

**Volume 3, Section 1 – McShane, Cost of Capital**

**Q. With respect to the preceding request for information, please provide in respect of each of the board decisions referenced, the relevant extracts wherein the Board commented upon the evidence and recommendations of Ms. McShane.**

A. Please see attached:

- Attachment A AltaGas Utilities Inc. and Bonnyville Gas Company Limited, GRA for Test Years 2000/2001/2002
- Attachment B Decision 2001 – 96 Atco Gas South, 2001/2002 GRA
- Attachment C Atco Pipelines, 2003/2004 GRA
- Attachment D EUB Generic Cost of Capital, July 2, 2004
- Attachment E Application by Enbridge Gas New Brunswick Inc. for Approval of its Rates and Tariffs, June 23, 2000
- Attachment F Applications by Union Gas Limited and Enbridge Gas Distribution Inc. for a Review of the Board’s Guidelines for Establishing Their Respective Return on Equity, Decision and Order, January 16, 2004
- Attachment G FortisBC Inc. 2005 Revenue Requirements Application, Decision, May 31, 2005.
- Attachment H Nova Scotia Utility and Review Board, in the Matter of the Gas Distribution Act, Decision NSUARB-NG-2, 2003 NSUARB 8.
- Attachment I Ontario Energy Board, Application by Natural Resource Gas Limited, Decision EB-2005-0544, September 20, 2006.
- Attachment J Newfoundland and Labrador Board of Commissioners of Public Utilities, Order No. P.U. 19 (2003), Newfoundland Power.
- Attachment K Newfoundland and Labrador Board of Commissioners of Public Utilities, Order No. P.U. 14 (2004), Newfoundland and Labrador Hydro.
- Attachment L Newfoundland and Labrador Board of Commissioners of Public Utilities, Order No. P.U. 7 (2002-2003), Newfoundland and Labrador Hydro.
- Attachment M Telecom Decision CRTC 2007-5, Northwestel Inc.
- Attachment N CRTC 2000-746, Northwestel Inc.
- Attachment O Nova Scotia Utility and Review Board, Application by Nova Scotia Power Inc. for Approval of certain Revisions to its Rates, Charges and Regulations, Decision NSUARB – NSPI – P – 875, 2002 NSUARB 59.
- Attachment P Pacific Northern Gas Ltd., 2002 Revenue Requirements Application, Decision, July 31, 2002.
- Attachment Q Telecom Decision CRTC 2002-43, Telebec and Telus Quebec.
- Attachment R Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. Application to Determine the Appropriate Return on Equity and Capital Structure and to Review and Revise the Automatic Adjustment Mechanism, Decision, March 2, 2006

**AltaGas Utilities Inc.**  
**And Bonnyville Gas Company Limited**  
**GRA for Test Years**  
**2000/2001/2002**

# **ALBERTA ENERGY AND UTILITIES BOARD**

**Calgary Alberta**

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**ALTAGAS UTILITIES INC. AND  
BONNYVILLE GAS COMPANY LIMITED  
GENERAL RATE APPLICATION  
FOR TEST YEARS 2000/2001/2002**

**Decision 2002-027  
Application No. 2000283 (1237650)  
File No. 1402-8**

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## **1 INTRODUCTION**

By letter dated September 29, 2000, AltaGas Utilities Inc. (AltaGas) and Bonnyville Gas Company Limited (Bonnyville) (collectively, the Utilities or AUT) filed a 2000/2001/2002 General Rate Application (GRA or the Application) with the Alberta Energy and Utilities Board (the Board). Specifically, the Utilities applied for:

- determination of revenue requirement and rates for AltaGas for the test year 2000;
- determination of revenue requirement and rates for Bonnyville for the test year 2000; and
- determination of revenue requirement and rates for AltaGas (with Bonnyville merged) for the test years 2001/2002.

In the filing, the Utilities also indicated the intent to negotiate the Application with customer representatives with a view to achieving a settlement proposal for presentation to the Board for consideration and approval. By letter dated October 23, 2001, the Utilities indicated that representatives of the Companies and customer groups undertook a Negotiated Settlement Process on October 25, 2000, with a view to reaching agreement on the Phase I portion of the Application, dealing specifically with revenue requirement and rate base. The Utilities indicated that the Phase II portion of the GRA to fix schedules of rates, tolls and charges for the Utilities, would be filed in due course.

In the October 23, 2001 letter, the Utilities indicated that the process to arrive at a negotiated settlement had continued through to September 25, 2001, and that the parties had reached agreement on all issues raised in the Phase I portion of the GRA, with the exception of Rate of Return on Common Equity and Capital Structure. The parties requested that the Board adjudicate these issues. Also, Post-Employment Benefits were not resolved pending the outcome of the same issue filed by the ATCO Group. Both parties agreed to comply with the Board's decision in that case.

