Sacramento Municipal Utility District
JEA (Jacksonville)	Salt River Project
Long Island Power Authority	Santee Cooper
Los Angeles Dept. of Power and Water	Seattle City Light

APPENDIX C
COALITION OF LARGE DISTRIBUTORS AND HYDRO ONE COMPANY PROFILES

VERIDIAN CONNECTIONS INC.

Veridian Connections, a subsidiary of Veridian Corporation, distributes electricity to over 107,000 customers in the Cities of Belleville and Pickering, the Towns of Ajax, Gravenhurst, Port Hope and Uxbridge, and the communities of Bowmanville, Newcastle, Orono, Beaverton, Cannington, Sunderland and Port Perry. Veridian Corporation is owned by four municipalities, the Municipality of Clarington, the City of Pickering, the City of Belleville and the Town of Ajax. Peak demand in 2006 reached 506.6 MW. Veridian Connections is under the jurisdiction of the Ontario Energy Board.

Veridian's rate application was filed on the basis of the Board's guidelines. In fixing new rates and charges for Veridian, the Board has applied the policies described in this Report.

APPENDIX C
COALITION OF LARGE DISTRIBUTORS AND HYDRO ONE COMPANY PROFILES

ENERSOURCE HYDRO MISSISSAUGA INC.

Enersource Hydro Mississauga is a subsidiary of Enersource Corporation. The Corporation is 90 percent owned by the City of Mississauga and 10 percent owned by BPC Energy Corporation (Borealis), a subsidiary of the Ontario Municipal Employees Retirement System. Enersource Hydro Mississauga is the local electricity distribution company for the City of Mississauga. It realizes a peak demand of 1,622 MW, while serving over 180,000 customers. The electrical system spans over 10,000 kilometers. Enersource Hydro Mississauga is regulated by the Ontario Energy Board.

Enersource's rate application was filed on the basis of the Board's guidelines. In fixing new rates and charges for Enersource, the Board has applied the policies described in this Report.

HORIZON UTILITIES CORPORATION

Horizon Utilities Corporation is the third largest municipally owned electricity distribution company in Ontario and provides electricity and related utility services to over 231,000 residential and commercial customers in Hamilton and St. Catharines. Horizon provides service to an area of 426 square kilometers. The company, which is not publicly traded, is owned by Hamilton Utilities Corporation (78.9 percent) and St. Catharines Hydro Inc. (21.1 percent) and operates out of facilities in Hamilton, St. Catharines, and Stoney Creek. Horizon Utilities is regulated by the Ontario Energy Board.

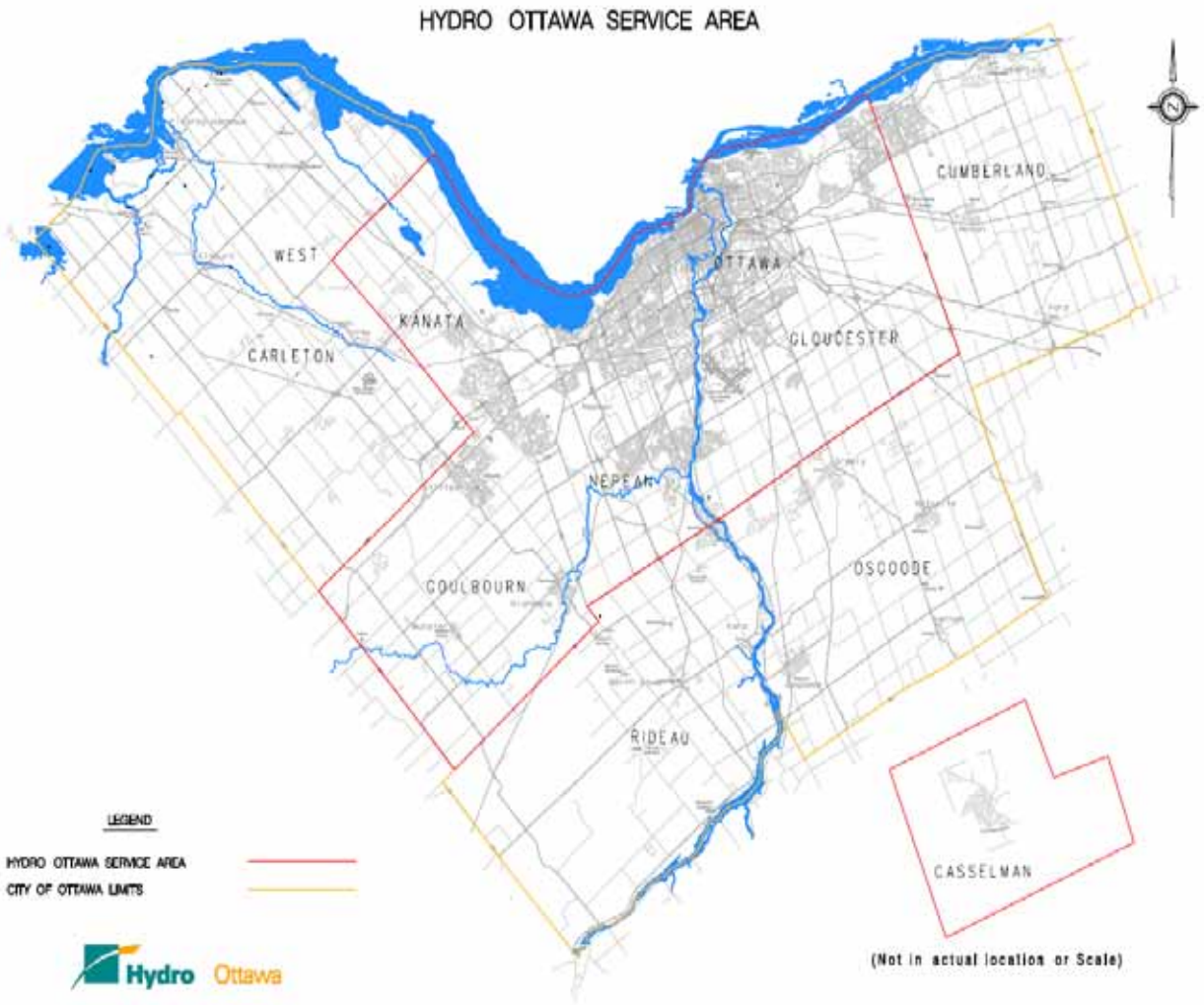
Horizon Utilities' rate application was filed on the basis of the guidelines. In fixing new rates and charges for Horizon Utilities, the Board has applied the policies described in this Report.

APPENDIX C
COALITION OF LARGE DISTRIBUTORS AND HYDRO ONE COMPANY PROFILES

HYDRO OTTAWA LIMITED

Hydro Ottawa Limited, a wholly owned subsidiary of Hydro Ottawa Holding Inc., is the second largest municipal electricity distribution company in the province. Hydro Ottawa Holding Inc. is wholly owned by the City of Ottawa. Hydro Ottawa is responsible for the delivery of electricity to more than 282,000 residential and business customers in the City of Ottawa and the village of Casselman. It covers an area of 1,104 square miles and realizes an average peak load of 1,205 MW. Hydro Ottawa services parts of the city of Ottawa as well as the Village of Casselman, which is located about 30 kilometers east of Ottawa. The company is regulated by the Ontario Energy Board.

Hydro Ottawa's rate application was filed on the basis of the Board's guidelines. In fixing new rates and charges for Hydro Ottawa, the Board has applied the policies described in this Report.

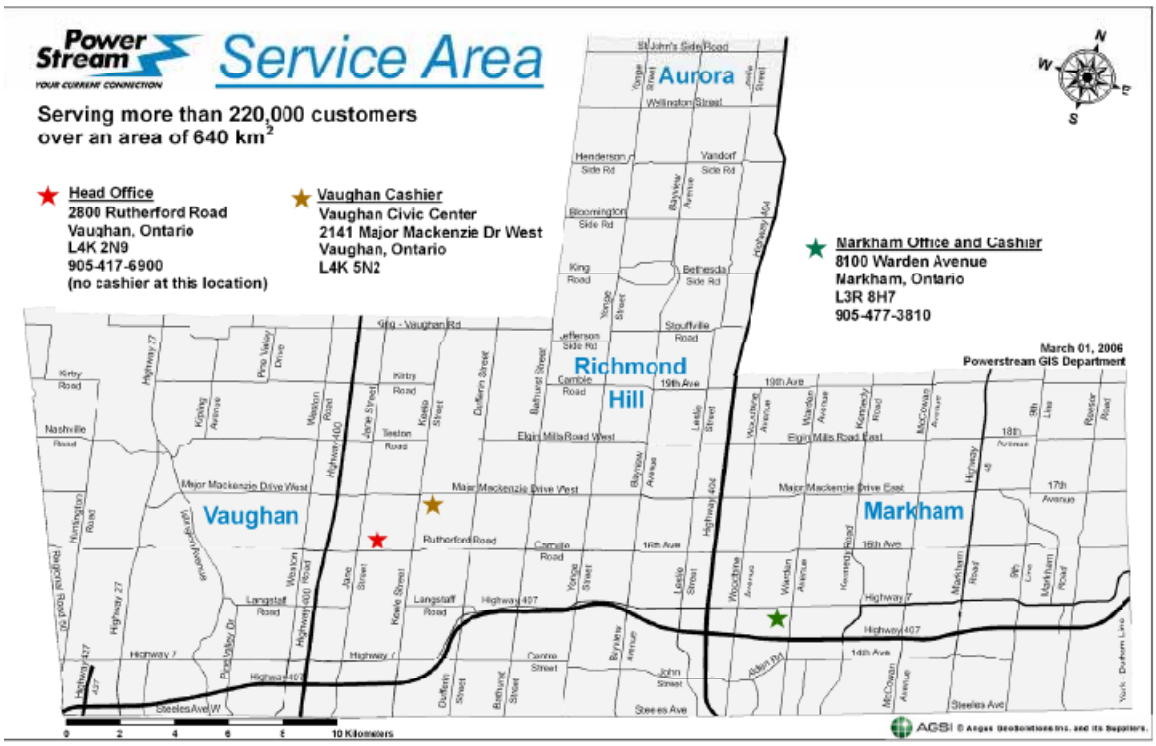


APPENDIX C
COALITION OF LARGE DISTRIBUTORS AND HYDRO ONE COMPANY PROFILES

POWERSTREAM INC.

PowerStream is the third largest local electricity distribution company in Ontario, delivering power to more than 234,000 residential and business customers in the municipalities of Aurora, Markham, Richmond Hill and Vaughan. The company is jointly owned by the City of Vaughan and the Town of Markham, serving over 640 square kilometers. PowerStream reached a peak demand of 1,577 MW in 2006. The Ontario Energy Board regulates PowerStream.

PowerStream's rate application was filed on the basis of the Board's guidelines. In fixing new rates and charges for PowerStream, the Board has applied the policies described in this Report.

