

April 17, 2009

Board Secretary
Ontario Energy Board
P.O. Box 2319
27th Floor
2300 Yonge Street
Toronto, ON - M4P 1E4

Via Board's web portal and by courier

Dear Board Secretary:

Re: Board File No. EB - 2009- 0084
The Cost of Capital in Current Economic and Financial Market Conditions

The Electricity Distributors Association (EDA) is the voice of Ontario's local distribution companies (LDCs). The EDA represents the interests of over 80 publicly and privately owned LDCs in Ontario.

The EDA would like to provide the attached submission in response to the Ontario Energy Board's initiative to determine whether current economic and financial market conditions warrant an adjustment to the values of the Cost of Capital Parameters set by the Board's established methodology in February 2009. The EDA's submission was prepared by Ms Kathy McShane of Foster Associates Inc. in consultation with EDA members.

Yours truly,

“Original Signed”

Richard Zebrowski,
VP, Policy and Corporate Affairs

Attached: EDA submission

dp:

RESPONSE TO ONTARIO ENERGY BOARD

Cost of Capital Parameter
Updates for 2009 Cost of
Service Applications

Prepared for Electricity
Distributors Association

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INTRODUCTION

On February 24, 2009, the Ontario Energy Board (“OEB” or “the Board”) issued its Cost of Capital Parameter Updates for 2009 Cost of Service Applications calculated using the formula methodologies set out in its December 20, 2006, *Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario’s Electricity Distributors* (“Board Report”). The three cost of capital parameters for 2009 Cost of Service Applications and the corresponding values set in March 2008 for 2008 Cost of Service Applications are presented in the table below.

Table 1

Cost of Capital Parameter	February 2009	March 2008
Short-Term Debt rate	1.33%	4.47%
Long-Term Debt rate	7.62%	6.10%
Return on Equity	8.01%	8.57%

On March 16, 2009 the OEB initiated a consultative process to help it determine if current financial and economic conditions warrant an adjustment to any of the parameter values published in February. In its March 16, 2009 letter, the Board noted in particular the deterioration in economic and financial conditions in 2008 and 2009 and the decline in the spread between the long-term debt rate and the return on equity. The Board also indicated that its established formulaic methodology itself is not at issue.

The Board has invited interested stakeholders to provide written comments on five issues to assist in better understanding whether current economic and financial market conditions have an impact on the reasonableness of the February 2009 calculated cost of capital parameters values and to help the Board to determine if, when and how to make any appropriate adjustments to any of those values.

The Electricity Distributors Association (“the EDA”) has requested my assistance in responding to the Board. The following represents my analysis and the recommendations which EDA adopts.

Background

The Board has been using a formulaic approach to establish the cost of capital for Ontario electricity distributors since 1999. The formula approach used to set the return on equity was first set out in the Board’s March 1997 *Draft Guidelines on a Formula-based Return on Common Equity for Regulated Utilities*, applied first to the Ontario natural gas distributors, then to Hydro One’s transmission and distribution operations, and finally to the municipally-owned electricity distributors (“MEUs”) in RP-1999-034 (January 18, 2000). A formula approach to establishing a deemed cost of long-term debt for electricity distributors was first adopted in RP-1999-034 and was later amended in the December 2006 *Board Report* when the OEB replaced the four-tiered approach to capital structure with a single deemed capital structure (60% debt/40% equity) for all Ontario electricity distributors.¹ The methodology for establishing the short-term debt rate was first adopted in the *Board Report* in conjunction with the establishment of a four percentage point short-term debt component in the deemed capital structures. The existing methodologies for establishing the three cost of capital values used by the Board are briefly described below.

Short-term Debt Rate

The short-term debt rate which applies to the deemed 4% short-term debt component of the capital structure, reflects the average of the 3-month bankers’ acceptance rate plus a fixed spread of 25 basis points. The short-term rate of 1.33% was determined using the

¹ In RP-1999-034, the OEB adopted four separate deemed capital structures for the electricity distributors based on size as a proxy for differences in business risk. The deemed common equity ratios ranged from 35% for the largest distributors to 50% for the smallest. The deemed costs of long-term debt also differed by size, encompassing a 45 basis point range from largest to smallest. With the adoption of a single capital structure in the *Board Report*, a single deemed debt rate (both short-term and long-term) was established for all distributors, irrespective of size.

daily January 2009 average of the 3-month bankers' acceptance rates as published on the Bank of Canada's website plus 25 basis points. The interest rates used for variance and deferral accounts are set with the same methodology, updated quarterly. As shown in the table above, the rate as per the methodology has decreased by 3.14% since the last time the Board established the rate in March 2008.

Long-term Debt Rate

The deemed long-term debt rate represents a forecast of the long-term (30-year) Government of Canada ("GOC") bond yield plus a spread to reflect the difference between the cost of debt to the federal government and the cost of similar term debt to a utility with debt ratings in the A/BBB (investment grade category). The deemed long-term debt rate is determined by first forecasting the long-term GOC bond yield. The GOC yield is a forecast based on Consensus Economics, *Consensus Forecasts'* forecast of the 10-year GOC bond yield plus the average daily actual spread between 10-year and long-term GOC bond yields during the same month that the GOC bond yield forecast was issued. The 7.62% deemed long-term debt rate represents the forecast long-term GOC yield of 3.714% based on the January 2009 *Consensus Forecasts* plus the actual January 2009 average spread of 3.91% between corporate bond yields and the long-term GOC bond yield. The forecast deemed long-term debt rate has increased by 1.52% since the Board established the cost of capital parameters in March 2008 (7.62%-6.10%).

Return on Equity

The OEB sets the return on equity ("ROE") for the Ontario utilities using a formula which adjusts the allowed return on equity from its previous value by 75% of the change in the forecast long-term GOC bond yield. The formula has not been amended since its initial adoption for the natural gas distributors in 1997. The ROE formula is as follows:

$$\text{ROE}_{\text{new}} = \text{ROE}_{\text{old}} + .75 (\text{GOC yield}_{\text{new}} - \text{GOC yield}_{\text{old}})$$

The new GOC yield to be used as an input for determining the ROE for rates to be in effect in May 2009 using this methodology is 3.714% (as described above). The ROE_{old} and GOC yield_{old} values used in the application of the formula are 9.35% and 5.5%, respectively. These values were determined by the Board in Hydro One Network Inc.'s RP-1998-0001 Decision and specified in the *Board Report* as the starting points for updates for the electricity distributors' ROE. The resulting ROE is 8.01% as shown below:

$$\text{ROE} = 9.35\% + .75 (3.714\% - 5.5\%)$$

$$\text{ROE} = 8.01\%$$

The 8.01% ROE represents a reduction from the May 2008 value of 8.57% of slightly in excess of 0.50%.