On November 14, 2001, the Utilities filed a "Memorandum of Agreement" in support of the Phase I portion of the GRA, setting out details of these unresolved issues and other matters agreed in the Negotiated Settlement Process.

management initiatives. In this instance, the Board is not persuaded to increase either risk premium or deemed equity to compensate for such matters.

The Board further agrees with AUI that regulatory risk is largely based on regulatory framework, and that management's success at reaching negotiated settlements should by no means impact the Board's assessment of regulatory risk. The Board is fully supportive of the negotiated settlement process, and encourages resolution on issues of contention between stakeholders. The Board will not intentionally penalize AUI for the time taken to negotiate a settlement with its customers.

In Decision 2001-96, dated December 12, 2001, the Board set the capital structure for AGS at 37% equity. As noted above, the Board considers that AUI faces a slightly higher risk than does AGS. In AUI's previous GRA the capital structure was set at approximately 41%. The Board is not persuaded that there has been any change in business risk to AUI since 1996 and in fact management is able to propose certain measures to manage many of the risks proposed which in and of itself would reduce the risk faced by AUI. For all of these reasons, the Board concludes that an appropriate deemed equity shall be 41% for all three test years.

## **6.2 Rate of Return on Common Equity**

In this section the Board will evaluate the return on equity and set the rate taking into account the evidence provided for comparable earnings, discounted cash flow (DCF), and equity risk premium. It will also consider the views previously held by the Board in these matters.

### **6.2.1 Position of the Utilities**

AUI argued that a return on equity for the three tests years of 11.5% is supported by Ms. McShane's original evidence, and submitted that her updated return on equity of 11.25% for the 2001 and 2002 test years was a 25 basis point penalty as a result of the delay in the hearing process from its original filing date of September 29, 2000. The company argued that selected snapshots of evidentiary history and continuous updates through to the end of the hearing created risk of distortion and unfairness. AUI submitted that had the hearing been scheduled at the time of the original filing, evidence would have supported a return on equity of 11.5% for all three test years. AUI submitted that a 11.5% return on common equity for all three test years would be fair and reasonable, void of any penalty arising from updated evidence and recognition of its efforts in the cooperative process.

AUI supported Ms. McShane's use of the three tests for return on common equity: equity risk premium, DCF and comparable earnings and submitted that it strongly disagreed with the Interveners recommended return on common equity of 9.5%, 9.4% and 9.0% in 2000, 2001, and 2002 test years respectively.

#### Equity Risk Premium

AUI submitted that Ms. McShane used three different approaches to the equity risk premium test, which incorporated an adjustment for the relative risk of AUI, a direct estimate of risk premium for a local distribution company (LDC) versus historic risk premiums for regulated utilities, and DCF estimates of cost of equity of LDCs and long-term government bonds. AUI supported Ms. McShane's use of U.S. and Canadian risk premiums in recognition of the

globalized money market, the increased level of Canadian foreign investments, the historic resource oriented bias of the Canadian market, greater diversification of the U.S. market, and differences in the U.S. and Canadian Bond yields. AUI noted that based on historic Canadian and U.S. risk premiums, Ms. McShane estimated the historic market risk premium was 6.5% and 6.0-7.0% after combining future estimates, and 4.25% for AUI after a relative risk adjustment of 0.65 based on co-variability and absolute variability of utility stocks with the TSE 300. Ms. McShane concluded that the risk premium was 4.5-5.0% plus a risk free rate of 6.0% and financing flexibility of 0.5% totaling a return on equity of 10.75-11.0%.

#### DCF Test

AUI noted that the DCF test measures a direct estimate of investor requirements for an LDC. The company supported Ms. McShane's use of U.S. data as there was little Canadian data for comparison, and Canadian utilities compete for capital and returns with U.S. companies. AUI submitted that the DCF test 11.4% return on equity supported Ms. McShane's equity risk premium results.

In reply argument, AUI disagreed with the Interveners that the DCF test should be ignored when evaluating return on common equity, as it violated the constant future growth rate assumption of the model, and circularity in growth forecasts. AUI suggested that circularity is mitigated by the fact that growth forecasts are prepared by external analysts, independent of the regulatory process. In addition, AUI submitted that changes in growth forecasts do not alter the assumption of a constant growth rate, but the rate itself.

#### Comparable Earnings Test

AUI noted that the comparable earnings test compared the level of return utilities must provide versus companies of similar risk to attract capital. The returns for Canadian industrials of similar risk to average risk Canadian LDCs such as AUI were 12.5-12.75% versus the U.S. industrial comparison with an average risk Canadian LDC of 12.5-13.0%.

AUI cited Board Decision E83123, dated September 30, 1983, and Decision U96002, whereby the Board emphasized the need to use a balanced approach incorporating multiple tests to determine a fair return on common equity. AUI also noted that the Board in Decision E83123 recognized that return on rate base is not an exact science, dependent on the judgement of experts, and the use of multiple tests.