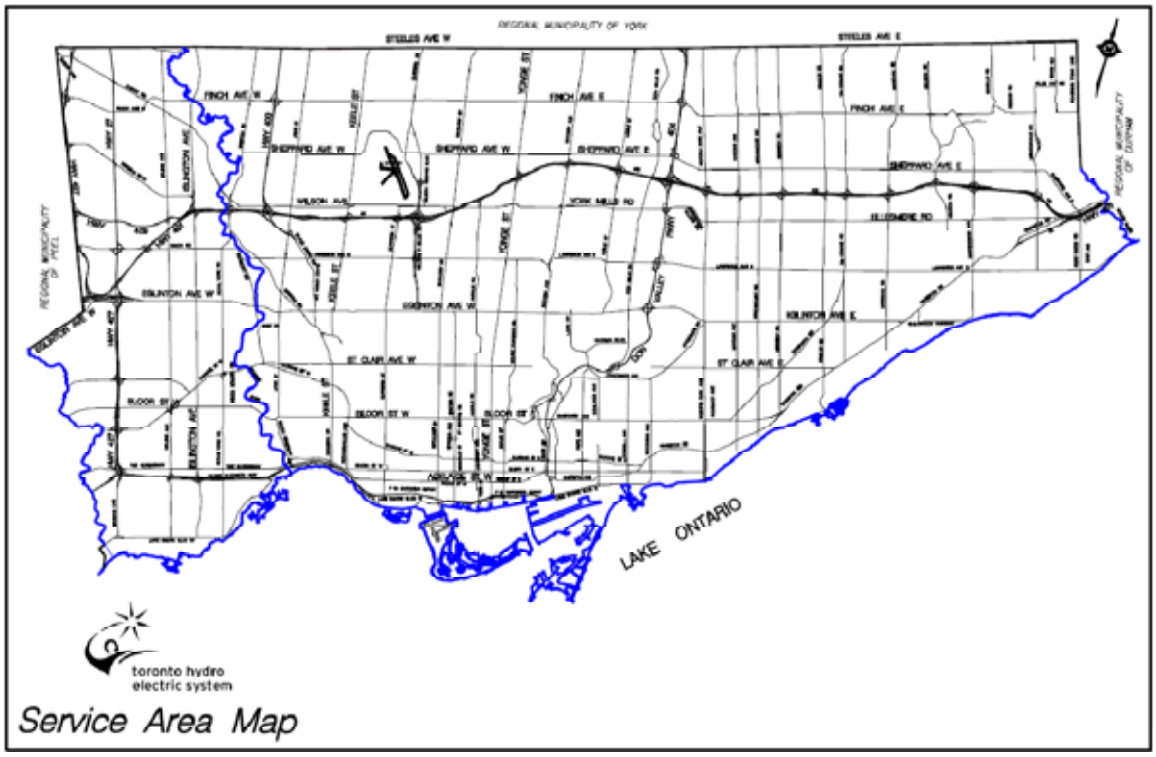


APPENDIX C
COALITION OF LARGE DISTRIBUTORS AND HYDRO ONE COMPANY PROFILES

TORONTO HYDRO-ELECTRIC SYSTEM LIMITED

Toronto Hydro-Electric System Limited is the regulated distribution affiliate of Toronto Hydro Corporation. It is the largest municipal electric distribution utility in Canada, providing power to over 676,000 residential, commercial and industrial customers. The peak load on the system was over 5,000 MW. Toronto Hydro Corporation's sole shareholder is the City of Toronto. The utility was incorporated in July 1999, when the new entity called Toronto Hydro Corporation was created. Toronto Hydro Corporation is a holding company with three subsidiaries: Toronto Hydro-Electric System Limited (the regulated company responsible for the distribution of electricity), Toronto Hydro Energy Services Inc. (dedicated to providing energy efficiency consulting services to help businesses lower their energy consumption costs), and Toronto Hydro Telecom Inc. (a provider of innovative data communications services). Toronto Hydro-Electric Systems is regulated by the Ontario Energy Board.

In fixing new rates and charges for THESL, the Board has applied the policies described in this Report.

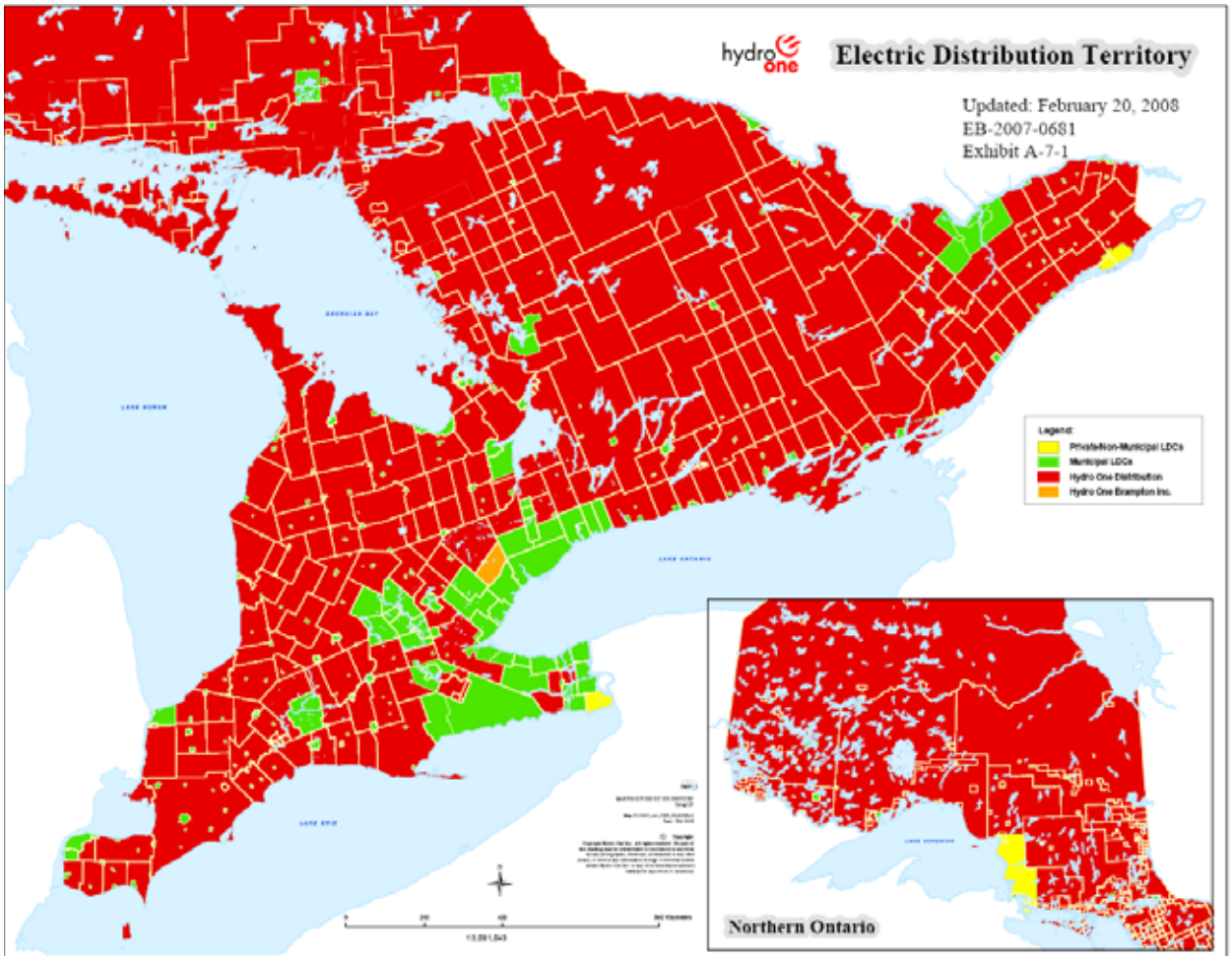


APPENDIX C
COALITION OF LARGE DISTRIBUTORS AND HYDRO ONE COMPANY PROFILES

HYDRO ONE NETWORKS INC.

Hydro One Networks serves over 1.3 million customers over its 122,800 kilometer distribution system which covers 640,000 square kilometers. The peak load of the system is over 27,000 MW. Hydro One Networks is the largest operating subsidiary of Hydro One Inc., wholly owned by the Province of Ontario. Hydro One Networks is regulated by the Ontario Energy Board.

Hydro One's rate application was filed in accordance with Board guidelines. In fixing new rates and charges for Hydro One, the Board has applied the policies described in this Report.



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The Cost of Capital in Current Economic and Financial Market Conditions

Prepared for:
The Coalition of Large Distributors and Hydro One Networks Inc.

Comments in Response to Consultative Process
Board File No.: EB-2009-0084

April 17, 2009

TABLE OF CONTENTS

I. INTRODUCTION AND EXECUTIVE SUMMARY

The Coalition of Large Distributors ("CLD")[1] and Hydro One Networks Inc. ("Hydro One") here forth referred to as "the Utilities" retained Concentric Energy Advisors ("Concentric") to assist with responding to the consultative process initiated by the Ontario Energy Board ("OEB" or "Board") in its letter of March 16, 2009. The Board initiated a consultative process to determine whether current economic and financial market conditions warrant an adjustment to any of the Cost of Capital parameter values (i.e., the Return on Equity, Long-term Debt rate, and/or Short-term Debt rate) set out in the Board's letter of February 24, 2009.[2]

In addition to evaluating whether adjustments are warranted to the specified parameter values, the Board invited stakeholders to provide written comments on the issues listed below:

1. How do the current economic and financial conditions affect the variables (i.e., Government of Canada and Corporate bond yields, bankers' acceptance rate, etc.) used by the Board's Cost of Capital Methodology?
2. In the context of the current economic and financial conditions, are the values produced by the Board's Cost of Capital methodology and the relationships between them reasonable? Why, or why not?
   - 2.1. If the values are not reasonable, what are the implications, if any, to a distributor?
3. What adjustments, if any, should be made to the Cost of Capital parameter values to compensate or correct for the current economic and financial conditions?
4. Going forward, should the Board change the timing of its Cost of Capital determination, for instance, by advancing that determination to November? And,
5. Are there other key issues that should be considered if the Board were to adjust any or all of the Cost of Capital parameter values produced by the application of its established formulaic methodology?

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1 The members of the CLD include: Enersource Hydro Mississauga Inc., Horizon Utilities Corporation, Hydro Ottawa Limited, Powerstream Inc., Toronto Hydro-Electric Systems Limited and Veridian Connections Inc.

2 Ontario Energy Board, *Board Letter re.: The Cost of Capital in Current Economic and Financial Market Conditions, Board File No.: EB-2009-0084,* March 16, 2009.

These written comments provide Concentric's research and findings related to these issues. Financial markets, regulators and utilities are clearly at a crossroads that requires a fresh look at cost of capital. In addressing the specific questions posed by the Board, we feel it is important to establish a benchmark by which "reasonable" can be measured. In this regard, we turn to the tenets of the fairness standard, recognized as a central guiding principle by both Canadian and U.S. regulators. Application of the fairness standard to the cost of capital for Canadian utilities has been the subject of considerable writing and expert testimony in federal and provincial jurisdictions, so we draw upon that growing body of work in the following *Basis for Evaluating Reasonableness of Capital Costs* section.

In the *Regulatory and Economic Context* section, we begin with a snap shot of the cost of equity from the current Ontario Formula in comparison to benchmarks from recent decisions in Canada and the U.S. that provide context. We then detail the evolution of both Canadian and U.S. capital markets since the adoption of the Formula in 1996. This information shows the close integration of the Canadian and U.S. economies and the recent capital market conditions that have challenged even the most credit worthy companies to raise capital. Against this backdrop, Ontario's gas and electric utilities must raise capital for ongoing operations and to meet provincial goals for energy efficiency, system upgrades, and renewable energy interconnection. The ability to raise capital on reasonable terms has significant impacts on utilities and their customers. Current financial markets have challenged the cost of capital Formula to keep pace with actual market conditions, but this has only exacerbated a structural problem from day one: financial markets and the cost of capital prescribed by the Formula in Ontario do not move in harmony. A growing chorus of equity analysts, industry experts and the NEB have concluded that ROE formulae employed in Canada no longer appropriately reflect the real world cost of capital. The NEB's TQM decision has formalized the mounting evidence that suggests a new approach is required. We feel it is important to give regulators the ability to make informed judgements regarding the cost of capital in changing market conditions.

In the *Specific Comments Requested by the OEB* section we specifically address questions posed by the Board in this consultative process. We provide data illustrating the mismatches between the Ontario cost of capital estimates and comparative measures. This gap is most prominent in the case of ROE. While we have not formally estimated an ROE for Ontario's utilities, the Formula ROE for

2009 probably understates actual cost of equity by 150 to as much as 300 basis points. The deemed long-term debt rate appears to be performing more reasonably, as it is tied to actual credit spreads for investment grade utilities, and not limited to Long Canadas, which is a fundamental problem with the ROE determination. The Board's short-term debt rate is pegged to a fixed spread over bankers' acceptances, while actual borrowing costs have pressed upwards as a result of the credit squeeze in current markets. The debt rates may be recalibrated, but we are less sanguine that the existing ROE Formula can be recalibrated and remain an accurate indicator of actual equity costs.

In our *Conclusions*, we find that current economic and financial market circumstances have had a material impact on the variables used by the Board in its cost of capital methodology. The bankers' acceptances rate is a reasonable underlying indicator of short-term utility debt costs, but while that rate has fallen over the past 6 months, credit spreads have widened considerably. The current 25 basis point differential requires recalibration to remedy this problem. Long-term debt rates have also been materially impacted by the current environment, but the reliance on current investment grade utility spreads over Long Canadas does a reasonable job of tracking actual market conditions. The greatest gap between estimated and actual capital costs lies in ROE. As yields on Long Canadas have been driven lower, all apparent indicators of equity costs have pointed in the opposite direction, exaggerating a trend which began with the steady decline on government bond yields. We ultimately conclude that capital cost values arising from the Board's existing approach, with particular focus on the ROE and short-term debt rate, would not meet an objective test of fairness. It may be possible to temporarily recalibrate the cost of equity with a transitional "adder" for 2009, but a sustainable solution requires a full evaluation of the cost of capital accounting for both current and anticipated market conditions.