RESPONSES TO THE OEB'S QUESTIONS

- 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?**

Historical Backdrop

In January 2007, the Bank of Canada issued its regular *Monetary Policy Update*, reporting that the global economy continued to expand robustly, long-term interest rates, market volatility and credit spreads remained low in most countries, many global equity indexes had recently recorded either multi-year or all-time highs, and financing conditions remained favourable. The S&P/TSX Composite hit a record close in July 2007.

The favourable conditions would not last. As the then Bank of Canada Governor David Dodge noted in September 2007, the decline that had been experienced in longer-term

interest rates had led investors to step up their demand for riskier assets that would deliver greater returns than investments with a lower risk. The search for higher returns had led to a narrowing of spreads between the yields of risky assets (e.g., lower-rated corporate bonds) and the yields on government bonds. Governor Dodge also pointed out that the narrowing of risky spreads had become so pronounced and persistent that many, including the Bank of Canada, had begun to question whether these spreads adequately reflected the underlying credit risks and that a re-pricing of risk was probably necessary.

In late July/August 2007, the subprime mortgage market in the U.S. and the market for structured financial products, including securitized products based on those mortgages, began to unravel. Over the past 18 months, what was initially dubbed the “subprime mortgage crisis” has spread to virtually all areas of the global financial markets and to the global real economy.

In the latter half of 2007, following announcements of the rising rates of delinquencies and defaults in subprime mortgages and the widespread credit ratings downgrades of securitized products, credit spreads began to rise. As liquidity and valuations of securitized financial product markets – which were held by financial institutions across the globe – declined, investor appetite for risk fell sharply, leading to a widespread repricing of risky financial assets, including more conventional financial assets. The rising investor risk aversion manifested itself in a “flight to quality” with falling yields on safe government securities. In Canada, 90-day Treasury bills and long-term (30-year) Government of Canada bond yields, which had started to inch up during the first half of the year, reversed course. By the end of 2007, Treasury bills had declined by approximately 75 basis points from their mid-year peak; 30-year GOC bond yields had fallen by 35 basis points. Yields on long-term investment grade utility bonds began to increase and corresponding spreads over government bond yields widened.

Conditions in the global financial markets and economy deteriorated dramatically during 2008, particularly in the second half of the year. During 2008, a number of large U.S. and European financial institutions collapsed or neared collapse. Of particular note was

the declaration of bankruptcy of the U.S. investment bank, Lehman Brothers, in September. As the U.S. government allowed Lehman Brothers to fail, investors' concerns with the fragility of the global financial system intensified.

With severe constraints on lending, Central Banks worldwide slashed target rates to increase the flow of funds through the global financial system. The Bank of Canada cut its overnight target rate nine times between late 2007 and March 2009, from 4.5% to 0.5%. Ninety-day Treasury bill yields dropped from just over 3.75% at the end of 2007 to under 0.5% by the end of March 2009. Bankers' Acceptance rates followed the downward trend in short-term rates, from a reported level of 4.7% at the end of 2007 to an average of approximately 2.4% during the last quarter of 2008 and to 0.55% in March 2009. Long-term GOC bond yields also continued to fall, as the "flight to quality" continued. At the end of March 2009, the 30-year GOC bond was yielding 3.6%, down 0.5% from the 4.1% yield prevailing at the end of 2007.

Although the Canadian debt markets were not as severely hit as the U.S. markets, both bank and public market funding in Canada were severely curtailed during the fourth quarter of 2008. The Bank of Canada reported in its Winter 2008-2009 *Business Outlook Survey* published in January 2009 that "The balance of opinion on credit conditions reached a record-high level in the winter survey, as nearly two-thirds of firms reported tighter credit conditions over the past three months relative to the previous three months. The majority of these firms characterized the change as being significant and felt that it was driven mainly by a market-wide adjustment in risk premiums. Most firms reported that the tightening came in the form of higher borrowing costs. The deterioration in credit conditions is widespread across sectors." Gross new issues of corporate bonds in the fourth quarter of 2008 totaled only \$7.8 billion compared to \$23 billion a year earlier.²

² Bank of Canada, *Banking and Financial Statistics*, March 2009.

Even highly rated corporations found that the market was not receptive to long-term debt issues. Those who did place new debt did so with price concessions, often significant. Between September and December 2008, only one regulated Canadian utility raised debt with a term to maturity greater than five years. In November 2008, Enbridge Pipelines (rated A (high) by DBRS and A- by Standard & Poor's) raised 10-year debt at a spread of 290 basis points.³ One year earlier, the corresponding spread was 85 basis points. Enbridge Gas (rated A and A- by DBRS and S&P respectively) raised 5-year debt at approximately the same time, at a spread of 283 basis points; a year earlier, the same term debt would have been available at a spread of less than 70 basis points. Less than a month later, Nova Scotia Power (rated A (low)/Baa1/BBB by DBRS/Moody's/S&P) raised 5-year debt at a spread of 400 basis points above the 5-year GOC bond yield. While long-term GOC bond yields fell by approximately 50 basis points during 2008, yields on long-term utility bonds rose. At the end of 2008, the yield on long-term A/BBB rated utility bonds averaged approximately 7.5%, a spread of just over 400 basis points above the 30-year GOC bond (3.45%).