The company explained that Ms. McShane supported the use of multiple tests, but recognized that Canadian regulators are becoming more and more reliant on the equity risk premium test, resulting in lower allowed returns as bond (risk-free) rates decline. AUI submitted that over reliance on one test inaccurately reflects the investment marketplace.

AUI submitted that their reliance on a rural customer base exposes them to the agriculture cycle, depression of one-industry towns, and a higher risk of franchise loss based on their widely dispersed customer base. AUI cited Board Decision U96002 that recognized these factors and considered them in determining AUI's return on common equity versus other LDCs. AUI argued that based on their rural customer base, widely dispersed service area, and their exposure to agriculture cycles, a fair rate of return of common equity for all three test years would be 11.5%.

AUI disagreed that the comparable earnings test was invalid because Ms. McShane failed to measure results of the business cycle from trough to trough. There is no rule on exactly how to measure a business cycle, beyond defining it as including periods of expansion, recession, contraction, and peaking. AUI explained that both periods, 1991-1999 and 1991-2000, are consistent with this definition.

#### Comparable Awards in other Jurisdictions

AUI supported the use of a comparable awards in other jurisdictions method when utilizing both Canadian and U.S. LDCs awarded returns. Allowed returns on equity for Canadian LDCs are 1.5% lower than U.S. LDCs, despite the same relative risk. AUI argued that there is no rational explanation for these results beyond the fact that Canada has become over reliant on the Equity Risk Premium Test.

#### Equity Risk Premium Test

In reply argument, AUI observed that the risk free rate was 6.0% in 2000 based on 30-year Canada Bonds, with a flat yield curve with 10-year Canada Bonds. AUI noted that Ms. McShane's updated evidence relied on the forecasts of 30-year Canada bonds for 2002. As the yield curve between 10-year and 30-year Canadian Bonds was no longer flat, an adjustment of 30 basis points to the 5.5% 2002 Canada Bonds was required to reflect the current 30-year bond rate. AUI submitted that the 30 basis point spread was consistent with the average spread between January and November 2001. AUI submitted that a reasonable spread should not be based on a spot value, as selected by Interveners from the Edmonton Journal on January 8, 2002, which had indicated an spread of 15-17 basis points as compared to the spread listed on the Bank of Canada website. AUI submitted that the reported spread was in error.

#### Market Risk Premium

AUI submitted that the use of U.S. data is relevant to the application, contrary to the submission of the Interveners. AUI disagreed with the Interveners' conclusion arising from Board Decision 2000-9, where the Board did not accept the U.S. weighting of data, but stated that U.S. risk premium of 8.0% represented the upper bounds versus the Canadian historic risk premium of 5.5%. AUI noted that when the U.S. data is included, the market risk premium is 6.5%. AUI noted that the Interveners cited the Régie de l'énergie's Decision 99-150 for Gaz Métropolitain for lower risk adjustment, but failed to recognize the 40% weighting given to the U.S. data to estimate the market risk premium of 6.5%.

#### Financing Flexibility

The company submitted that the Board has consistently allowed approximately 50 basis points for financing flexibility for various utilities, as opposed to the Interveners' suggested 25-30 basis points. AUI argued that it should be compensated for the cost of raising equity.

AUI submitted that the use of expert opinion puts forth knowledge, training, intuition, and independent judgement, which often led to different conclusions. AUI firmly supported the use of expert witnesses, and opposed a mechanistic approach in calculating return on common equity.

The company argued that rate of return should be based on the same fundamental information as the negotiated settlement to avoid updated information creating a different scenario of information than the negotiated process. AUI further suggested that management's successful negotiations with customers should not lead to a punitive finding of reduced regulatory risk, as regulatory risk pertains to the competitive or regulatory framework AUI operates in.

### **6.2.2 Position of the Interveners**

The Interveners noted that Ms. McShane based her recommendations in earlier proceedings on the equity risk premium and comparable earnings test, but in the AGS's 2001/2002 GRA and AUI's current application she also applied the DCF analysis. Ms. McShane also compared awarded rate of returns by U.S. boards and commissions. The Interveners submitted that the Board's conclusions in the 1997/1998 CWNG GRA (Decision 2000-9) discounted the merits of the comparable earnings test as sensitive to various factors, such as business cycles and accounting practices of sample firms. Recent Board Decisions gave primary weight to the equity risk premium test when calculating return on common equity.

The Interveners noted that Ms. McShane stated that the time period of measuring returns must include the entire business cycle, incorporating years of expansion and decline. The Interveners argued that Ms. McShane had analyzed the most recent point-to-point cycle ending in 1999 and beginning in 1991, but changed that period to 1991-2000 in her updated comparable earnings test. The Interveners submitted that Ms. McShane appears uncertain as to the end of the business cycle, and therefore the comparable earnings test should be given no weight in determining the return of common equity.