If the Board determines that a short-term solution is necessary, we would recommend a recalibration of both the short-term debt rate and the cost of equity. In order to do so, we would recommend the following adders for the 2009 test year:

- Short-term debt rate – spread over banker's acceptance rate should be increased from 25 basis points to 175 basis points for the most creditworthy utilities, to 250 basis points for utilities below the A-rated level.
- Return on Equity – creation of a temporary ROE adder, to bridge the gap, to the results produced by the current Formula equal to no less than 200 basis points.

II. BASIS FOR EVALUATING REASONABLENESS OF CAPITAL COSTS

The basis for evaluating whether capital costs produced by the Formula are reasonable is ultimately a question of satisfying the fairness standard. "Fair" has been defined through a series of bellwether decisions that are widely recognized in the regulatory community. In the U.S., *Bluefield Waterworks and Improvement Company v. Public Service Commission of West Virginia (1923) ("Bluefield")*, and *Federal Power Commission v. Hope Natural Gas Company (1944) ("Hope")* established these important foundations. In Canada, the Supreme Court in *Northwestern Utilities v. City of Edmonton (1929) ("Northwestern")* established a comparable foundation for utility cost of capital. As stated by Mr. Justice Lamont in that case:

> *The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise….* [3]

The NEB has further summarized its view that the fair return standard can be met by fulfilling 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 requirement);
- Enable the financial integrity of the regulated enterprise to be maintained (the financial integrity requirement); and
- Permit incremental capital to be attracted to the enterprise on reasonable terms and conditions (the capital attraction requirement).[4]

Concentric's written response to the Board's letter will examine the results of the generic rate of return Formula for Ontario's utilities and its ability to meet these standards given current economic conditions.

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3 Northwestern Utilities v. City of Edmonton [1929] S.C.R. 186 (NUL 1929).

4 Reasons for Decision, TransCanada Pipelines Limited, RH-2-2004, Phase II, April 2005, Cost of Capital, and reaffirmed by Reasons for Decision, Trans Quebec & Maritimes Pipelines, Inc., RH-1-2008, March 2009, at 6-7.

Concentric's research for this report is supported by several recent studies and reports, developed by Concentric and others, which have evaluated the returns produced by the Formula. These studies include:

- *Return on Equity: Allowed Returns for Canadian Gas Utilities*, A Discussion Paper Developed by the Canadian Gas Association, May 2007;
- *A Comparative Analysis of Return on Equity of Natural Gas Utilities*, prepared for the Ontario Energy Board by Concentric Energy Advisors, June 14, 2007;
- *Perspective on Canadian Gas Pipeline ROEs*, Canadian Energy Pipeline Association, February 2008;
- *Allowed Return on Equity in Canada and the United States*, National Economic Research Associates, February 2008 (study commissioned by the Canadian Gas Association);
- *The Fair Return Standard for Return on Investment by Canadian Gas Utilities*: Meaning, Application, Results, Implications, The Honourable John C. Major Former Justice, Supreme Court of Canada and Roland Priddle, President, Roland Priddle Energy Consulting Inc. and Former Chair of the National Energy Board, March 2008; and
- *A Comparative Analysis of Return on Equity for Electric Utilities*, prepared for the Coalition of Large Distributors and Hydro One Networks Inc. by Concentric Energy Advisors, June 2008.

In addition, witnesses for Concentric have recently presented substantial evidence on this topic before the Alberta Utilities Commission in its Generic Cost of Capital proceeding (Proceeding ID.85).

III. REGULATORY AND ECONOMIC CONTEXT

HISTORICAL PERSPECTIVE ON THE ONTARIO COST OF CAPITAL

The adoption of a formulaic approach to setting regulated authorized equity returns in Canada was first established by the BC Commission in 1994. Subsequently, other regulatory bodies in Canada followed suit. In Ontario, the ROE Formula was first implemented for natural gas distribution utilities in 1997, with the OEB's Draft Guidelines on "A Formula-Based Return on Common Equity for Regulated Utilities". Up until 1999, Ontario's electric distributors were principally municipal utilities under the regulation of Ontario Hydro and earned no specified rate of return on equity. Not until 1998 and the passage of the *Energy Competition Act* ("the Act"), did the OEB have the authority to fix "just and reasonable" rates for Ontario's 270 plus municipal electric utilities that existed at that time. Based on methodological recommendations forwarded by Dr. William Cannon, a desire to align with existing methods for gas distributors, and the objective of implementing a performance based ratemaking framework, the Board also established a formulaic risk premium approach to ROE for electric distribution utilities.[5]

These ratemaking principles were adopted in the Electricity Distribution Rate Handbook promulgated in the Board's Decision with Reasons in RP-1999-0034 on January 18, 2000. The principal features of this new era for Ontario's electric utilities were a uniform ROE of 9.88 percent for all electric utilities, (based on a Canadian long-term bond rate of 5.95 – 6.00 percent and an equity risk premium of 375 – 380 basis points); and a PBR mechanism. The Board's stated objectives were: reducing regulatory burden, creating incentives for cost reduction and productivity gains, establishing minimum service quality and reliability standards, and meeting the broader Government goals of "ensur[ing] efficiencies are achieved in the monopoly parts of the industry and results in benefits to consumers", and "tariffs that are as low as possible on a sustainable basis".[6] Following the implementation of industry restructuring and the First Generation Incentive Regulation Mechanism ("IRM"), the government introduced the Electricity Pricing, Conservation

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5 See: A Discussion Paper on the Determination of Return on Equity and Return on Rate Base for Electric Distribution Utilities in Ontario, Dr. William T. Cannon, December, 1998; and Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electric Distributors, Ontario Energy Board, December 20, 2006.

6 Board's Decision with Reasons in RP-1999-0034 on January 18, 2000, pp 11-12.

and Supply ("EPCS") Act of 2002. In response to tightening power markets and rising electric prices, this legislation capped the price of electricity at 4.3 cents per kilowatt-hour for residential, small-business and other designated low-volume consumers, effective May 1, 2002 to May 1, 2006.[7] Under the Act, all transmission and distribution rates were frozen at existing levels (with the exception of regulatory asset recovery) until at least May 1, 2006, which displaced any further reviews of cost of capital during that period.[8] In 2006, the Board reaffirmed its overall approach to the setting of ROE and updated its formula-based ROE determination to 9.00 percent. The Board further simplified its approach to capital structure by adopting a 60 percent debt/40 percent equity ratio for all electric distributors.

PERFORMANCE OF THE FORMULA

Prior to the implementation of the formulaic ROE approach, adopted by the OEB for its natural gas utilities in 1997, ROEs in Canada and the U.S. were in virtual parity.[9] Since the adoption of the formulaic approach for Ontario's gas utilities in the "Draft Guidelines on a Formula-Based Return on Common Equity", a growing gap between the returns of U.S. gas utilities and Canadian gas utilities has developed. That divergence extends to the 80 plus electricity distribution utilities currently operating in Ontario, who have since been regulated under the same formulaic approach. Figure 1 illustrates the Formula ROE in effect for 2008, and proposed for 2009, against other measures of equity costs. Ranging from the recent TQM Decision to recent Canadian pipeline settlements for additional context, the Ontario ROE would be lower by 146-218 basis points. Concentric's analysis reveals for 2009, that there presently is an approximate 279 basis point difference between allowed natural gas and electric distribution utility ROEs in the U.S. versus Ontario. These differences are exacerbated by the lesser equity thicknesses of the Ontario utilities, which on average employ 10-15 percent less equity in their capital structures than in the U.S., further widening the gap between U.S. and Ontario authorized returns. Given the growing disparity between government bond yields and actual corporate capital costs, we would expect this ROE gap, left unchecked, to continue to grow as high as 300 basis points.[10]

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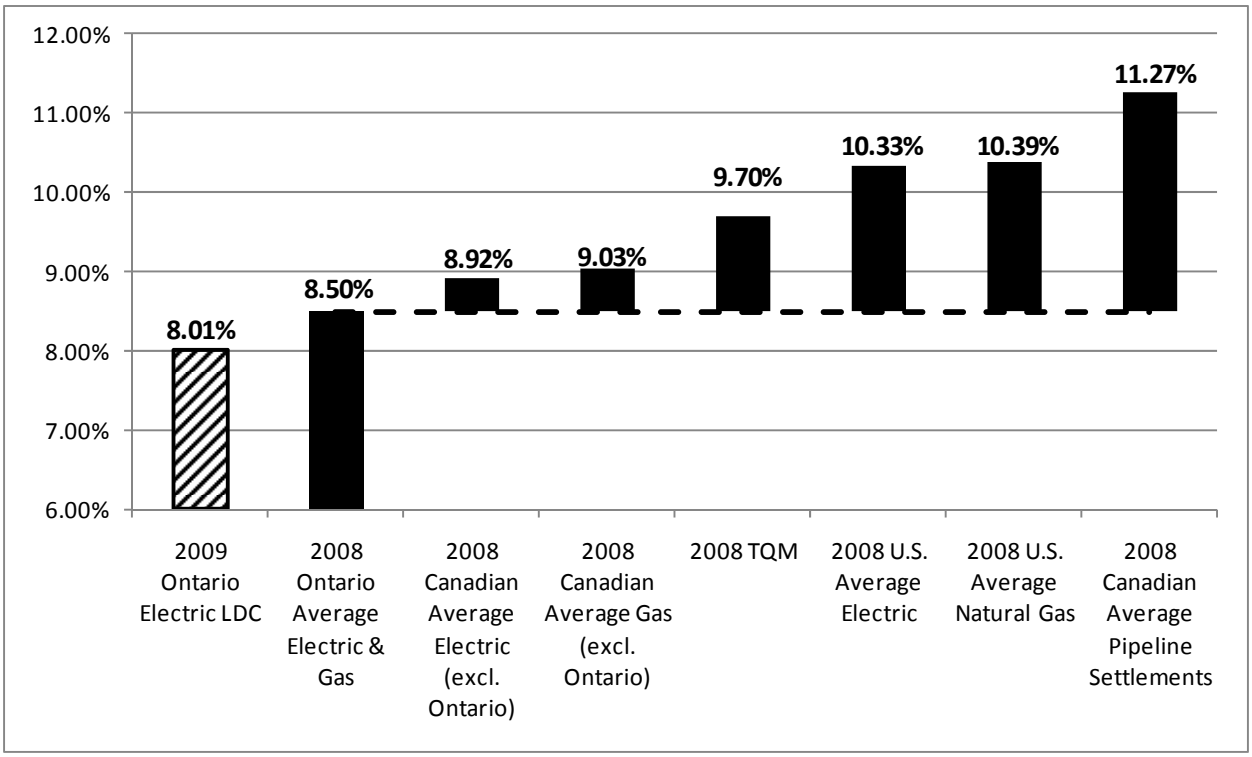
7 Exceptions were made for commodity price increases in 2004 and 2005.

8 http://www.oeb.gov.on.ca/html/en/abouttheoeb/history.htm

9 Concentric Energy Advisors, Inc., *A Comparative Analysis of Return on Equity of Natural Gas Utilities*, June 2007, at 13.

10 Recent U.S. ROE awards for March and April 2009, range from 10.17 on the low end to 11.50 on the high end, with an average ROE of 10.74%, on 48 percent equity. A calculation of the Ontario ROE, based on the most

Figure 1: Relevant Benchmarks for Ontario Authorized ROE



Sources: SNL RRA Database for U.S. authorized returns for 2008 (Gas and Electric LDCs); Ontario 2008 authorized returns produced by the Formula (average of electric LDCs 8.57%, Enbridge Gas Distribution 8.39%, Union Gas Ltd. 8.54%); Canadian average (excl. Ontario) per Annual Reports and Rate Applications. Canadian 2008 Negotiated Pipeline Settlements authorized returns (average of Maritimes & Northeast 11.66%, Alliance Pipeline 11.26%, Alberta Clipper 10.96%, Line 4 Extension 10.96%, Trans Mountain Pipe Line 10.75%, Southern Lights 12.00%), and TQM return for 2007-2008 as set by the NEB (assuming 40% equity).

Although current economic conditions provide visibility into the shortcomings of the current Formula, they should not be construed as the cause of the problem. It is Concentric's view that an approach relying entirely on a single input subject to cyclical market fluctuations is exposed to a high risk of error. Without performing objective corroborating analyses there is insufficient information to determine whether a given formula is arriving at results that are reasonable. A formula that depends solely on changes in the government bond yield is problematic, particularly in the current market environment, and warrants a thorough review by the OEB and stakeholders.

recent (March 2009) Consensus Forecast, yields an ROE of 7.95%, currently resulting in a difference of 279 basis points from the average U.S. return.