During the first quarter of 2009, as windows in the long-term debt market became available, there were several long-term utility debt issues,⁴ summarized in the table below.⁵

Table 2

Company	Week Issued	Debt Ratings DBRS/Moody's/S&P	Amount (\$M)	Term (years)	Coupon (%)	Spread (basis points)
TransCanada	2/13/09	A/A3/A-	\$400	30	8.05	430
FortisAlberta	2/13/09	A(low)/Baa1/-	\$100	30	7.06	320
Terasen Gas	2/20/09	A/A3/A	\$100	30	6.55	285
Hydro One	2/20/09	AA(high)/Aa3/A+	\$300	30	6.03	232
CU Inc.	3/6/09	A(high)/-/A	\$150	30	6.50	275

³ RBC Capital Markets, *Credit Weekly*

⁴ TransCanada issued \$500 million of 5-year debt at the same time as its 30-year issue at a spread of 317 basis points over the 5-year Canada. CU Inc. issued \$120 million of 15-year debt at the same time as its 30-year issue at a spread of 265 basis points over the curve.

⁵ Hydro One and CU Inc. typically have the lowest debt costs of any of the utilities who are regular issuers of debt in the public markets and thus their issue spreads are lower than the spreads that would have applicable to a typical A/BBB rated utility at the time.

During January and February 2009, the indicated spreads for new 30-year issues by utilities rated A/BBB which regularly issue debt into the public markets averaged approximately 395 basis points. By the end of March, spreads had tightened somewhat, but continue to average about 350 basis points, significantly in excess of their historic levels.⁶

The repricing of risk was not confined to the fixed income markets. During the first half of 2008, the equity market in Canada had held up remarkably well, hitting its highest level ever in June. In the second half of the year, however, equity markets around the world plummeted as the credit crisis intensified, commodity prices fell sharply, economic growth slowed, and concerns about a global recession grew. From its October 9, 2007 peak of 1565 to its 2009 year-to-date trough at 676 in March, the S&P 500 lost 55% of its value. The corresponding decline in the S&P/TSX Composite from its June 2008 peak to its 2009 year- to-date trough in March was 50%. Over this same period, the dividend yield on the S&P/TSX Composite rose by 40%; the corresponding price/earnings ratio (which represents what investors are prepared to pay for the equity market composite's stream of earnings) declined from 17.5 times to 12.5 times. Both changes signal a significant increase in the market cost of equity capital.

Equity market volatility also rose significantly in both countries during 2008, a further indicator of an increase in the market cost of equity. The VIX index, an equity volatility index introduced in 1993 by the Chicago Board Options Exchange (often referred to as the "Fear Gauge"), is an indicator of investor risk aversion. An increase in the VIX index signals rising risk aversion and an increase in the required equity risk premium. The index indicates that, during much of 2004-2006, the equity market was perceived as unusually stable; trading within a range of 10 to 19, and averaging 13.5. The VIX index rose steadily throughout much of 2007; during the first eight months of 2008 it averaged 23, 70% higher than its 2004-2006 average. During the fourth quarter of 2008, as

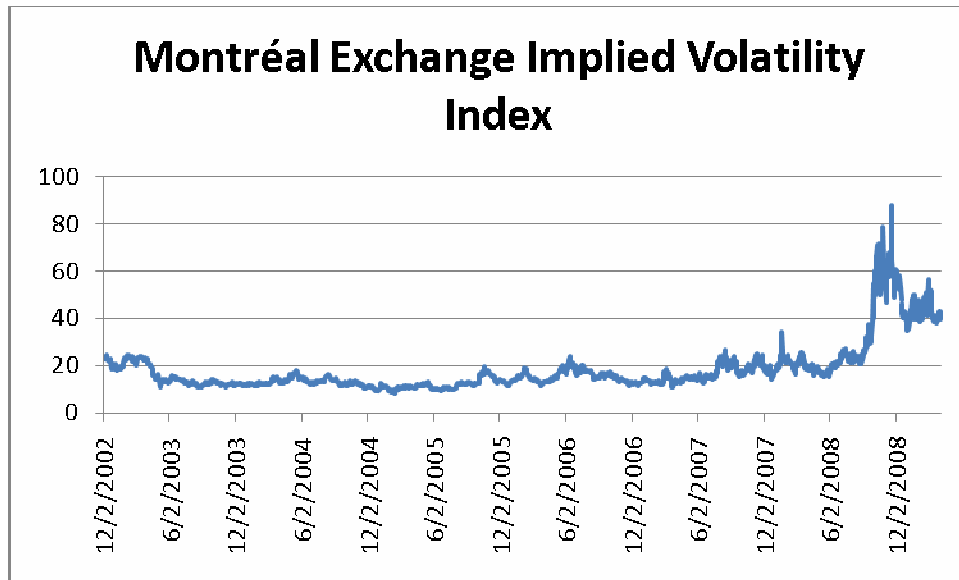
⁶ RBC Capital Markets, *Indicative New Issue Pricing*, various issues, January to March 2009.

investor concerns accelerated, the index jumped sharply, peaking at almost 80 in October 2008, its highest level since inception, and averaging close to 60 during the entire 4th quarter. While the volatility has declined since 4th Quarter 2008, the VIX is still trading at levels much higher than historically, at 45 on average during the first quarter of 2009. To put this in perspective, on only six days prior to the onset of the current financial market crisis in August 2007 has the index traded at or above 40.

In Canada, the Implied Volatility Index (“MVX”) introduced by the Montréal Exchange in 2002 tells a similar story. The Montréal Exchange states that the “MVX is a good proxy of investor sentiment for the Canadian equity market: the higher the Index, the higher the risk of market turmoil. A rising Index therefore reflects the heightened fears of investors for the coming month.”⁷ Over the period subsequent to the start of the current financial crisis, the MVX has also signaled increasing risk aversion and, therefore, an increase in the equity risk premium. Like the VIX, the MVX was relatively stable prior to the onset of the financial crisis. During much of 2002-2007, the MVX traded within a range of 8 to 24, averaging 14.75. As with the VIX, during 2008, the MVX rose sharply, peaking at almost 90 in November 2008, its highest level since inception, averaging close to 60 during the 4th quarter. While volatility has declined, the MVX continues to trade substantially above its 2002-2007 levels, averaging over 40 in the first quarter of 2009.