#### DCF Test

The Interveners noted that Ms. McShane testified in CWNG's 1998 GRA, concluding that there were some major limitations to the DCF test, as follows:

- Inability to measure investor expectations of dividend growth rates
- Stock prices don't always reflect underlying fundamentals
- Unrealistic investor expectations
- Market value of utility stocks complicate DCF test when significantly above book value
- Circularity of applying the DCF technique, whereby future growth rates are dependent on approved returns

The Interveners submitted that the DCF test should be given no weight in determining AUI's return on common equity, consistent with Board Decision 2001-96, which dealt with AGS's GRA.

#### Comparable Awards in other Jurisdictions

The Interveners rejected the comparison of awarded returns on equity of U.S. utilities, as it failed to consider the particulars of the utility, the associated allowed capital structure, and the legislation under which the regulatory board operates.

#### Equity Risk Premium Test

The Interveners argued that the Board should utilize the most current information at the time of the hearing to accurately render a Decision, consistent with Board Decision 2000-9.

The Interveners rejected Ms. McShane's evidence regarding the risk-free rate for 2000 (6.0%), and submitted that the rate should be 5.9% as indicated in cross-examination. Furthermore, the Interveners argued that Ms. McShane's 2002 forecast of 5.8% should be adjusted to a maximum of 5.6% to reflect the December 2001 Consensus Forecast for 10-year government bond yields of 5.2%-5.6%. The consensus forecast does not include a 30 basis point adjustment for the historic spread between 10-year and 30-year Canada's. The Interveners argued the current yield curve is flat and the witness applied 10-year bond yields for the previous two test years. The Interveners noted that the spread between 10-year and 30-year Canada Bonds was between 15-17 basis points at the hearing date. The Interveners submitted that the risk-free rate for determining the risk premium test should not exceed 5.9% in 2000, 5.8% in 2001, and 5.6% in 2002.

#### Market Risk Premium

The Interveners argued that Ms. McShane's combined Canadian and U.S. market risk premium was weighted based on the maximum Registered Retirement Savings Plan (RRSP) allocation that Canadians are allowed for foreign securities of 30%, but failed to recognize that 'foreign' includes bonds and non-U.S. investments. They also noted that Ms. McShane had no evidence regarding the actual amounts or percentages of Canadian RRSP funds that have been invested in U.S. investment vehicles. Furthermore, the Interveners noted that the Board clearly stated in the Decision for CWNG's 1997/1998 GRA that U.S. data represented the higher bounds for calculating market risk premium and would be given no mechanical weighting. Therefore, the Interveners submitted only Canadian data should be relevant to AUI's return on common equity.

#### Adjusted Utility Market Risk Premium

The Interveners argued that Ms. McShane's raw beta for Canadian utilities was 0.45, while the most recent data indicated a raw beta of only 0.40. Her adjusted beta is only supported by the Value Line formula, which gives 2/3 weight to the raw beta and 1/3 to the market beta of 1.0. Based on the fact that AUI is not a publicly listed company, there is no accurate method to calculate its beta. The Interveners submitted that Board acceptance of the higher beta of 0.65 proposed by Ms. McShane would result in an increase of return of 1.6%.

The Interveners noted that Ms. McShane determined that AUI faced average business risk, but cited several areas where AUI had greater risk than other utilities:

- weather impact on heating load — the Interveners submitted that normalized forecast neutralizes the impact of weather
- large residential/small commercial base mitigates exposure to business cycle — the Interveners argued that a 70% space heating load for AUI, versus CWNG/AGS space heating load which was only 40%, reduced business cycle risk
- unbundling — the Interveners argued that it is impossible to quantify impact, either negative or positive at this time

The Interveners argued that AUI's business risk is as low or lower than other gas distribution utilities.



The Interveners submitted that the market risk premium should be adjusted by 0.50-0.55 to accurately determine the risk premium for gas distribution utilities, consistent with Decision 99-150 by the Régie de l'énergie, which set a fair return of on equity for Gaz Métropolitain, of 0.55 with a flexibility allowance of 30 basis points. Also Drs. Booth and Berkowitz's estimated beta adjustment was 0.50 in the 1997/1998 CWNG GRA, however, the Board concluded a 0.60 adjustment was appropriate versus Ms. McShane's higher recommended adjusted beta of 0.70.

The Interveners argued that the risk premium adjusted with Ms. McShane's beta would result in an appropriate risk premium for AUI of 3.3% ( $5.5\% \times 0.60 = 3.3\%$ ), while the beta used in the Régie de l'énergie decision calculated a risk premium of 3.0% for the test years. The Interveners noted that the Board concluded a risk premium in the range of 3.25% to 3.5% for the test years was reasonable in AUI's previous GRA.

#### Financing Flexibility

The Interveners argued that no flotation costs arising from the sale of new equity by AUI's parent in 2002, nor any margin related to the sale of new equity was specified for AUI. None of the factors listed by Ms. McShane would justify a significant add-on for financing flexibility. The Interveners submitted 25-30 basis points could be allowed for financial flexibility.