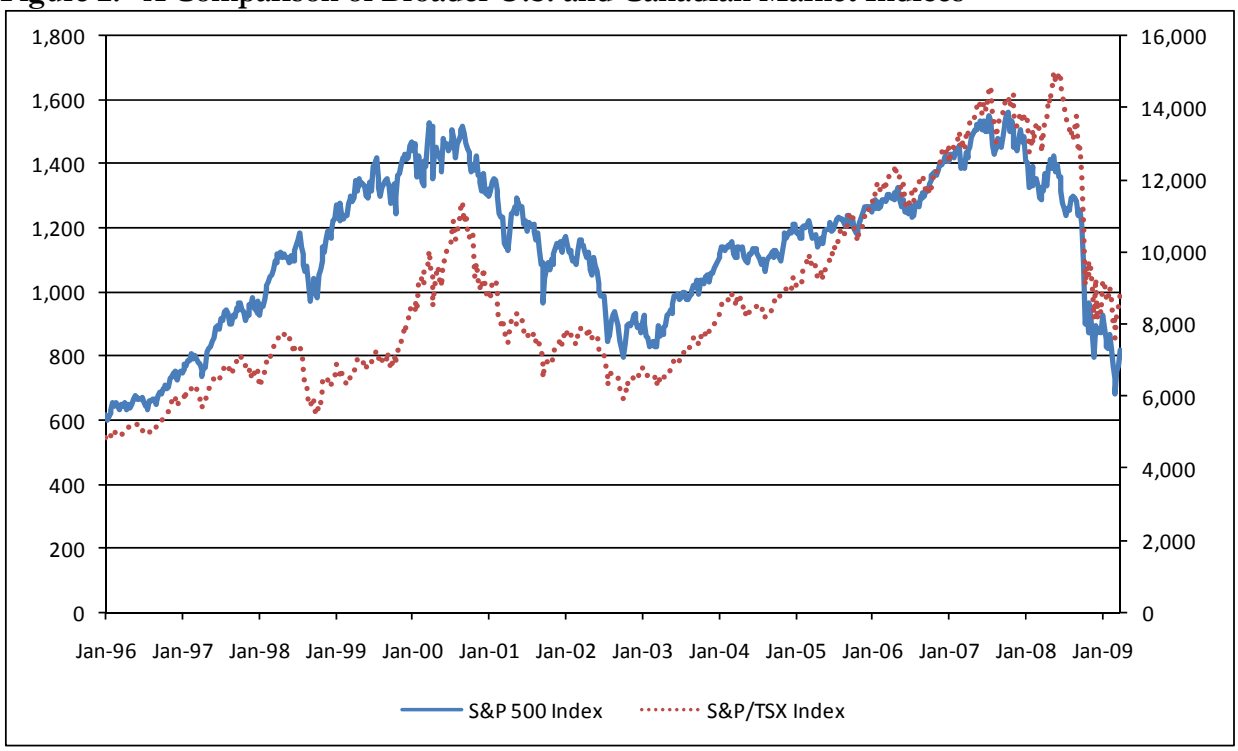
CURRENT ECONOMIC CONDITIONS IN THE U.S. AND CANADA

Like the U.S. economy, the Canadian economy has entered a recession. Initially, this contraction was attributed to the close link between the two economies, but it has been exacerbated by the precipitous decline in natural resource prices, the drop in Canadian exports, and declining domestic demand for goods and services since the beginning of 2008. In Concentric's studies prepared for the OEB and for Hydro One and the CLD, referenced earlier in this document, significant evidence was presented to demonstrate that the U.S. and Canadian economies are closely integrated. In the Hydro One CLD study, Concentric analyzed such macroeconomic factors as GDP growth, broader market indices, CPI, and exchange rates for the two countries and concluded that the economies are closely integrated. We noted in 2006, Canada exported nearly 82% of its total exports to the U.S. and imported from the U.S. roughly 55%. Based on our examination of the business and regulatory environment for utilities in the U.S. and Canada, we have not found dissimilarities that would explain a significant difference in investors' expectations nor anything to suggest that Ontario utilities should receive lower returns than those in the U.S.[11]

Figure 2 compares the U.S. and Canadian stock market indices through March 2009 showing the strong positive relationship between the two indices. The correlation coefficient for the two markets is 0.753 for the entire period; and over the past five years (April 2004 – March 2009), that relationship has increased as evidenced by the correlation coefficient of 0.852.

[11] Concentric Energy Advisors, *A Comparative Analysis of Return on Equity of Natural Gas Utilities*, Prepared for the Ontario Energy Board, June 14, 2007, at 57-58; and, Concentric Energy Advisors, *A Comparative Analysis of Return on Equity For Electric Utilities FINAL REPORT*, Prepared for The Coalition of Large Distributors and Hydro One Networks Inc., June 2008, at 42-43.

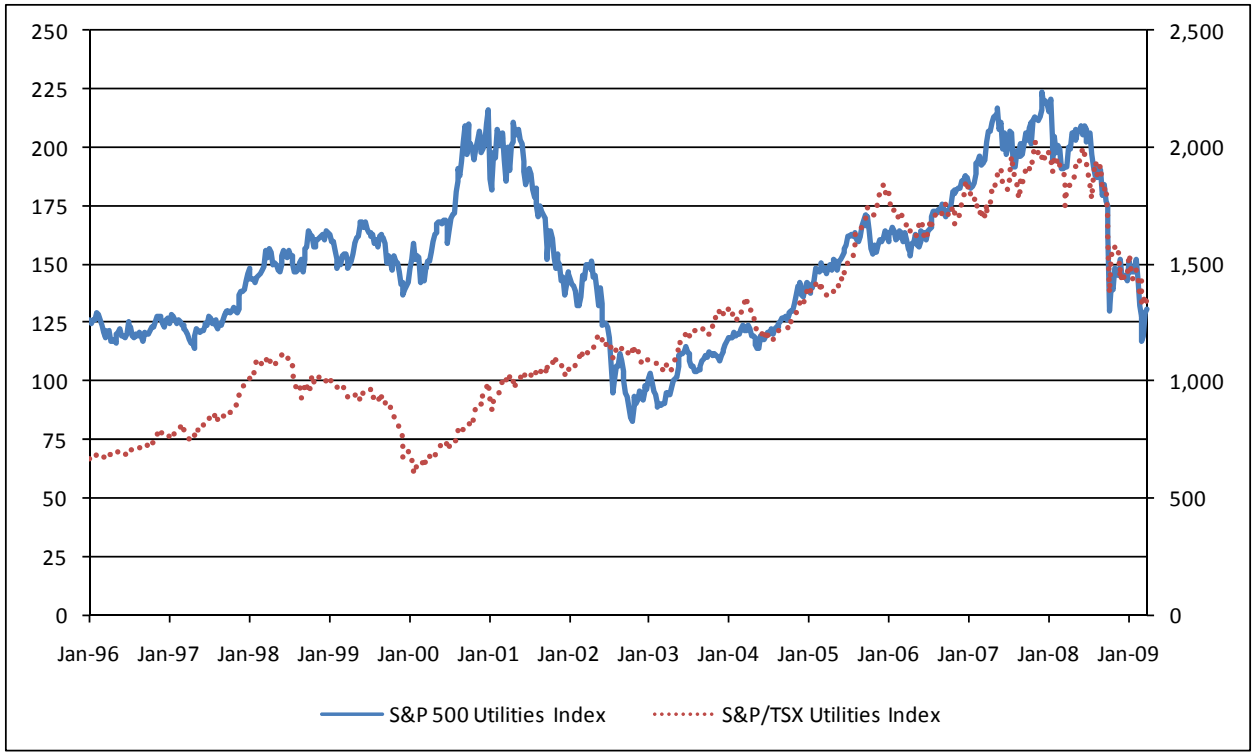
Figure 2: A Comparison of Broader U.S. and Canadian Market Indices



Source: Bloomberg

Similarly, the S&P 500 and the S&P/TSX Utilities indices show the same strong relationship. As indicated in Figure 3, since January 1996, the utilities indices were positively correlated by a factor of 0.489, but since 2004 that relationship has strengthened and the two indices are now positively correlated by a factor of 0.930. This convergence of U.S. and Canadian utilities indices in the early 2000's, specifically 2000 and 2001, is plausibly explained by the increased integration of the two economies, as well as the shedding of risky assets by regulated utilities in the aftermath of the California energy crisis and the Enron bankruptcy.

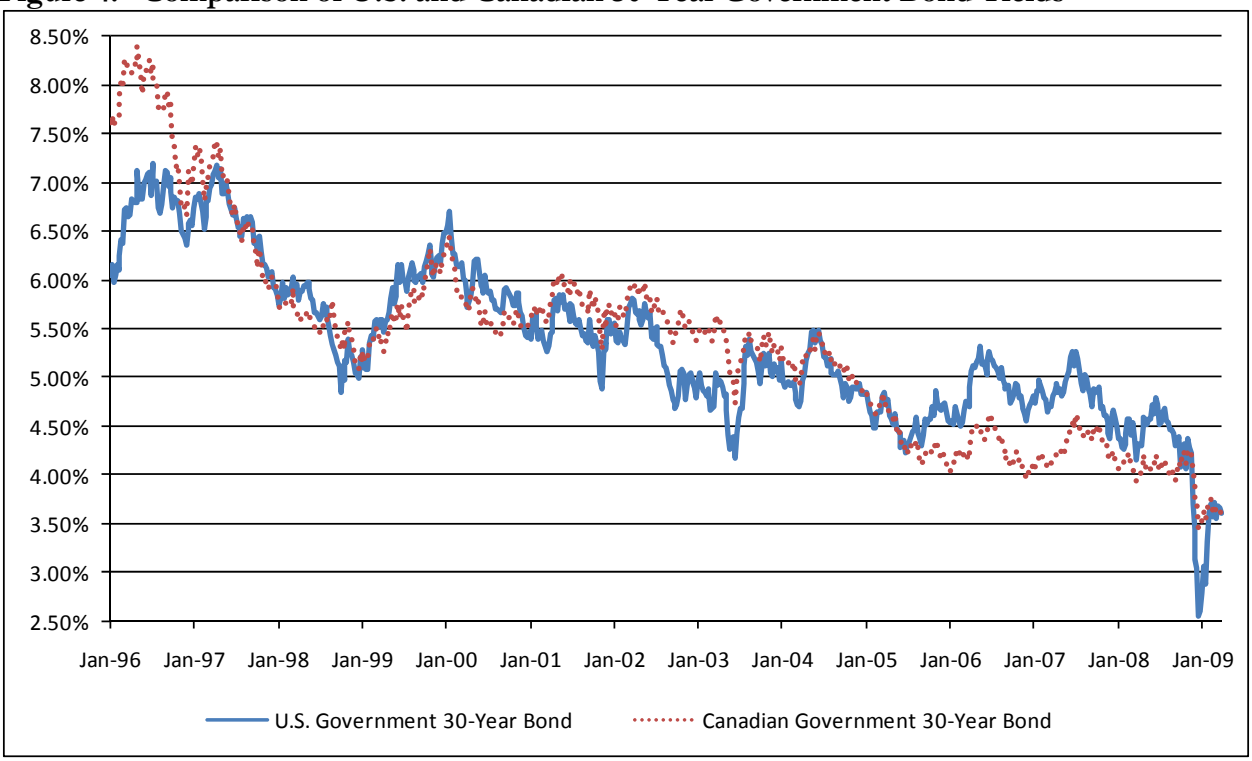
Figure 3: Comparison of U.S. and Canadian Utility Indices