⁷ www.m-x.ca/indicesmx_mv_x_en.php

Figure 1



Source: Montréal Exchange

Impact on the Variables Used by the OEB in its Cost of Capital Methodology

From the overview of the recent trends in the financial markets, the following conclusions can be drawn as regards the specific variables used in the Board's cost of capital methodology:

- (1) With respect to Bankers' Acceptance rates, which the Board uses to deem the short-term debt rate, the downward trend and recent levels reflect the initiatives of the Bank of Canada to keep short-term rates low. The objective is to enhance the flow of credit in the economy, and, in conjunction with other measures taken by the Bank, to promote recovery from the recession into which Canada and other economies globally have fallen.

- (2) Long-term corporate bond yields and spreads, used by the OEB to set the deemed long-term debt rate, have increased dramatically, partly as a result

of the repricing of risk across all forms of risky securities. While an economic downturn is normally accompanied by an increase in spreads, the levels observed during the downturn in this cycle far exceed those observed in prior downturns. To put this in perspective, during the sharp 1990-1991 recession, spreads between A/BBB rated long-term utility and long-term GOC bond yields peaked at 180 basis points. As noted above, in the last quarter of 2008, A/BBB utility bonds were yielding more than 400 basis points above long-term Canada bond yields.

- (3) With the “flight to quality”, long-term GOC bond yields, used by the Board to set the return on equity, have been pushed down to levels which have not been observed since the mid-1950s. The “flight to quality” has been layered over circumstances that already serve to keep long-term GOC bond yields at abnormally low levels. Until the recent financial and economic crisis, the Government of Canada had achieved an unbroken series of budget surpluses dating from 1997. With the surpluses, the supply of long-term debt (both in absolute and relative – to the size of the economy – terms) has declined. At the same time, demand for that debt has remained high. For example, many financial institutions rely on default-free long-term government debt to match the terms of their assets and liabilities. An imbalance between the supply of and demand for long-term Government of Canada bonds had already kept yields abnormally low, even before investors turned to the safe haven of government-issued securities.
- 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?

The values produced by the Board's Cost of Capital methodology, in the EDA's view, are intended to be representative of the costs that the typical electricity distributor would face if it were accessing the capital markets on its own, that is, on a stand-alone basis. The Board's approach effectively presumes that, on a stand-alone basis, each of the distributors would be able to access debt capital (both short-term and long-term) on similar terms and conditions to an investment grade utility (that is, one with debt ratings of A/BBB). With respect to the return on equity, the Board has expressed the view that

And, as a matter of law, utilities are entitled to earn a rate of return that not only enables them to attract capital on reasonable terms but is comparable to the return granted other utilities with a similar risk profile.⁸

While, in practice, the circumstances (e.g., small size) of many of the individual electricity distributors would not qualify them as investment grade utilities, the EDA accepts the premise for the purpose of this consultation, recognizing that the Board is attempting to balance administrative efficiency with fairness.

With respect to the specific cost of capital values established in the Board's February 24, 2009 cost of capital letter and the relationships among them, the EDA has concluded that:

- (1) The deemed 1.33% cost of short-term debt, which reflects the January 2009 average daily yield of BAs, plus a fixed spread of 25 basis points, significantly understates the cost at which an A/BBB rated utility would be able to access short-term debt.

⁸ EB-2005-0421 (Toronto Hydro), April 12, 2006, pages 32-33.

- (2) The deemed cost of long-term debt derived from the forecast long-term GOC bond yield plus the actual spread between investment grade corporate and long-term GOC bond yields is reasonably representative of the cost of a long-term issue that a A/BBB rated Canadian utility would have incurred at the time the Board established the deemed long-term debt rate.
- (3) The calculated return on equity using the Board's automatic adjustment formula does not accurately reflect recent trends in the cost of equity. Because the return on equity is established by reference to long-term GOC yields, which have been moving in the opposite direction from the costs of risky securities, due to the "flight to quality", the formula return on equity has declined since May 2008. Other capital market indicators demonstrate that the cost of equity has risen over that time period.

Short-term Debt Rate

The short-term debt rate, which represents the January 2009 average Bankers' Acceptance rate plus 25 basis points, should be a proxy for the rate at which the electricity distributors' could raise short-term debt to finance the 4% deemed short-term debt component of capital structure. While short-term debt for utilities is commonly priced off of BAs, the spread over BAs that each utility would incur (which would include stamping fees and stand-by fees) differs relatively widely by company as well as by the timing of the negotiation of the related credit facility.

What is clear, however, is that the typical Canadian electricity distributor would be paying significantly more than BAs plus 25 basis points today for short term debt. While the specifics of individual utilities' short-term debt arrangements are not typically widely available, the following table provides a sampling of terms currently available and expected to be available upon renegotiation to investment grade Canadian electric

utilities. Actual spreads experienced by utilities renegotiating credit facilities for 2009 have increased in the range of 500% over prior year levels.

Table 3

Company	Assets (millions of \$)	S&P Debt Ratings	Date Negotiated	Terms	If Renegotiated Today ^{1/}
A	400	A	12/08	BAs +175 bps for revolving credit facility	BAs +250 bps
B	1500	A-	12/08	BAs + 100 bps for Commercial Paper Backstop	BAs plus 200-225 bps
C	1000	A (by DBRS)	12/06	BAs + 61.5 bps at current rating; BAs + 120 bps if ratings were in mid-BBB range	150% to 200% of current rates

^{1/} Based on discussions between companies and lenders

The increase in costs reflects the increased financing costs that the lenders themselves are facing. The increased financing costs of the lenders are passed through to their customers. Royal Bank of Canada, a key source of short-term credit, for example, at the beginning of 2007, could raise two-year financing at a spread of about 30 basis points above two-year GOC bond yields. It is currently facing spreads for the same term financing of approximately 145 basis points.

In light of the above, it is clear that the formula used by the Board, that is BAs plus a fixed spread of 25 basis points, results in a cost of short-term debt which significantly understates the cost which the typical electricity distributor would incur to raise short-term debt.

Long-term Debt Rate

As noted earlier, in its February 2009 cost of capital letter, the OEB set the long-term deemed utility debt rate at 7.62%, which represents a forecast long-term GOC bond yield of 3.71% plus the observed January 2009 spread between the yields on an index of corporate bonds and the corresponding yield on long-term GOC bonds. The calculated spread was 3.91%.