The Interveners submitted that the maximum allowed rate of return on equity based on Ms. McShane's equity risk premium evidence for the three test years should be as follows:

	2000	2001	2002
	%		
Risk-free rate	5.9	5.8	5.4 <sup>1</sup>
Utility risk premium <sup>2</sup>	3.3	3.3	3.3
Financing flexibility	0.3	0.3	0.3
TOTAL:	9.5	9.4	9.0

1. December 2001 Consensus Forecast, UM-AUI.36
2. Compound Average Canadian Market Risk Premium for 1947-1999 times beta 0.60

The results reflected the Interveners' use of Ms. McShane's evidence, the most recent beta of 0.60 employed by the Board in CWNG's 1997/1998 GRA, and the Intervener's financing flexibility allowance.

In reply argument, the Interveners submitted that the Board's use of current information reduces the utility's exposure to risk for unforeseen events. The Interveners argued that the Board has been open to reviews of revenue requirements to applications when situations dictated it.

#### Equity Risk Premium

The Interveners submitted that AUI does not operate or finance its operations in the U.S., therefore the use of U.S. data to determine market risk premiums is fundamentally flawed. The Interveners noted that the Board rejected U.S. weighting in calculating market risk premiums in Decisions U99099, dated November 25, 1999, 2000-9, and 2001-96. They also agreed that equity risk premiums depend largely on upwardly biased analyst expectations, which resulted in

inflated results. Furthermore, a fair return on equity should attempt to be comparable with utilities or industrials of similar risk, but with no guarantee to meet the often unrealistic expectations of investors.

The Interveners cited Decision U96002 that utilized the equity risk premium test and flotation costs to determine return on common equity. The Interveners submitted that the Board must consider the fundamental differences between U.S. and Canadian utilities, instead of relying on the comparative values of the awarded returns.

The Interveners argued that the Board should conclude that the use of expert witnesses and evidence in this AUI application was of little probative value, consistent with Board Decision 2001-96.

### 6.2.3 Views of the Board

AUI argued that the Board should take into account the timing of the hearing relative to that of the original Application and the protracted negotiations when setting the rate of return. The Interveners argued that the Board should not give any consideration to AUI's argument that the more current financial information put the utility at risk. The Interveners pointed out that such updates had been received by the Board in the past and they could be cause to increase the rate of return as much as to decrease it. In the circumstances of this proceeding, the Board considers it appropriate to consider the updated information.

During the past five years the Board has been presented with evidence from several witnesses that have discussed the merits of at least three measures for determining the Return on Equity. In this proceeding, on behalf of AUI, Ms. McShane provided her views on the Comparable Earnings test, the DCF test and Equity Risk Premium test. She also provided information on comparable awards that compared the returns approved by regulators in U.S. jurisdictions. This latter comparison was meant to illustrate that reliance on only the risk premium test in Canada has resulted in rates being lower in Canada by about 1.5% than in the U.S.

The parties disagreed on the weight that should be given to the Comparable Earnings test. Ms. McShane proposed a weighting of 25% on a range of values 12.5% to 13.25%. The Interveners believed that no weight should be given to this test. In recent decisions the Board has viewed the comparable earnings test as a guide and a check on the reasonableness of the market based tests, but has otherwise given little weight to this test. The Board continues to view the comparable earnings test as being highly sensitive to accounting practices of sample firms, the sample selection, and matters related to restructuring. Therefore, the Board will give little weight to this test other than as a check on the reasonableness of the Equity Risk Premium test.

The parties also disagreed on the weight that should be given to the DCF test. The evidence of Ms. McShane was that the rate fell between 10.8% and 10.9% and should be given a weight of 37.5%. Again, the Interveners argued that no weight should be given to this test. The Board notes the Interveners' reference to Ms. McShane's evidence in the 1997/1998 CWNG GRA, where Ms. McShane concluded that the DCF test was not used as a result of its various limitations, including its inability to measure investor expectations of dividend growth rates, circularity issues, and the concern that stock prices do not match underlying fundamentals. The Board

considers that very little weight should be given to the DCF test in this proceeding in the establishment of an ROE. Although the Board considers the DCF test to have theoretical validity, the model suffers from a myriad of limitations, as indicated by Ms. McShane's 1997/1998 CWNG GRA evidence. As with the comparable earnings test, the Board will only use the DCF test as a reasonableness check to ensure that ROE is established within reasonable bounds.

The Board believes the most appropriate test to use is the Equity Risk Premium test. The Board has examined the evidence and views of the parties with respect to the risk free rate, the market risk premium and the adjustment for financing flexibility.