Source: Bloomberg

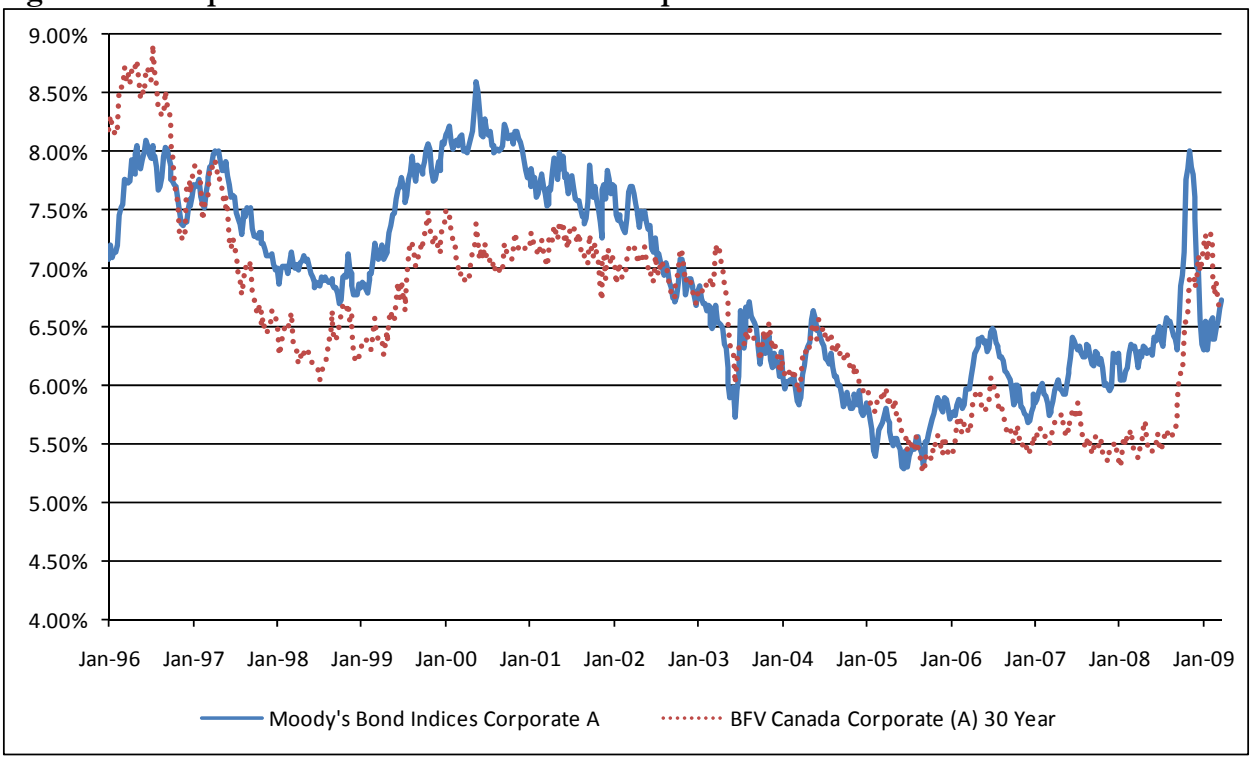
A review of government and corporate bond yields also provides evidence of the integration between the two economies. Figures 4 and 5 contain comparisons of U.S. and Canadian government and corporate bond yields. Clearly, the economies, and more importantly for the OEB's questions, financial markets, are moving in near lock step.

Figure 4: Comparison of U.S. and Canadian 30-Year Government Bond Yields



Source: Bloomberg

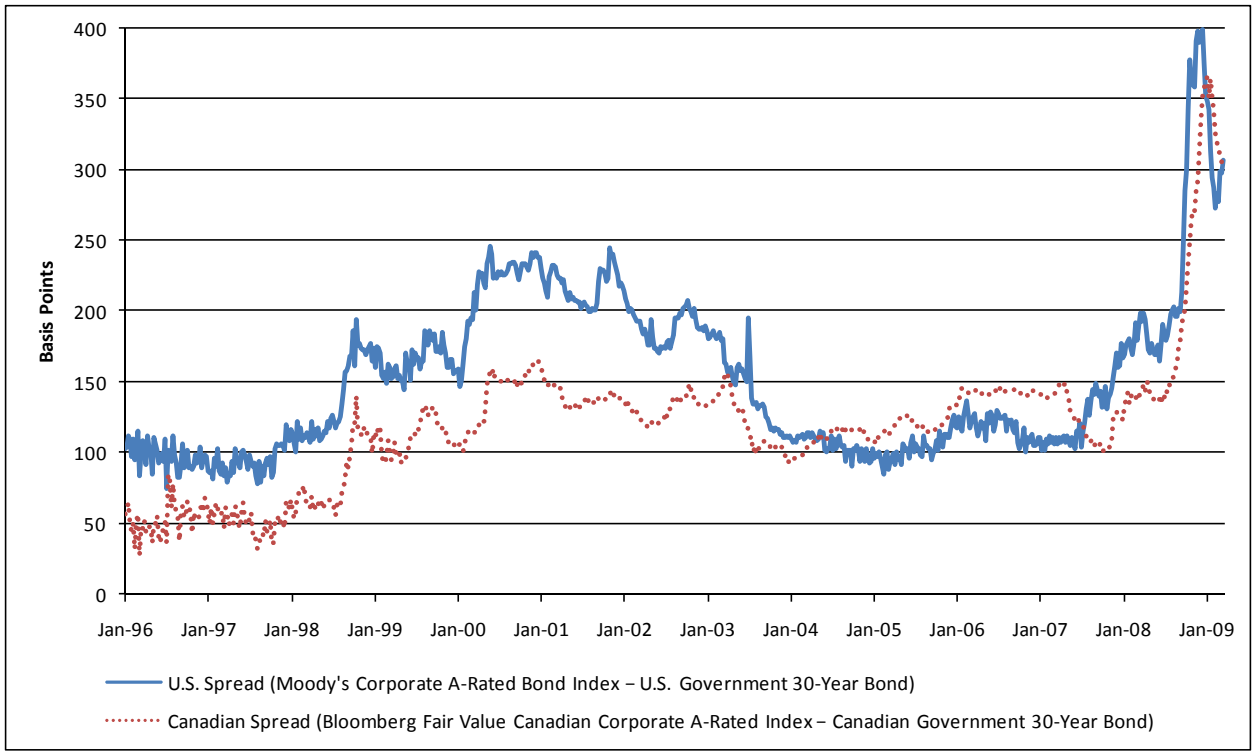
Figure 5: Comparison of Canadian and U.S. Corporate A-Rated Bond Yields



Source: Bloomberg

What is evident from the above charts is: (1) the U.S. and Canadian economies and utility sectors move in close correlation; and (2) both economies have experienced a significant decline as a result of the current recession. Further, as illustrated by a comparison of credit spreads in Figure 6, capital costs are rising even though government bond yields are falling.

Figure 6: A Comparison of U.S. and Canadian Corporate Credit Spreads Over the 30-Year Government Bond Yields



Source: Bloomberg

As illustrated above, corporate credit spreads have spiked in recent months as have corporate borrowing costs to compensate investors for the increased risk, unprecedented in recent history, in financial markets. In 2008, the U.S. total market lost 38.3% of its value and Canada experienced an even greater loss of 45.7%. This financial crisis has caused a crisis of investor confidence that will have a lasting effect on the price of risk.

The current financial crisis has several implications for utilities: 1) widening credit spreads for debt issuances; 2) reluctance to issue common equity amid weak markets; and 3) reduced or deferred

capital spending plans for necessary infrastructure. These issues are captured by a special comment published by Moody's Investor Services on October 13, 2008:

> *Although longer-term relief may not be completely out of the question, many utilities are reluctant to incur the risk of sizeable deferrals on their financial statements. These infrastructure investments have been identified as necessary, given the age of the assets, and continued regulatory support has been incorporated into most utilities' long-range forecasts, including an expectation that returns on capital would be reasonable. Should this prove not to be the case, it could represent the first crack in our fundamental assumption regarding the sector's ratings and ratings outlook.*[12]

Current conditions in financial markets make it very difficult for utilities to raise debt and equity capital on reasonable terms. Although utilities continue to have access to credit markets, borrowing costs and credit spreads have increased significantly, regardless of the credit worthiness of the debt issuer. According to Scotia Capital, "Deleveraging and general risk aversion has sent even the highest-grade credit spreads to record highs." The bank further offers the "Market remains mostly shut to non-Government backed issuances in Canada post Lehman."[13]

Some thawing of credit markets has occurred over the past few weeks, but credit-worthy borrowers are paying a substantial premium over the risk free rate for debt capital. Because utilities are capital intensive businesses which are highly leveraged, especially in Canada, the availability of reasonably priced debt financing is critical to their financial integrity. These issues are particularly important for Ontario utilities, which have higher capital expenditure projections because of the planned replacement and expansion of infrastructure in the Province.

ONTARIO INVESTMENT INITIATIVES AND CAPITAL REQUIREMENTS

Ontario is deploying an aggressive campaign to update its electric distribution grid and pursue renewable generation technologies. These initiatives are incremental to the steady customer growth in Ontario's major metropolitan areas and the maintenance requirements associated with safely operating some of the Country's oldest electric and natural gas distribution infrastructures in accordance with increasingly stringent technical and environmental standards. Additionally, Ontario utilities will be called upon to develop assets to promote and facilitate an optimal allocation of

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12 "Moody's: Investor-owned Utilities somewhat insulated from economic instability," SNL Financial, October 14, 2008, Rosy Lum.

13 Scotia Capital, Fixed Income Research, 2008 in Review, Jan., 2009, at 8 and 15.

energy resources, such as developing natural gas storage capacity or developing infrastructure to accommodate new and environmentally sound sources of power generation. Many of these strategic initiatives are laid out in specific plans that have earmarked a substantial amount of capital in the next several years.

First, Ontario's Integrated Power System Plan ("IPSP") estimates roughly $16 billion[14] (in 2007 dollars) to be spent over the next five years on electrical distribution alone, exclusive of the costs of new generation, conservation, and transmission. In addition, the Government of Ontario is in the midst of a smart metering initiative that established targets for the installation of 800,000 smart electricity meters by December 31, 2007 and for all Ontario customers by December 31, 2010. The Smart Grid initiative of June 2008 addressed the challenges of incorporating distributed generation, accommodating growth, and replacing aging infrastructure while maintaining reliability and quality of service by adding wires with intelligence to the grid at an incremental estimated cost of $320 million over the next five years.[15] Lastly, the Green Energy Act, which aggressively pursues renewable energy targets, is incremental to the directives mentioned above and will substantially increase the capital requirements in Ontario to connect new renewable energy resources to the grid.

This is a time of unprecedented capital growth in Ontario to meet the Government's energy and infrastructure objectives. These objectives can only be met if there is adequate cash flow to finance debt and encourage new equity infusion to maintain capital ratios. These enormous capital requirements come at a time when the costs of capital and credit spreads have ballooned to levels unprecedented in the recent past, while the Ontario ROE Formula prescribes the lowest equity return authorized by the OEB in the history of Ontario's utilities,[16] 8.01 percent, barely over the current long-term debt cost. Low rates of equity return do not encourage investment or consolidation and in fact may undermine some of the investments already undertaken. Many of the technologies being proposed for Green Energy are new and untried and the size of these initiatives dwarf most comparable initiatives in the U.S., dispelling any notion that Ontario utilities are lower risk than their U.S. counterparts. At a credit spread of 39 basis points over corporate borrowing

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[14] Ontario IPSP, EB-2007-0707, Exhibit G, Tab 2, Schedule 1, Page 27 of 32, Table 20, Corrected: October 19, 2007

[15] *Enabling Tomorrow's Electricity System Report of the Ontario Smart Grid Forum*, at 14.

[16] According to records dating back as far as 1985.

costs, the formulaic ROE result is not credible and is significantly out of touch with the realities of Ontario's current business environment and the global economic environment where investment grade credit spreads have increased on the order of 300 – 500 basis points. Regulators must consider how to satisfy this elevated need for capital in the current economic climate. It has become increasingly evident that the fundamentals underlying the ROE Formula have changed and the Formula is no longer producing realistic results.

THE RELEVANCE OF THE TQM DECISION

It is worthy to note that the NEB has visited the issue of the broadly adopted Canadian ROE formulae in its March 2009 Decision on the TQM cost of equity. After months of deliberation and extensive expert testimony, the Board found several reasons to doubt the applicability of the Formula given the "new business environment" and all the changes that have occurred since its original adoption in 1994.

The NEB Decision broke new ground in reconsideration of the Formula. The Board cited several factors that led to its ultimate Decision. Interestingly, the current economic environment was notably absent as a factor in its Decision. However, the Board did state that it was of the view that there have been significant changes in financial markets as well as in general economic conditions since the Formula's inception in 1994; specifically, Canadian financial markets have experienced greater globalization. The Board acknowledged that the increased globalization of financial markets translates to a higher degree of competition for capital among North American utilities. Second, the Board noted that the decline in the ratio of Canadian government debt to GDP has put downward pressure on Canadian bond yields. The Board acknowledged that government bond yields do not capture all of the changes that could impact TQM's cost of capital and specifically stated:

> *The RH-2-94 Formula relies on a single variable which is the long Canada bond yield. In the Board's view, changes that could potentially affect TQM's cost of capital may not be captured by the long Canada bond yields and hence, may not be accounted for by the results of the RH-2-94 Formula. Further, the changes … regarding the new business environment are examples of changes that, since 1994, may not have been captured by the RH-2-94 Formula. Over time, these omissions have the potential to grow and raise further doubt as to the applicability of the RH-2-94 Formula result for TQM for 2007 and 2008.*[17]

[17] NEB Reasons for Decision, Trans Québec & Maritimes Pipelines Inc., RH-1-2008, at 17.