Based on information available specific to Canadian utilities, the indicated spread and the resulting deemed cost of debt are reasonable. That conclusion can be drawn from actual debt issues which were done in a time frame similar to that used by the Board to calculate the deemed long-term debt rate.

As shown in Table 2 above, in mid-February 2009, TransCanada Pipelines issued 30-year debt in Canada at a rate of 8.05%. TransCanada is rated in the A category by all three major debt rating agencies. The indicated spread over long-term GOC bond yields was 430 basis points, compared to the spread of 391 basis points established by the Board using January data. FortisAlberta also issued long-term debt in mid-February 2009, at a spread of 320 basis points over long-term GOC bonds. FortisAlberta is rated A (low) by DBRS and Baa1 by Moody's. The average spread of the two issues was 375 basis points, within approximately 15 basis points of the spread used by the Board to set the deemed long-term debt rate. While Terasen, CU Inc. and Hydro One issues included in Table 2 show lower spreads, they (1) occurred later than the TransCanada and FortisAlberta issues, reflecting some subsequent tightening of spreads, which may not persist; and (2) the issuers have an average rating higher than the A/BBB implied rating which underpins the deemed utility debt rate. Most recently, in early April 2009, ENMAX, a municipal utility which owns electric distribution and transmission facilities in Alberta, rated A(low) by DBRS and BBB (high) by S&P issued five-year debt at a spread of 400 basis points. The corresponding spread for a long-term issue would have been higher.

A further demonstration of the reasonableness of the Board’s deemed long-term debt rate can be made using the indicated spreads for new 30-year issues by the universe of energy utilities. Each week, RBC Capital Markets publishes its best estimates of the spread at which regular issuers could issue new long-term debt. Table 3 below provides the average indicated spread from December 2008 to February 2009 (a three month period encompassing the full month prior and subsequent to the January period used by the OEB) for all of the issuers which were covered by RBC over the full period. The average spread for a 30-year new issue was approximately 390 basis points, virtually identical to the spread used by the OEB to set the deemed debt rate.

Table 4

	DEBT RATINGS DBRS/Moody’s/S&P	Spread
Canadian Utilities Inc.	A / - / A	368
CU Inc.	A(High) / - / A	318
Enbridge Gas Distribution Inc.	A / - / A-	334
Enbridge Inc.	A/ Baa1 / A-	511
Enbridge Pipelines Inc.	A(High) / - / A-	334
ENMAX Corp	A(Low) / - / BBB+	481
EPCOR Utilities Inc.	A(Low) / - / BBB+	485
FortisAlberta Inc	A(Low) / Baa1 / A-	368
FortisBC Inc	- / Baa2 / -	389
Hydro One Inc.	A(High) / Aa3 / A+	278
Nova Scotia Power Inc.	A(Low) / Baa1 / BBB	422
Terasen Gas Inc.	A / A3/ A	337
Toronto Hydro Corp	A / - / A	336
TransCanada Pipelines Ltd.	A / A3 / A-	480
Union Gas Ltd.	A / - / BBB+	359
Westcoast Energy Inc.	A(Low) / - / BBB+	394
Average		387

Source: RBC Capital Markets, *Indicative New Issue Pricing*, various issues, December 2008 to February 2009.

Both the actual utility debt issues made in a similar time frame to the OEB’s determination of the deemed debt cost and the indicated spreads for new long-term issues for the universe of investment grade utilities demonstrate that the deemed long-term debt cost set by the OEB is reasonable.

Return on Equity

The return on equity calculation of 8.01% provided in the Board's February 2009 cost of capital letter suggests: (1) that the cost of equity declined between March 2008 and February 2009 and (2) that the spread between the utility cost of debt and the utility cost of equity is only 0.39%. Neither of these outcomes is reasonable.

The decline in the calculated cost of equity results from the construction of the automatic adjustment formula, which adjusts the return on equity by 75% of the change in the forecast long-term Government of Canada bond yield.

The rationale for using the long-term Government of Canada bond yield is two-fold. First, in principle, the trend in the long-term GOC yield, in the absence of unusual factors, should be an indicator of the broad trend in the cost of capital. Second, the long-term GOC yield serves as a proxy for the risk-free rate for the application of the risk premium test, to which the Board has given most weight in setting the "base" return on equity. However, under current circumstances, the GOC bond yield does not serve as an indicator of the broad trend in the cost of capital. Instead, the recent downward trend in the long-term GOC bond yield is signaling an increase in the market cost of capital, as fearful investors have taken safe haven in default-free government securities. As discussed above, the increased spreads required on short-term debt facilities for investment grade utilities, the increased cost of long-term debt to investment grade utilities, and the massive sell-off in the equity markets (with the resulting declines in price/earnings ratios and increased dividend yields) are all pointing to a higher cost of capital generally, and a higher cost of equity capital in particular.

With respect to the indicated spread of only 39 basis points between the indicated deemed long-term debt rate and the return on equity which is the outcome of the formula, the implication is that investors would be willing to assume equity risk at a minimal premium to the rate they could obtain by investing in the same company's long-term debt. Equity

investors are subordinate to bond investors. In other words, equity investors do not receive a return until all fixed income obligations have been satisfied. There is no logical reason to conclude that, particularly in the current capital market environment, the equity investor's required premium over the yield on long-term debt has shrunk to the level implied by the application of the automatic adjustment formula. Instead, the logical conclusion is that the "flight to quality" and the resulting decline in the long-term GOC bond yield are resulting in a required return on equity which is moving in the opposite direction to the formula result.

As one Canadian utility equity analyst noted in a report issued in January 2009,

With higher equity risk premiums and higher long bond yields for Energy Infrastructure companies that are trading at levels close to the allowed ROEs, it appears that the formula is broken. Forgetting the magnitude of change, it appears that the formula is producing a result that is directionally incorrect (i.e., ROEs declining yet corporate bond yields and equity risk premiums are rising).⁹

Another Canadian utility equity analyst reported that

Canada's 14-year-old regulated ROE formula for pipelines and utilities across the country is starting to show cracks. It served the industry well for years, but its key point of attraction – a simple and direct link to the government benchmark bond yield – is now its downfall. Government bond yields now bear little resemblance to any private company's actual cost of capital.