The risk free rate proposed by AUI was 6% for all three test years while the Interveners proposed rates of 5.9%, 5.8% and 5.4% for 2000, 2001, and 2002 respectively. The Interveners' rate for 2002 appeared to be based on the consensus for the 10-year bond rate. It is of note, too; that Ms. McShane gave evidence that her updated rates were 6% for 2000, 5.8% for 2001 (based on actual information) and 5.8% based on a forecast for 2002.<sup>3</sup> Ms. McShane's evidence was based on a 10-year bond rate and adjusted to a 30-year bond rate. There was some debate at the hearing surrounding the validity of utilizing 30-year Canada bonds as the risk free rate in calculating the Equity Risk Premium. The Board is concerned that the market may no longer be utilizing 30-year bonds as the standard risk-free instrument, as a scarcity premium exists on 30-year bonds. In the Board's opinion, any adjustment to the 30-year bond rate based on the historical spread between 10-year and 30-year bonds may not accurately reflect the realities of the marketplace and may possibly lead to a risk-free rate above or below underlying fundamentals.

The Board believes that based on the evidence presented in this proceeding it is appropriate to continue with the use of the 30-year bond rate. Therefore, the normal 10/30-year Canada bond yield spread of 30 basis points is reasonable. However, due to the estimated scarcity premium of 30-year Canada Bonds which provides another variable to be determined, and concern that market conditions appear to be changing away from the use of 30-year bonds, the Board is of the view that in future, it will be appropriate to assess current trends and reevaluate the applicability of 30-year Canada Bonds as the risk free rate or if the 10-year rate should become the primary basis. Accordingly, the Board directs AUI, in its next general rate application, to provide a written discussion of the relative merits of the use of 10-year Canada Bonds and 30-year Canada Bonds as the risk free rate.

Consistent with the Board's past practice of giving the greatest weight to the Canadian 30-year bond rate, the Board will accept Ms. McShane's updated studies of the risk free rate of 6%, 5.8% and 5.8%, for 2000, 2001 and 2002 respectively, as being appropriate.

The Interveners argued that the risk premium values, derived by the expert witness, were unsuitable, as they had given weight to U.S. data and that a value of 5.5% would be the result if only the Canadian data was used. The Board believes that Canadian markets already reflect global trends, and U.S. weighting would overemphasize the impact of global capital markets, while undermining the impact of Canadian monetary and fiscal policy. The Board notes that AUI generates its revenue in Canada, and any mechanical weighting of U.S. data is inconsistent with the realities of the market in which AUI operates. The Board continues to see the value of U.S.

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<sup>3</sup> Tr. pp. 50-51 and MGCI-AUI.43 p. 4

data as providing an upper limit and therefore will consider the U.S. data in this light when setting the rate of return. The Board notes that the compound and arithmetic averages of Canadian Market Risk Premiums for 1947-1999 are 5.5% and 6% respectively. The Board concludes that this range is reasonable, and the Board will apply it in the equity risk premium test in determining AUI's risk premium.

The Board considers that as AUI is not publicly traded, there is no definitive way to precisely determine AUI's beta. However, the Board does note that the Interveners submitted in argument that the risk premium should be adjusted by 0.50 to 0.55, consistent with betas of other gas distribution utilities, specifically citing the evidence presented by Drs. Booth and Berkowitz in the CWNG 1997/1998 GRA and the Régie de l'énergie's Decision 99-150 involving Gaz Métropolitain. While Ms. McShane utilized an adjusted beta of 0.65, incorporating the Value Line formula, the Board is not convinced with the appropriateness of its 2/3 raw beta and 1/3 market beta weighting, as it is largely a function of judgement.

The risk premium proposed by AUI and Ms. McShane was between 4.25% and 4.5% for all three test years and was derived using a beta of 0.65. The Interveners argued that this was too high and should be no more than 3.3% (based on a beta of 0.6). The Board has heard the arguments from opposing expert witnesses in past proceedings and notes that Ms. McShane pointed out that the appropriate level is somewhat based on judgement. As such, the Board believes that an adjusted beta of 0.6 should be used against the market risk premium, as it is within the beta range submitted by both the Interveners and the applicant, as well as consistent with recent rulings by the Board. Therefore the Board will apply 0.6 in its determination.

The Board is also aware that the capital raised is through the parent company of AUI, which has a different investment profile than does the parent of AGS and will factor that fact into its determination. The Board notes that based on the compound and arithmetic averages the Canadian Market Risk Premium for 1947-1999 is between 5.5% and 6%. The Board concludes that the range is reasonable and when multiplied by a beta of 0.6, AUI's risk premium is in a range of 3.3% to 3.6%.

Arguments were also made for the adjustment for financing flexibility. The Board believes that a financial flexibility allowance is required to accommodate flotation costs and a margin for unanticipated capital market conditions. The range proposed by the parties was from 0.3% by the Interveners to 0.5% by AUI. Therefore, the Board accepts that this is a reasonable range and will incorporate this evidence into its determination of the return on equity.

The following table provides a breakdown of the Board's findings on AUI's return of common equity, utilizing the equity risk premium test and financial flexibility.