The recent TQM Decision adopted an ATWACC approach , recognizing that equity returns and capital structure are intertwined and should be considered together in estimating a utility's cost of capital. This Decision provided an approximate 170 basis point increase over the most recent Ontario ROE of 8.01 percent as derived by the Formula, and confers greater flexibility to utility management to adopt its own capital structure based upon its assessment of appropriate leverage under existing conditions. The Board's Decision validated increasingly vocal criticisms of the Formula. Many equity analysts have stated that Canadian ROE formulas are broken, claiming that these formulas are no longer representative of current market conditions. Stephen Dafoe with Scotia Capital opined on the single most important factor in the NEB's recent decision regarding TQM's cost of capital:

> *In our view, the single largest factor in the NEB's TQM Decision was the gradual decline in Canada yields from 1995 to 2007. However, in addition to this long and gradual decline, since the failure of Lehman Bros. in September, 2008, global sovereign yields have plunged precipitously, while credit spreads, and the cost of equity, have ballooned. Clearly, this mismatch between Canadian regulators' formulaic ROE resets and the real-world cost of debt and equity capital is very material.*[18]

Linda Ezergailis et al reiterated this point by noting that the current yield on the long Canada bond is no longer an accurate predictor of a regulated utility's cost of equity:

> *The Board conceded that factors that could potentially change TQM's cost of capital may not be captured in its previous approach, which relied on a single variable, the long Canada bond yield. We note that under the previous formula, recent declines in government bond yields resulted in a lower ROE for 2009, which is contrary to our view that the cost of capital for regulated companies has increased.*[19]

BMO Capital Markets declared that Canadian ROE formulas fail to take into consideration changes in industry or broad market conditions:

> *The major weakness here is that this formula does not take into account changes in industry conditions over time (shifting industry risks) nor does it take into account changes in the broad market, such as today's higher risk premiums (indeed, the flight to quality and strengthening of government treasuries has perversely eroded the allowed 2009 ROE to 8.57% at the very time investors are demanding higher returns).*[20]

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18 Dafoe, Stephen. "Credit Analysis: Trans-Quebec & Maritimes Pipeline Inc." Scotia Capital. April 3, 2009. Page 5.

19 Ezergailis, Linda, Robert Hope and Avery Haw. "TQM Decision Has Positive Sector Implications." TD Newcrest. March 23, 2009. Page 33 of 43.

20 BMO Capital Markets, *North American Pipelines*, March 20, 2009.

Robert Kwan with RBC Capital Markets discussed the implications of the NEB's Decision on other jurisdictions within Canada:

> *Given the magnitude of the increased returns for TQM, we believe it may be difficult for the various provincial regulators to ignore the NEB decision. If there is no ROE relief, it may become difficult for provincially-regulated utility business to attract capital given what would be a significant difference in ROEs without a meaningfully different risk profile.*[21]

The NEB's TQM Decision has major implications for all Canadian regulated utilities. It is the first formal acknowledgment by a Canadian regulatory authority that the Formula is indeed "broken". The gradual decline in government bond yields has led to increasingly lower ROEs at a time when all logic indicates that equity costs are rising. This highlights the fundamental flaw with the Formula, which the Board noted in its Decision, that government bond yields do not capture all of the changes in a utility's cost of capital. In fact, though there is a strong historical relationship, current economic events illuminate that government bond yields and utility capital costs may be influenced by a completely different set of factors, and the relationship cannot be relied upon to hold. In Concentric's view, reliance upon any singular factor, without corroboration in determining the utility cost of capital is a problematic approach that is subject to a high degree of error. The NEB Decision provides substantial support for provincial regulatory reviews of the ROE Formula. Currently, such reviews are ongoing in Alberta and are anticipated in British Columbia[22] and Quebec.[23]

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21 Kwan, Robert. "Energy Infrastructure: Goodbye Formula, Hello Higher Returns." RBC Capital Markets. March 20, 2009. Page 3.

22 Terasen Gas 2008 Annual Report, at 25. Terasen makes the following statement: "Fair regulatory treatment that allows Terasen Gas and TGVI to earn a fair risk adjusted rate of return comparable to that available on alternative, similar risk investments is essential for maintaining service quality as well as ongoing capital attraction and growth. Since 1994, subject to minor modifications, the allowed ROE has been set based on a formula linked directly to forecast 30-year Canada Bond yields that have steadily declined in recent years. It is essential that the Company maintain good relationships with its various regulators and customer representatives. Terasen Gas and TGVI will be challenging the current generic ROE adjustment mechanism and increases to deemed equity thickness to more fair and appropriate levels. The Company intends to file an application with the BCUC in the second quarter of 2009.

23 Gaz Metro filed its intent to submit a rate application on March 2, 2009, and has indicated that it will be proposing modifications to the method of calculating ROE and to its capital structure.

IV. SPECIFIC COMMENTS REQUESTED BY THE OEB

1. HOW DO THE CURRENT ECONOMIC AND FINANCIAL CONDITIONS AFFECT THE VARIABLES (I.E., GOVERNMENT OF CANADA AND CORPORATE BOND YIELDS, BANKERS' ACCEPTANCE RATE, ETC.) USED BY THE BOARD'S COST OF CAPITAL METHODOLOGY?

There is little doubt that the current economic and financial situation has had a material impact on the variables used by the Board in its methodology. Specifically, as shown previously in Figure 4, Canadian Long bond yields have steadily declined since 1997, and this decline has accelerated as a result of the flight to quality in global financial markets over the past six months. Long Canadas are now yielding the lowest rates since the 1940s. Simultaneously, the cost of equity, by any reasonable measure, has increased sharply Financial analysts estimate that the market equity risk premium (over the risk free rate) is now in the range of 8 – 10%[24]. As a result, the single driver of cost of equity in the Formula (Long Canadas) is not able to track the actual cost of equity. This situation has evolved with the decade-long decline in government bond yields, and has been exacerbated by current financial markets.

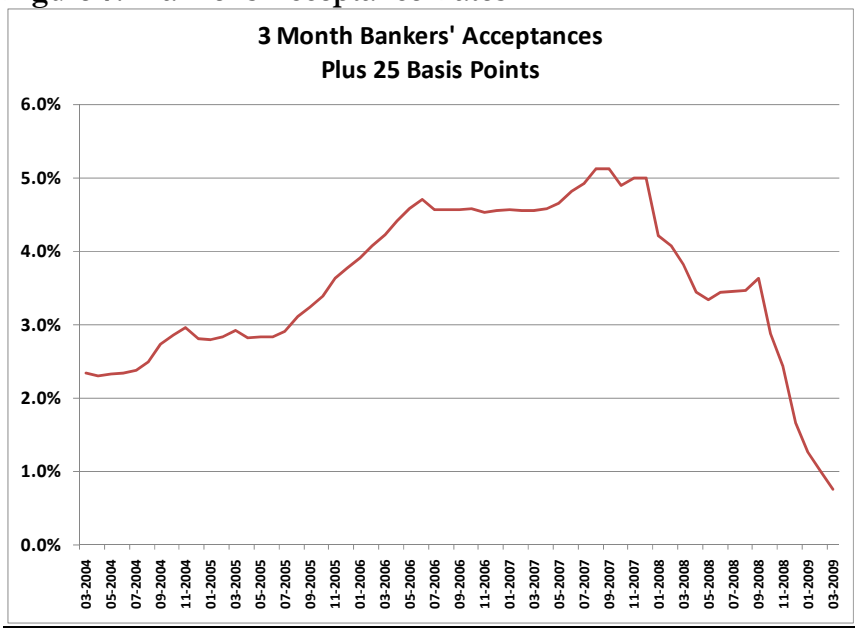
Simultaneously, the yields on Canadian corporate A-rated bonds have risen sharply as investors have re-priced corporate risk in the context of the recession and failures of previously credit-worthy entities. This has affected highly-rated corporate issuers, including utilities. Fortunately, the Board's formula for the deemed long-term debt rate is tied to Long Canadas and the average spread between investment grade (A/BBB) bond yields. The produced result has certainly been affected by current financial conditions, but is better able to track the actual cost of utility debt issuances given the appropriate link to recent corporate bond spreads.

The Board's deemed short-term debt rate is tied to three-month banker's acceptance rates plus a fixed spread of 25 basis points. It is Concentric's understanding that the 25 basis point differential no longer reflects short-term borrowing costs. The credit spreads on short-term

[24] JP Morgan, The Most Important Number in Finance – The Market Risk Premium (November 2008)

debt have risen sharply and are currently about 10 times the normal historical levels. Current pricing for bank lines reflect a standby fee of 40-50 basis points and will require 150 – 200 basis points to draw on the credit line. While the banker's acceptance rate has continued to decline, as illustrated in Figure 7, the differential over the banker's acceptance rate has increased from 35 – 45 basis points to as high as 250 basis points for drawn-down renewals. The current deemed short-term debt cost therefore does not reflect current market conditions.

Figure 7: Banker's Acceptance Rates

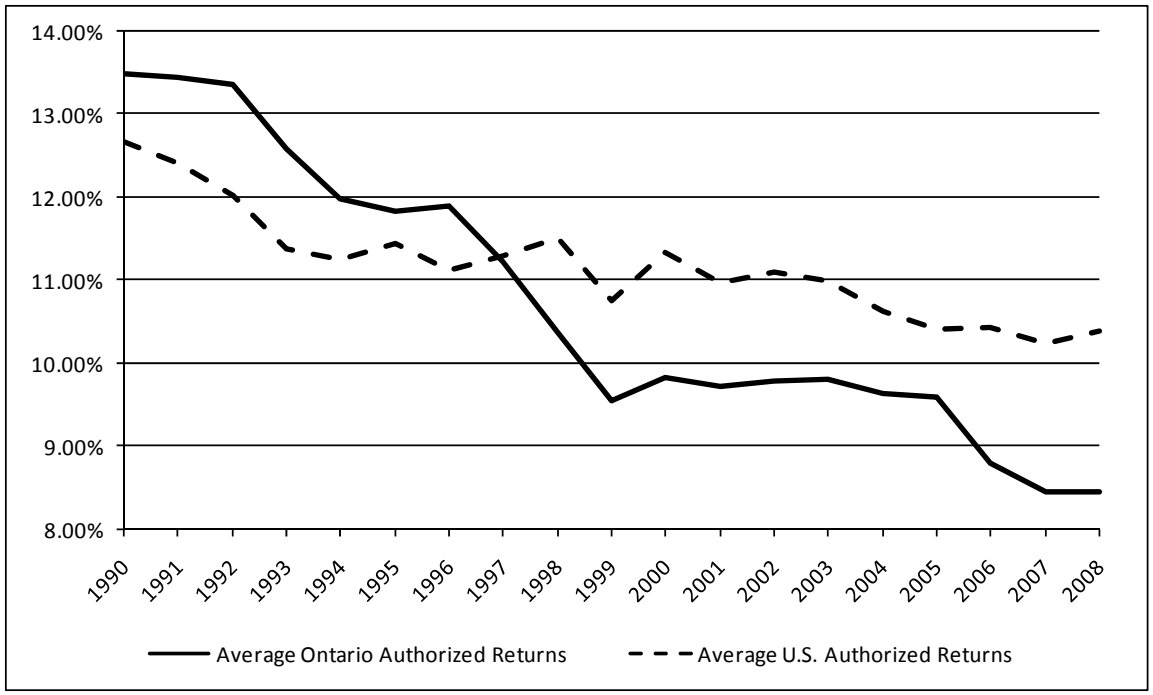


2. **IN THE CONTEXT OF THE CURRENT ECONOMIC AND FINANCIAL CONDITIONS, ARE THE VALUES PRODUCED BY THE BOARD'S COST OF CAPITAL METHODOLOGY AND THE RELATIONSHIPS BETWEEN THEM REASONABLE? WHY, OR WHY NOT?**

The Formula was instituted in Ontario at a time when U.S. and Canadian utility equity returns were in virtual parity. The gradual decline in government bond yields and the sensitivity to interest rates, fundamental to the Ontario ROE Formula, have resulted in a deep and expanding gap between the equity returns of the U.S. and Canadian utilities. The Figure below illuminates the disparity between U.S. and Canadian returns that existed

through 2008. Clearly, the current economic woes have deepened the divide as the difference in utility ROEs between the U.S. and Ontario may approach 300 basis points.

Figure 8: The Growing Gap between Ontario and U.S. Utility ROEs



Source: Ontario Natural Gas utility authorized returns per Concentric's Study for the OEB and U.S. ROEs for natural gas LDCs per SNL RRA data

The Ontario ROE Formula is directly linked to changes in government bond yields whereby an elasticity factor (or sensitivity) of 0.75 has been established for equity returns vis-à-vis government bond yields; i.e. for a given change in interest rates, Ontario's authorized ROEs will adjust by a factor of 0.75. Additionally, the equity risk premium implied by the Formula moves inversely to interest rates by a factor of 0.25 or (1 – 0.75).