Further the utility analyst stated,

More importantly, the required coupon on new debt for a BBB+ or A-infrastructure company in Canada is now in line with the after-tax, regulated ROE (about 8.4%). This convergence of the market cost of debt and the regulated ROE is completely inconsistent with the long-held principle that regulated ROEs should be comparable to returns on investments of similar risk.¹⁰

⁹ RBC Capital Markets, *Energy Infrastructure: Allowed ROEs: The Formula Is Broken, but Will Regulators Fix It?*, January 16, 2009.

¹⁰ Macquarie Research Equities, *Canadian Energy Infrastructure, ROE Formula May Finally Bite the Dust*, February 23, 2009.

The standard which underpins the determination of the cost of capital for the Ontario electricity distributors is the fair return standard. This standard has been applied by the Board to both government-owned and investor-owned utilities. The fair return standard calls for an allowed return which: (1) allows the utility to attract capital on reasonable terms and conditions; (2) will allow the utility to maintain its financial integrity; and (3) is commensurate with returns on investments of similar risk. The cost of short-term debt and the return on equity which results from the application of the formula result in an overall return to the electricity distributors that does not meet the fair return standard.

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?

In responding to this question, both EDA and I were mindful of the admonition in the Board's March 19, 2009 letter that indicated that the Board's formulaic approach itself was not at issue. In that context, I attempted to identify approaches to correct for the current economic and financial conditions which retain a formulaic approach to establishing the cost of capital parameters for rates to be in effect May 1, 2009.

Short-term Debt Rate

Since there are significant differences among the electric distribution utilities in Ontario, there is not likely to be a perfect "one size fits all" solution. However, the available data strongly suggest that investment grade utilities which negotiated short-term credit facilities at approximately the same time as the Board's cost of capital parameters were calculated would have faced a spread above BAs in the approximate range of 150-200 basis points and that rates negotiated today would be higher. As a result, a deemed short-term debt rate equal to BAs (as previously calculated by the Board) plus 175 basis points is a reasonable cost for the purpose of rates to be effective May 1, 2009.

Long-term Debt Rate

The deemed long-term rate calculated using the Board-approved formula appropriately reflects market realities and the data presented in this report demonstrate that no change to the formula is required.

Return on Equity

In the absence of a full review of the return on equity, which would include quantitative testing of factors which determine a fair return, I identified a number of possible formula approaches which the Board could implement to reset the allowed return on equity. These were evaluated using criteria which provide a reasonable framework for assessing alternative approaches.

These criteria are:

- (1) Transparency and Objectivity of Data Requirements
- (2) Simplicity
- (3) Accuracy

In applying the first criterion, I concentrated on approaches which utilize the same data as currently relied on by the Board as inputs. With regard to simplicity, while the cost of equity and its determinants are complex, simplicity, both in terms of understanding the results and the application of the formula itself, is an important consideration to stakeholders, including ratepayers. The criterion of accuracy relates to the ability of the formula to reasonably quantify changes in the cost of equity. In regard to the last criterion, there is no single methodology which will always produce precisely the correct ROE, no matter how complex the formula, and that any formula will only produce an approximation of the change in the cost of equity from one period to the next.

The various possible alternatives were narrowed to the following two options which meet the identified criteria.

Option 1:

Give 100% weight to both the change in government bond yields and the change in corporate bond yield spreads, both with a 0.50 elasticity factor.

Option 1 uses the same numbers for ROE and long-term Canada bond yield as those initially used as the starting points in the *Board Report*. The starting corporate bond yield spread was estimated using the estimated spread at the time of the RP-1998-001 decision.¹¹

The return on equity would be:

$$\begin{aligned} \text{ROE} &= 9.35\% + 50\% \times (3.71\% - 5.50\%) + 50\% \times (3.91\% - 0.765\%) \\ &= 10.03\% \end{aligned}$$

Option 1 uses the same data items which the Board currently uses in setting the cost of capital parameters. While, similar to the existing formula, it takes account of the change in the long-term Canada bond yield, it also gives equal weight to the change in the risk premium as proxied by the change in the corporate bond spread. The replacement of the 75% elasticity factor which the Board has previously relied upon with a 50% factor on both variables has the advantage of tempering the volatility in ROEs, which the debt rating agencies have frequently called a “challenge” for the utilities.

¹¹ The actual cost of debt used in RP-1998-001 was the embedded cost of debt of Hydro One, which represents a company-specific historic cost and not consistent with the Board’s current methodology for estimating the deemed debt spread and cost. The relevant spread was estimated as follows. Since the decision used March 1999 data, the relevant utility spread was calculated using the average of the actual month-end February/March yields on the Scotia Capital All Corporates-Long-term (6.16%) minus the corresponding average actual month-end yields on the long-term GOC benchmark bond (5.395%). The Scotia Capital All Corporates-Long Term is the same index initially prescribed in the *Board Report* for calculating the deemed utility debt rate, and now the Long Term Bond Yields-All Corporates provided by the TSX.

The reduction in the elasticity factor to 50% on the long-term GOC bond yield is supported by evidence produced by a number of experts.¹² This evidence incorporates the full time frame over which the OEB's automatic adjustment formula has been in place.

Option 1 explicitly recognizes the positive relationship between credit spreads and the equity risk premium by adding a credit spread variable. Research has shown that changes in credit spreads are an indicator of changes in equity risk.¹³ An analysis of allowed ROEs in the U.S., government bond yields and utility bond credit spreads shows that allowed ROEs have changed by approximately 45 basis points for every percentage point change in the government bond yield and 30 basis points for every one percentage point change in the credit spread.