	2000	2001	2002
	%		
Risk-free rate	6.0	5.8	5.8
Utility risk premium	3.4	3.4	3.4
Financing flexibility	0.5	0.5	0.5
<b>TOTAL:</b>	9.9	9.7	9.7

Based on the evidence, and consistent with other recent Board Decisions (see for example 2001-97, 2001-96, and 2001-92, all dated December 12, 2001), the Board considers that a fair rate of return on that portion of the rate base deemed to be financed by common equity should be 9.9% for 2000, and 9.7% for both 2001 and 2002. It is the view of the Board that these rates are reflective of the financial risk of the utility and are consistent with the rates set by the Board for companies of similar financial needs.

### **6.3 Post Employment Benefits**

The issue of post employment benefits was addressed in the MOA wherein both parties agreed to its resolution. In this section the Board will consider any issues that may have arisen subsequent to the MOA.

#### **6.3.1 Position of the Utilities**

In the MOA AUI agreed to comply with the outcome of a similar matter before the Board for the ATCO group.

During the hearing AUI stated:

On December 31st, 2001, the Board issued Decision 2001-105 with respect to the ATCO companies. We concur with the treatment of other post-employment benefits prescribed in that decision.<sup>4</sup>

#### **6.3.2 Position of the Interveners**

The Interveners similarly agreed to adhere to the Decision to be rendered in the ATCO proceeding on the same topic. In argument the Interveners recommended that the Board direct AUI to refile, in its Phase II portion of the GRA, the other post employment benefits costs on a cash basis of accounting.

The Interveners noted that AUI also stated<sup>5</sup> that it was looking for Board direction with respect to the issue of whether the regulatory treatment approved for other post-employment benefits should be mirrored for financial statement purposes. At page 3 of Decision 2001-105 respecting the ATCO Group's pension application, the Board stated:

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<sup>4</sup>Tr. p. 25

<sup>5</sup>Tr. p. 35

**Decision 2001 – 96  
Atco Gas South  
2001/2002 GRA**

**DECISION 2001-96**

**ATCO GAS SOUTH**

**2001/2002 GENERAL RATE APPLICATION  
PHASE I**

## Views of the Board

The Board agrees with Calgary that it is not appropriate to change the assessment of the relative risk facing ATCO merely on the basis that it has restructured its business into two divisions. The Board is of the view that the most important issue with respect to these divisions is whether or not the business risks facing the still legally integrated entity have changed relative to previous GRA applications.

However, having reviewed the risks of the company as a whole, the Board also agrees with Calgary that it is appropriate to look to allocate the allowed return on equity between the divisions on the basis of their relative risk. This is consistent with the past practice of the Board in other cases involving the notional separation of previously integrated utility functions into separate divisions. The Board is of the view that a similar approach would be appropriate in this case.

## 5.2 Appropriate Return on Equity for AGS and APS

### Position of ATCO

For AGS, based on common equity financing rate base of 37.4% in 2001 and 39.4% in 2002, ATCO requested a return on common equity of 11.5% for both 2001 and 2002.

For APS, based on common equity financing rate base of 45.4% in 2001 and 50.1% in 2002, ATCO requested a return on common equity of 12.0% for both 2001 and 2002.

ATCO presented estimates of fair rate of return on common equity for 2001 and 2002 based on an application of equity risk premium tests, discounted cash flow tests, and comparable earnings tests. In support of its requests, evidence was filed by Ms. McShane, Senior Vice President of Foster Associates Inc., who recommended a fair rate of return on common giving primary weight to the equity risk premium and discounted cash flow tests, but also with significant weight to the comparable earnings test.

Since AGPL is not a publicly traded company, Ms. McShane stated that its cost of equity could not be estimated directly from capital markets, and since it does not have its own debt rating, there was no independent market assessment of its business and financial risk. Therefore, the determination of a fair return was made by reference to proxies that do have market data.

Ms. McShane used available market data available for a sample of publicly traded utilities including data from U.S. utilities in her evaluations.

Ms. McShane stated that the standards that set the parameters of fair return on equity necessary to induce investment in public utility assets must provide the opportunity to attract capital on reasonable terms; maintain its financial integrity; and earn a return on the value of its property commensurate with that of comparable risk enterprises. She noted that during the past decade in Canada, the comparable earnings test has effectively been replaced by the cost of attracting capital test. Factors noted to contribute to this change were the sharp decline in inflation in 1992, industrial restructuring, and severe recession in the early 1990's which resulted in a significant decline in earnings. Ms. McShane stated that these lowered earnings were unrepresentative of future earnings, and unreliable indicators of investor expectations for future returns. On this



basis. Ms. McShane stated that the results of the comparable earnings test were of limited reliability. She stated that the same factors had a similar effect on the discounted cash flow test.