To assess the reasonableness of the elasticity factor of 0.75 in the Ontario Formula, we have performed a regression using U.S. utility authorized return data as the dependent variable to quantify this historical relationship. We have selected U.S. LDC utility returns as they provide a robust data sample, outside of the Canadian market dominated by the Formula, and we consider them to be a close proxy to Canadian utility returns. This regression describes the relationship of newly authorized returns for regulated utilities as a function of

the quarterly prevailing long-term government bond yields (β_1). Because of the recent anomalous behavior of government bond yields to corporate bond yields associated with the current economic crisis, we have isolated the period from the 4th quarter of 2008 to the present in two ways: first by eliminating the period altogether; and second by using a dummy variable to isolate the period (β_2).

Table 1: Elasticity Factor Regression Results

	Intercept	t-stat$_\alpha$	β_1	t-stat$_1$	β_2	t-stat$_2$	R^2
Authorized Return Regression Model = Intercept + (X * bond yield) = Authorized Return							
US LDCs (1989 – Q3 2008)	0.0855	33.385	0.446	10.809			0.6070
US LDCs (1989 – Q1 2009)	0.0868	36.634	0.426	11.034			0.6160
US LDCs (1989 – 2009) with Dummy for (Q4 08 – Q1 09)	0.0855	33.637	0.445	10.859	0.467	1.349	0.6150

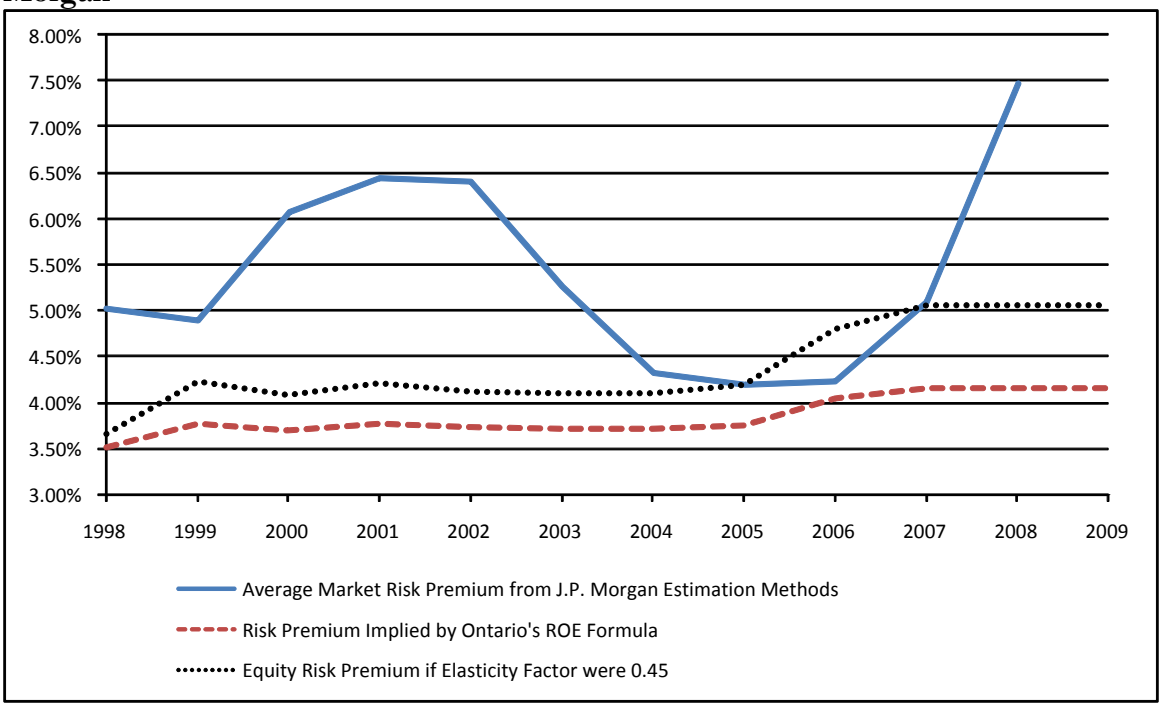
Although the above regression results do not address the current disassociation of government bonds and corporate capital costs, they do indicate, consistent with those we have estimated previously[25], that the typical elasticity factor of U.S. authorized returns to government bond yields is approximately 0.45 versus the 0.75 elasticity factor set out in the Formula. This implies that the risk premium should actually increase by approximately 0.55 for each percentage drop in the government bond yield as opposed to the 0.25 implied by the Formula. This misspecification of the elasticity factor has resulted in the systematic understatement of utility ROEs and equity risk premiums over the past decade. However, as illustrated below, correcting for that misspecification, based on historical data, would not provide an ROE result that is sufficiently responsive to existing economic conditions.

In Figure 9, Concentric has charted the equity risk premiums implied by the current Formula and that which would have been implied had the original elasticity factor of the Formula been set at 0.45 rather than 0.75. As the Figure shows, this difference alone could lead to

[25] Concentric performed similar regression analyses in each of the studies prepared for the OEB in 2007, and for Hydro One and the CLD in 2008, referenced earlier in this document.

differences in authorized returns over the period of nearly 100 basis points. We have then compared these implied risk premiums to the forward-looking market risk premium estimates provided by JP Morgan. In that analysis, JP Morgan provided its estimates of the market risk premium under various methodologies. We have averaged those estimates, that were derived annually, to compare with those produced by the actual and the hypothetical formulae. As the Figure below illustrates, the formulae, under either scenario, are not adequately responsive to the marked increase in equity risk premiums over the past two years.

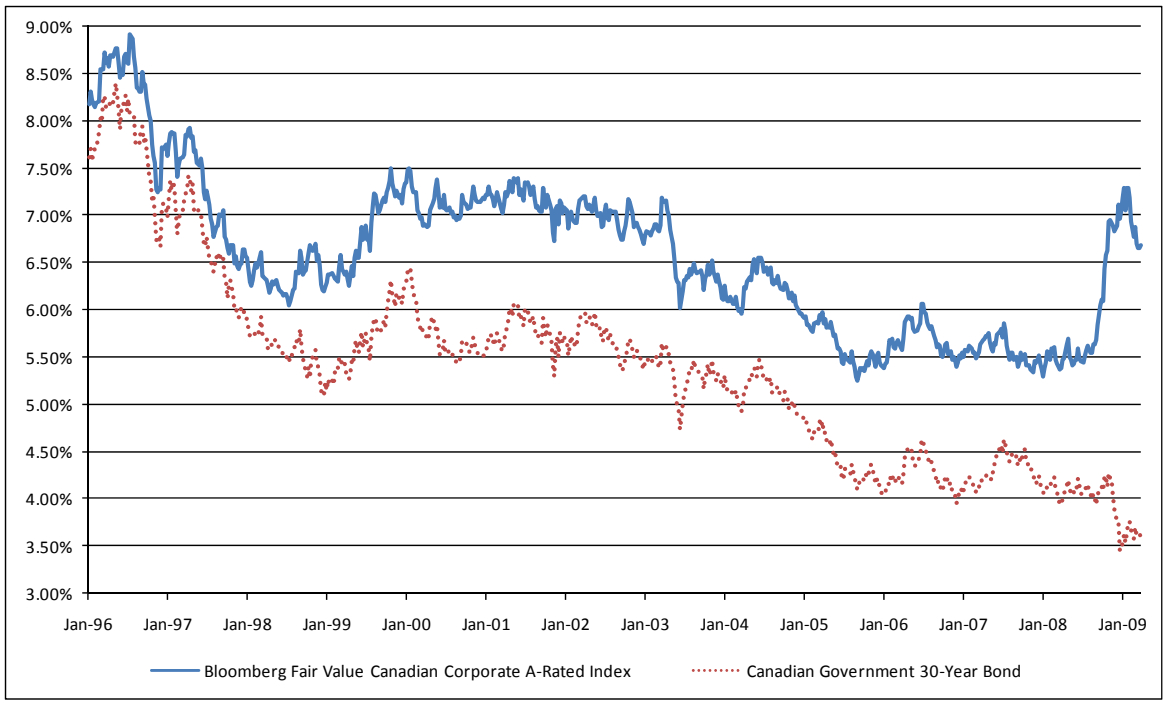
Figure 9: Comparison of Risk Premiums Implied by the Formula (using Elasticity Factors of 0.75 & 0.45) and Recent Estimates of the Equity Risk Premium by JP Morgan



Source: Risk Premiums implied by the current Formula and that implied assuming an elasticity of 0.45, were calculated by Concentric. The JP Morgan estimate is the average of three separate methodologies (Dividend Discount Model (DDM), Constant Sharpe ratio, and Bond-market implied risk premium) published in JP Morgan's November 2008 Presentation: The Most Important Number in Finance – The Market Risk Premium".

Like equity risk premiums discussed above, corporate borrowing costs and credit spreads, as shown previously, in Figure 6 have spiked. The Figure below precisely illustrates another fundamental flaw in the existing Formula.

Figure 10: Comparison of Canadian Government Bond Yields and Corporate Bond Yields



Source: Bloomberg

As corporate borrowing costs and credit spreads are rising and the risk of equity ownership is increasing, government bond yields are declining, which results in changes to ROEs produced by the Formula which are directionally incorrect. There is no logical justification for decreasing equity returns in the midst of rising capital costs. An equity holder would happily sacrifice the 39 basis point equity risk premium over corporate bond yields, suggested by the Formula, to secure a fixed and more certain return. Even though historically there has been a strong positive relationship between government and corporate bond yields, prevailing influences on each debt instrument, such as monetary policy on one hand and risk of default on the other, have caused the strong positive relationship to de-link and actually move in opposite directions. Even the spreads on provincial bonds are way up over prior levels from 30-35 basis points over 10-year Canada bonds previously, to 150 basis points recently. A temporary fix to the Formula does not address this inherent weakness. In the event that credit spreads migrate back to historical tolerances, the deficiencies in the Formula may be obscured but will not be resolved. It is for this reason that any formulaic

approach to setting a return for equity holders must be accompanied by a process of corroborating the results for reasonableness relative to other benchmarks.

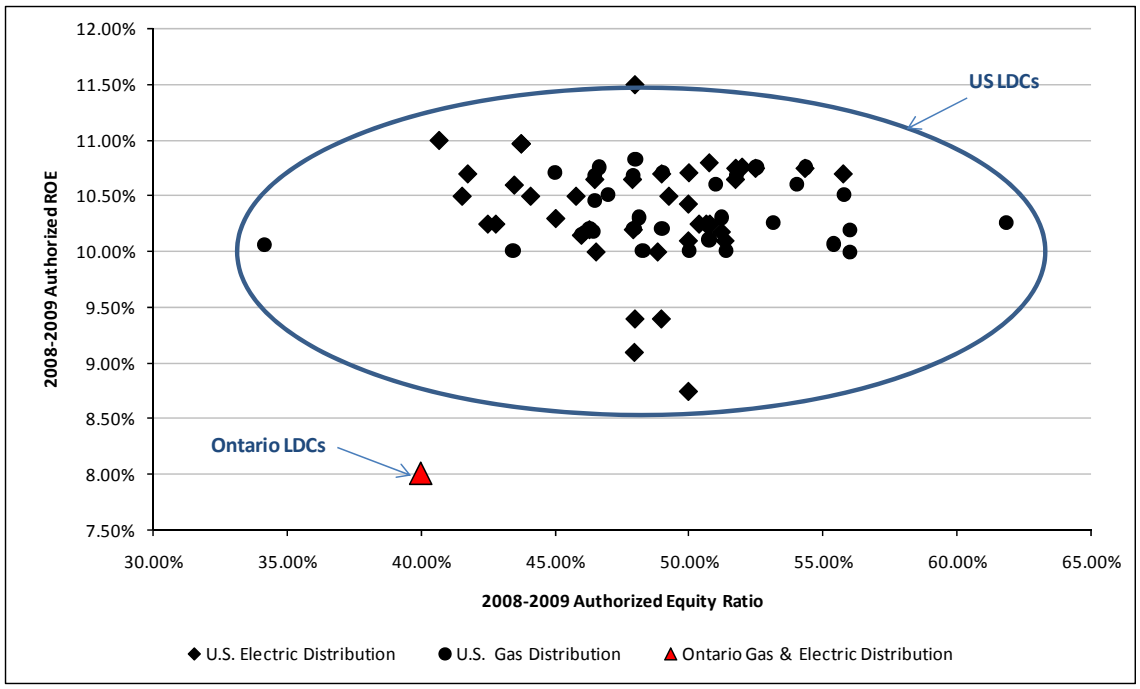
FORMULA RESULTS DO NOT SATISFY THE PRINCIPLES OF THE FAIR RETURN STANDARD

The results produced by the current Formula do not meet the fairness standard that serves as the cornerstone of utility regulation. This places Ontario's utilities, shareholders, and ultimately consumers at a distinct disadvantage in contrast to their peers. Eventually this leads to an inefficient deployment of resources and causes a loss of confidence in the regulatory compact that the Board upholds.