The implications of having consistently used this methodology over time were tested by comparing the results of applying Option 1 historically to actual annual results of the National Energy Board's multi-pipeline ROE formula (See Attachment A). The NEB formula is identical to the OEB formula but, for backcasting purposes, has the advantage of having been consistently applied each and every year at the same time for an extended period. Option 1 would have produced ROE values which on average were approximately 100 basis points higher than the actual formula results from 1996-2008

¹² The evidence of Kathleen McShane in *Opinion on Capital Structure and Fair Return on Equity Prepared for Ontario Power Generation* (November 2007) showed that the ROE changed by approximately 50 basis points for every one percentage point change in long-term government bond yields; the testimony of James Coyne of Concentric Energy Advisors filed in November 2008 on behalf of ATCO Utilities (ATCO Electric Ltd., ATCO Gas and Pipelines Ltd.) in the Alberta Utilities Commission 2009 Generic Cost of Capital Proceeding demonstrated that the ROE changed by approximately 50 basis points for every one percentage point change in long-term government bond yields using allowed returns on equity for U.S. utilities. In other testimony filed in the Alberta 2009 generic cost of capital proceeding, James H. Vander Weide, Ph.D. in testimony prepared for EPCOR Distribution & Transmission Inc., EPCOR Energy Alberta Inc., FortisAlberta Inc., and Altalink, L.P. (November 2008) demonstrated using allowed ROEs and long-term government bond yields that the ROE varied by approximately 45 basis points for every one percentage point variation in the long-term government bond yield.

¹³ For example, Robert Harris and Felicia Marston, "Expectational Estimates Using Analysts' Forecasts", *Journal of Applied Finance*, Volume 11, No. 1, 2001 and Appendix C, pages 156-157 of Ms. McShane's *Opinion on Capital Structure and Fair Return on Equity Prepared for Ontario Power Generation*. In addition, Drs. Kryzanowski and Roberts, who gave expert testimony in OPG's regulated payments proceeding, testified in the 2003 Alberta Generic Cost of Capital proceeding, in assessing various options for the automatic adjustment mechanism, noted the expectation that the default premium on corporate bonds and the market equity risk premium should be positively related.

and 115 basis points over the period to 2009. In 2009, the ROE produced by Option 1 would have been over 2.6 percentage points higher than the ROE produced by the existing formula. The higher indicated returns on equity over the whole period result primarily from having lowered the elasticity factor on the long-term GOC bond yield, with only the 2009 Option 1 value more significantly impacted by the change in the spread.

Option 2:

Substitute the deemed utility debt rate for the long-term GOC bond yield in the adjustment formula.

As with Option 1, the point of departure is the 9.35% ROE set in RP-1998-001 as set out in the *Board Report*. The utility debt rate which should be used as the point of departure is calculated using the 5.5% long-term GOC bond yield also specified in the *Board Report* plus the initial spread calculated in Option 1. The resulting initial utility debt rate would be 6.26%.¹⁴ The resulting ROE is calculated as follows:

$$\begin{aligned} \text{ROE}_{\text{new}} &= 9.35\% + 75\% (7.62\% - 6.26\%) \\ \text{ROE}_{\text{new}} &= 10.37\% \end{aligned}$$

Option 2 employs the same interest rate elasticity factor which has been consistently used by the OEB as well as other Canadian regulators, albeit to long-term GOC bond yields rather than corporate bond yields. Nevertheless, as indicated in the discussion of Option 1, research has shown that changes in credit spreads are an indicator of changes in equity risk. Option 2 directly incorporates both the broad trends in the cost of capital environment and the change in risk in a single variable. The California Public Utilities

¹⁴ Equal to 5.5% GOC bond yield plus 0.765% spread.

Commission has recently adopted an automatic adjustment mechanism for ROEs which relies on changes in corporate bond yields.¹⁵

The implications of having consistently used this methodology over time were also tested by comparing the results of applying Option 2 historically to actual annual results of the NEB's multi-pipeline ROE formula (See Attachment A). Option 2 would have produced ROE values which on average were approximately 25 basis points higher than the actual formula results from 1996-2008. Similar to Option 1, the modestly higher average ROE produced by Option 2 relative to the existing NEB formula over this period reflects the gradual upward trend in observed spreads over the full period during which the formula was in place. The Option 2 ROE result for 2009 relative to the existing formula would be approximately 2 percentage points higher reflecting the substantial increase in cost of capital not captured in the existing formula.

Recommendation

Both Option 1 and Option 2 produce results which are directionally correct, and rely on objective and transparent data that are currently relied on by the Board to set the electricity distributors' cost of capital parameters. Of the two options identified, Option 1 has the stronger empirical support, but represents a more significant departure from the Board's current formula. Option 2 is a simpler formula, makes intuitive sense, relies on a single adjustment variable which has been adopted elsewhere and maintains the same elasticity factor which has been historically used.

For the purpose of a temporary solution, until such time as a more comprehensive review of the cost of capital is conducted, the EDA recommends to the Board that it adopt the simpler Option 2.

¹⁵ The CPUC mechanism is subject to a deadband of 100 basis points and uses an elasticity factor of 50%. The CPUC will still conduct a comprehensive review of the ROE every three years.

4. Going forward, should the Board change the timing of its Cost of Capital determination, for instance, by advancing that determination to November?

No systematic differences between the forecasts which rely on January data compared to November data were identified which would indicate a need to advance the determination of the cost of capital parameters to November. The sole issue which the Board may want to consider in this regard is the coordination of the timing of new rates with the fiscal years of the electricity distributors, which all commence January 1. Putting new rates in effect on the same schedule as the distributors' fiscal years facilitates the companies' budgeting process. If the rate year were to be advanced to January 1, then it would be logical to advance the cost of capital determination to November.

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?

The divergence between the trends in the cost of equity and the formula results raises significant issues about the ongoing ability of the formula to produce a return which meets the fair return standard. Several reports have been issued during the past year concluding that the existing formulas throughout Canada produce returns that do not meet the fair return standard.¹⁶ In addition, the National Energy Board has just released a decision¹⁷ for TransQuébec and Maritimes Pipeline ("TQM") which recognized that there have been significant changes since the NEB's formula was established in RH-2-94 (1994) in both financial markets and general economic conditions. More specifically, Canadian financial markets have experienced greater globalization, the decline in the ratio of government debt to GDP has put downward pressure on Government of Canada

¹⁶ Gordon, Kenneth and Jeff Makhholm, National Economic Research Associates, *Allowed Return on Equity in Canada and the United States: An Economic, Financial and Institutional Analysis*, February 2008; Canadian Energy Pipeline Association, *Perspective on Canadian Gas Pipeline ROEs*, February 2008; Major, John and Roland Priddle, *The Fair Return Standard for Return on Investment by Canadian as Utilities: Meaning, Application, Results, Implications*, March 2008; and, Canadian Gas Association, *Natural Gas Utility Return Determination in Canada: Time For a New approach*, April 2008.