Through the research and analysis that Concentric conducted in its studies for the OEB and Hydro One and the CLD, as well as the evidence Concentric presented in its testimony in the ongoing Alberta Generic Proceeding, we have measured the adequacy of allowed returns for Canada's utilities through several alternative screens. Each of these measures points to the same conclusion: there is a deficiency between any reasonable measure of "fair" and currently allowed returns. As pictured previously in Figure 8, and measured against average U.S. utility returns, a "fairness deficit" has prevailed for a decade, and has grown in recent years under the current Formula.

Another perspective on reasonableness can be found in Figure 11. Figure 11 shows that every gas and electric utility in the U.S. has an ROE substantially higher than the Ontario formula rate, and all but one with substantially greater equity levels.

Figure 11: Comparison of U.S. Gas and Electric Utility ROEs and Equity Ratios to the Ontario Formula Result



In researching the causes for the gap in returns, there are no macroeconomic factors, regulatory risks, operating risks, or financial conditions of a sufficient magnitude to justify the disparity in returns between Ontario utilities and their U.S. counterparts. Some argue that Ontario's utilities are less risky or that the regulatory environment is more supportive as a basis for this gap. Concentric has examined the operating and financial characteristics of the utility companies, the regulatory regimes in which they operate, the macro-economic environment, and the ability of utilities to recover expenses and adjust revenues in the U.S. and Ontario. The results of these analyses repeatedly indicate that there is sufficient basis for comparison between the two countries and in Concentric's view, there are no appreciable differences that would justify the disparity that currently exists between the U.S. and Ontario ROE awards. The widespread adoption of a formula tied directly to steadily declining government bond yields in Canada is the principal cause.

This conclusion was reinforced by the NEB in its recent TQM Decision where the Board concluded:

> *A fair return on capital should, among other things, be comparable to the return available from the application of the invested capital to other enterprises of like risk and permit incremental capital to be attracted to the regulated company on reasonable terms and conditions. TQM needs to compete for capital in the global market place. The Board has to ensure that TQM is allowed a return that enables TQM to do so. Comparisons to returns in other countries would be useful, but challenging, in terms of differences in business risks and business environment. As a result, the Board is of the view that pipeline companies operating in the U.S. have the potential to act as a useful proxy for the investment opportunities available in the global market place.*

Additionally, current conditions in financial markets are making it difficult to raise debt or equity capital on reasonable terms. Utilities must maintain their financial flexibility in order to meet their continued obligations to provide safe and reliable service to their customers. Some degree of regulatory support during this turbulent economic period would help to assure the continued financial strength of Ontario's utilities. Considering the capital needs of the Province's utilities to fund system expansions to accommodate economic growth, this is particularly important.

The values produced by the current cost of capital methodology are not reasonable in the context of current market conditions. The deemed long-term debt rates follow more closely with actual market conditions since it is based on actual current spreads. The short-term borrowing spread no longer reflects actual market conditions and should be modified to incorporate current spreads over bankers' acceptances.

As illustrated through comparisons of returns earned by other utilities, the ROE tied to a single variable long Canada bond is not producing reasonable results. The gap is estimated between 146 – 218 basis points, representing the differences between the average 2008 Ontario allowed ROE; and those allowed for U.S. utilities and for TQM (by the NEB), respectively.. Factoring in current market conditions, this gap may approach 300 basis points.

2.1. IF THE VALUES ARE NOT REASONABLE, WHAT ARE THE IMPLICATIONS, IF ANY, TO A DISTRIBUTOR?

The implications of a below market ROE for a distributor are several. Recognizing that Concentric's analysis indicates that a gap has existed for several years, there is a compounding effect over time. Among these implications are: (1) Reduced earnings to fund re-investment in the utility, potentially diminishing service quality and ability to meet demand growth over time. Because utilities have long-term planning horizons, the problems caused by under-investment in infrastructure projects and system sub-optimization may not materialize for several years; (2) Reduced earnings for dividends to shareholders, diminishing the value of existing shares and impacting the ability to compete for additional equity capital. The ROE Formula, while well-intentioned, has resulted in a persistent and expanding gap in returns, which causes Canadian utilities to be less attractive to investors than other companies of comparable risk; (3) Negative impacts on debt coverage ratios and credit metrics, potentially increasing the cost of debt capital, and this impact is more pronounced where high debt/equity ratios prevail; and (4) Inability to meet the fairness standard, undermining trust in the Ontario regulatory compact and discouraging long-term utility investment.

3. WHAT ADJUSTMENTS, IF ANY, SHOULD BE MADE TO THE COST OF CAPITAL PARAMETER VALUES TO COMPENSATE OR CORRECT FOR THE CURRENT ECONOMIC AND FINANCIAL CONDITIONS?

Properly estimating the cost of capital, with emphasis on the cost of equity, requires the use of financial market analytics and corroborating sources. This may be accomplished using traditional techniques such as the CAPM, DCF, Equity Risk Premium, and their variations, including ATWACC. Short of such analysis, which would probably entail a generic cost of capital proceeding, it would be difficult to estimate the degree of adjustment required to re-base the ROE or correct for current market conditions. The magnitude of the gap, as noted above, is probably at least 146 – 218 basis points, but this would be a crude estimate without

the benefit of appropriate capital structure, business and financial risk assessment necessary to re-base ROE's for Ontario's utilities.

If Concentric were to suggest improvements to the Formula, there are two obvious flaws in the Formula that should be addressed. First, the reliance on Canada Long Bonds as a proxy for tracking capital market conditions has proven to be inadequate. In Concentric's view, a corporate utility bond would provide a better indication of the true capital market environment in which the utility must compete for capital day to day. This would provide a better proxy for borrowing costs, as it would include the corporate credit spread, a cost that utilities must bear. Use of a corporate bond yield for like-rated utilities would also resolve the current directional disparity between government bond yields and corporate borrowing costs. In Concentric's view, there is no reason that the credit spread (or the full corporate bond yield as opposed to the government bond yield) should not be considered in a utility's cost of capital determination. The corporate bond yield is the truest indicator of a utility's cost of debt and best reflects the current capital market conditions that the utility faces in accessing capital.

The other perceived defect in the Formula is the elasticity factor. As indicated in Table 1, our U.S. sample data supports an elasticity factor of 0.45, which tracks much more closely to changes in interest rates than the 0.75 factor. Performing a similar set of regressions as in Table 1, using both the Moody's A-rated corporate bond yield and also the Moody's A-rated utility bond yield result in the following:

Table 2: Elasticity Factors Regression Results – Corporate Bond Yields

	Intercept	t-stat$_\alpha$	β_1	t-stat$_1$	β_2	t-stat$_2$	R^2
Moody's A-Rated Utility Bond **Authorized Return Regression Model = Intercept + (X * bond yield) = Authorized Return**							
US LDCs (1989 – Q3 2008)	0.0749	23.476	0.503	11.968			0.6590
US LDCs (1989 – Q1 2009)	0.0743	23.725	0.510	12.299			0.6660
US LDCs (1989 – 2009 with Dummy for (Q4 08 – Q1 09)	0.0749	23.628	0.503	12.043	-0.340	-1.112	0.6710
Moody's A-Rated Corporate Bond **Authorized Return Regression Model = Intercept + (X * bond yield) = Authorized Return**							
US LDCs (1989 – Q3 2008)	0.0756	23.374	0.499	11.588			0.6450
US LDCs (1989 – Q1 2009)	0.0749	23.309	0.505	11.779			0.6460
US LDCs (1989 – 2009 with Dummy for (Q4 08 – Q1 09)	0.0756	23.527	0.499	11.663	-0.480	-1.544	0.6570

The results above indicate that the elasticity factors of U.S. returns to either Moody's A-rated Corporate Bond Yields or Moody's A-rated Utility Bond Yield are approximately 0.50.[26] Reducing the return formula's elasticity from 0.75 to 0.50 and basing the formula on the corporate bond yield would be improvements to the Formula. However, even with these suggested improvements, there is still a need for a corroborating process to verify that the Formula is producing reasonable returns.

[26] We have selected A-rated corporate bonds, however, we recommend using a like rated corporate bond to that of the utility whose cost of capital is being estimated.

4. GOING FORWARD, SHOULD THE BOARD CHANGE THE TIMING OF ITS COST OF CAPITAL DETERMINATION, FOR INSTANCE, BY ADVANCING THAT DETERMINATION TO NOVEMBER?

On the issue of timing, we understand the current Board practice is to set rates three months in advance of the effective test year. For example, for rates going into effect on May 1, the Board will utilize bond rate data for January. Per its February 24th letter to distributors:

> *The methodologies documented in the Board Report stated that the updated parameters will be derived from Consensus Forecasts and Bank of Canada/Statistics Canada three (3) months ahead of the implementation date for the proposed rates. Therefore, the January 2009 data will be used for estimating the Cost of Capital parameters used for setting new distribution rates to be effective May 1, 2009.*

The issue of timing presumably relates to test years for 2010 and beyond. Concentric is of the view that moving the timing from January to an earlier month, such as November, would not have a beneficial impact if the electric distributors' rates continue to go into effect in May. Given the recent volatility in financial markets, and continued use of the existing Formula, a date closer to the effective test year is advantageous. The primary consideration with respect to timing is to establish parameters that are close enough to the test year to provide forward looking estimates, but allow adequate time to perform the necessary budgeting functions for the subject year with the parameters. However, we understand that a number of LDCs have expressed concern about a rate year that commences on May 1st when the fiscal year for Ontario LDCs has been mandated to commence on January 1st. To address this concern a number of LDCs will be proposing a January 1st rate year in future cost of service rate applications. On that basis, cost of capital rates would have to be set much earlier. Concentric's view is 3 months prior to the test year, would provide relatively current parameters in advance of the test year.

5. ARE THERE OTHER KEY ISSUES THAT SHOULD BE CONSIDERED IF THE BOARD WERE TO ADJUST ANY OR ALL OF THE COST OF CAPITAL PARAMETER VALUES PRODUCED BY THE APPLICATION OF ITS ESTABLISHED FORMULAIC METHODOLOGY?

Under the ROE Formula, as currently designed, the OEB depends on a single variable (government bond yields) as the platform for utility ROE and the regulator is precluded from exercising informed judgment in the determination of a fair return. Current turmoil in

financial markets highlights this fundamental problem. A temporary fix may reduce the impact, but will not address the fundamental problem. Concentric believes the OEB and utility stakeholders will be better served by a comprehensive examination of alternative approaches to capital cost estimation. This will allow the Board to determine an approach that both allows sufficient flexibility to adapt to changing market conditions, and one that provides sustainably fair returns.

V. CONCLUSIONS

Current economic and financial market circumstances have had a material impact on the variables used by the Board in its cost of capital methodology. The bankers' acceptances rate is a reasonable indicator of short-term utility debt costs, but while that rate has fallen over the past 6 months, credit spreads have widened considerably. The current 25 basis point differential requires recalibration to remedy this problem. Long-term debt rates and access to debt markets have also been materially impacted by the current environment, but the reliance on investment grade utility spreads over Long Canadas does a reasonable job of tracking actual market conditions. The greatest gap between estimated and actual capital costs lies in ROE. As yields on Long Canadas have been driven lower, all apparent indicators of equity costs have pointed in the opposite direction, exaggerating a trend which began with the steady decline on government bond yields. We ultimately conclude that capital cost values arising from the Board's existing approach, with particular focus on the ROE and short-term debt rate, would not meet an objective test of fairness. It may be possible to temporarily recalibrate the cost of equity with a transitional "adder" for 2009, but a sustainable solution requires a full evaluation of the cost of capital accounting for both current and anticipated market conditions.

If the Board determines that a short-term solution is necessary, we would recommend a recalibration of both the short-term debt rate and the cost of equity. In order to do so, we would recommend the following adders for the 2009 test year:

- Short-term debt rate – spread over banker's acceptance rate should be increased from 25 basis points to 175 basis points for the most credit worthy utilities, to 250 basis points for utilities below the A-rated level.
- Return on Equity – creation of a temporary ROE adder to the results produced by the current Formula, to bridge the gap, equal to no less than 200 basis points.