¹⁷ National Energy Board, *Reasons for Decision In the Matter of TransQuébec and Maritimes Pipelines Inc., Cost of Capital 2007 and 2008, RH-1-2008*, March 2009.

bond yields, and the Canada/US exchange rate has appreciated and subsequently fallen. In the Board's view, one of the most significant changes since 1994 is the increased globalization of financial markets which translates into a higher level of competition for capital. When taken together, the Board is of the view that these changes cast doubt on some of the fundamentals underlying the RH-2-94 Formula as it relates to TQM.

The NEB also noted that

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 discussed above 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 2008.¹⁸

Following its decision for TQM specifically, the NEB has decided to consider whether it should initiate a full review of its RH-2-94 decision which adopted the automatic adjustment formula.

While the decision of the NEB adopted a different methodology for setting cost of capital than has traditionally been applied by the OEB (a single after-tax weighted average cost of capital or ATWACC, rather than the traditional separate capital structure and return on equity), the decision provided some results expressed in the more traditional manner to facilitate comparisons. The indicated return on equity at a 40% common equity ratio (the same equity ratio applied by the OEB to the electricity distributors) for 2008 was 9.7%, more than a full percentage point higher than the 8.57% return on equity set by the OEB for electricity distributor rates effective May 1, 2008.

The Alberta Utilities Commission is currently reviewing its existing formula (which is virtually identical to the Ontario formula) and it is anticipated that the British Columbia Utilities Commission will be reviewing their formula later this year.

¹⁸ *Ibid*, page 17.

It is incontrovertible that there have been significant changes in the capital markets. The evidence is strong that the existing formula has been producing ROEs which are below a level which satisfies the fair return standard. The recent conditions in the capital markets serve to underscore the formula's inherent flaws. Fairness to all distributors supports applying the recalibrated ROE to those distributors whose rates were rebased in May 2008 as well as to those whose rates are to be rebased in May 2009. To require one group of utilities to accept an unduly low ROE relative to their peers for an extended period would be punitive. Moreover, extending the revised ROE to all distributors would promote administrative efficiency, inasmuch as it potentially avoids individual cost of service applications by distributors seeking the opportunity to earn an ROE commensurate with their peers.

Finally, the strong evidence that the existing formula is not producing fair returns supports a generic proceeding which undertakes a full review of the fair return from first principles.

	NEB ROE per RH-2-94	Scotia Long-Term Corporate Bond Yield ^{1/} (Avg. Oct/Nov)	Long-Term Canada Bond Yield (Avg. Oct/Nov)	Corporate spread	Forecast Long Canada Underlying NEB ROE	Change in Underlying Long Canada Forecast	Forecast Corporate Long-term Bond Yield	Change in Forecast Corporate Long- term Bond Yield	Change in Corporate/ 30 Year Spread	75% of Change in Forecast Corporate Long- term Bond Yield
	(1)	(2)	(3)	(4)=(2)-(3)	(5)	(6)=(5) _t -(5) _{t-1}	(7)=(5) _t +(4) _{t-1}	(8)=(7) _t -(7) _{t-1}	(9) see note 2/	(10)=75%*(8)
1994		10.03	9.31	0.72						
1995	12.25	8.49	7.96	0.53	9.250		9.965			
1996	11.25	7.17	6.94	0.23	8.030	-1.220	8.560	-1.405	-0.185	-1.05
1997	10.67	6.36	5.99	0.37	7.140	-0.890	7.375	-1.185	-0.295	-0.89
1998	10.21	6.34	5.46	0.88	6.530	-0.610	6.900	-0.475	0.135	-0.36
1999	9.58	7.25	6.23	1.02	5.690	-0.840	6.570	-0.330	0.510	-0.25
2000	9.90	7.13	5.56	1.57	6.120	0.430	7.140	0.570	0.140	0.43
2001	9.61	6.90	5.45	1.45	5.730	-0.390	7.295	0.155	0.545	0.12
2002	9.53	7.07	5.55	1.52	5.630	-0.100	7.075	-0.220	-0.120	-0.17
2003	9.79	6.33	5.34	0.99	5.980	0.350	7.500	0.425	0.075	0.32
2004	9.56	5.94	4.96	0.98	5.680	-0.300	6.670	-0.830	-0.530	-0.62
2005	9.46	5.29	4.27	1.03	5.550	-0.130	6.525	-0.145	-0.015	-0.11
2006	8.88	5.22	4.04	1.19	4.780	-0.770	5.805	-0.720	0.050	-0.54
2007	8.46	5.74	4.27	1.47	4.220	-0.560	5.405	-0.400	0.160	-0.30
2008	8.72	7.63	4.09	3.54	4.550	0.330	6.017	0.612	0.282	0.46
2009	8.57				4.350	-0.200	7.891	1.874	2.074	1.41

	Option 1 (11) see note 3/	Difference from NEB ROE (12) = (11) - (1)	Option 2 (13)=(13) _{t-1} +(10)	Difference from NEB ROE (14) = (13) - (1)
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1995	12.25		12.25	
1996	11.55	0.30	11.20	-0.05
1997	10.96	0.29	10.31	-0.36
1998	10.72	0.51	9.95	-0.26
1999	10.55	0.97	9.70	0.12
2000	10.84	0.94	10.13	0.23
2001	10.92	1.31	10.25	0.64
2002	10.81	1.28	10.08	0.55
2003	11.02	1.23	10.40	0.61
2004	10.60	1.04	9.78	0.22
2005	10.53	1.07	9.67	0.21
2006	10.17	1.29	9.13	0.25
2007	9.97	1.51	8.83	0.37
2008	10.28	1.56	9.29	0.57
2009	11.21	2.64	10.69	2.12
1996-2008		1.02		0.24

^{1/} 2007 & 2008 corporate yield are the November long all corporate DEX yields.

^{2/} Column (9)=[(7)_t-(5)_t]- [(7)_{t-1}-(5)_{t-1}]

^{3/} Column (11)=(11)_{t-1} +.5*(6)+ .5*(9)

Source: Bank of Canada, NEB