Ms. McShane stated that with the shift in reliance onto the equity risk premium test, the approved returns of utilities in Canada were tied almost exclusively to interest rates, which had declined between 1992 and 1999. Approved returns can be broken into the real cost of capital, compensation for inflation and equity risk premium components. The effective risk premium declined by close to 2% since the risk premium test became the sole methodology relied upon in the mid-90's. She noted that with declining inflation and interest rates, and a strong economy, earnings of competitive firms have rebounded from the early 1990's to a point where in unregulated industries, the gap between the comparable earnings test and approved returns has widened considerably. She stated the opportunity cost (the return foregone) by investing in utility assets rather than the next best alternative has also widened. Ms. McShane stated that the comparable earnings standard provides a measure of such an opportunity cost and should be given weight. The equity risk premium test estimates a return expected or required on the market value of the investment. Ms. McShane stated that, for utilities, replacement cost is higher than book value, thus the market value of utility shares should be higher than book value.

The comparable earnings test recognizes return as applied to an original cost rate base. Ms. McShane recommended that weight be given to both the cost of attracting capital (through the application of both the equity risk premium and discounted cash flow tests) and the comparable earnings standard.

#### ***Equity Risk Premium Test***

Ms. McShane stated that the equity risk premium test is a measure of the market-related cost of attracting capital. She noted that an equity investment in a utility is more risky than a bond investment and requires a higher return. As utility assets are long-lived and are committed to public use over the life of the asset, long-term Government of Canada bond yield becomes the basis for applying the risk premium test. Ms. McShane stated that the risk premium required by investors tends to widen and narrow with factors such as inflation, productivity, profitability and investors' willingness to take risks. In addition, she stated that it was a prospective concept that reflects investors' requirements to compensate for risk on a future basis.

The starting point of applying the risk premium test is to project the expected nominal long Canada yield, which serves as a proxy for the "risk free rate." Ms. McShane used a forecast of long Canada yield at 6.25%. Her estimation of required market risk premium resulted from analyzing U.S. and Canadian data from 1947 to 1999, which showed that risk premiums varied in the range of 6.3% to 6.9% (adjusted for exchange rates and impact of annual data based on a weighted average of 70% and 30% Canadian and U.S. stock and bond returns respectively). On a forward looking basis, Ms. McShane's analysis of the expected market returns over the past 10 years in relation to bond yields (weighted at 70% - 30% for Canadian and U. S forward-looking premiums respectively) resulted in a risk premium in the range of 8.25% - 8.75%. Her estimate of the current market risk premium based upon historic premiums was 6.5%. She noted that this premium needed to be adjusted to reflect the risk of utilities relative to the market risk premium. Using several models and regression analyses, Ms. McShane recommended 65% of market risk premium as the "bare bones" utility risk premium above long Canada bonds. Her adjusted equity risk premium for typical Canadian electric/gas utilities was approximately 4.25%.

Ms. McShane conducted a review of the historic risk premiums for the Canadian and U.S. utilities for the period of 1947–1999, giving primary weight to the Canadian data. She found that, using arithmetic averages, a compound risk premium was achieved in the range of 4.0% - 5.8%.

Ms. McShane also conducted an analysis of investor growth expectations for a sample of U.S. gas distributors for the period from 1993 to 2000 with similar investment risk to typical Canadian gas/electric utilities. She stated that this indicated an average risk premium of 4.8%.

The results of the three approaches studied by Ms. McShane indicated an equity risk premium for a typical Canadian utility of 4.25% - 4.5%, above a long Canada yield of 6.25%. Her estimate of the resulting cost of equity was in the range of 10.5% - 10.75%, before any adjustment for financial flexibility.

### Discounted Cash Flow Test

The discounted cash flow (DCF) test proposes that the price of a common stock is the present value of the future expected cash flows discounted at a rate reflecting risk of the cash flows.

Ms. McShane applied the DCF test to a sample of eight LDC's. She found the average and median expectations of long-term earnings growth were both 5.8%. The average and median adjusted dividend yields were 5.2% for both. She stated that adding the adjusted dividend yield to the expected growth rate results in an estimated required return on common equity of 11.0% unadjusted for financial flexibility for AGS. Applying the discounted cash flow test to APS led Ms. McShane to recommend a 11.0-11.5% return, without adjustment for financing flexibility.

### Comparable Earnings Test

The comparable earnings test measures a fair return based on the concept that invested capital should earn a return commensurate with alternative ventures of comparable risk. The application of the comparable earnings test requires the selection of industrials of reasonably comparable risk to regulated firms, selection of an appropriate time period over which returns are to be measured to estimate prospective returns and the determination of relative risk of the industrials as compared to regulated firms.

Ms. McShane selected 17 companies from 95 Canadian industrial firms that met certain selection criteria. The earnings for the selected low risk industrials were evaluated over the most recent business cycle from 1991 to 1999. She found that the average annual returns for the selected sample of low risk industrials were 12.8%.

Ms. McShane noted that the business risks of industrials were typically higher than of regulated firms. She stated that the purpose of the analysis of relative risk of selected industrials was to determine to what extent the differences in risk should result in a risk adjustment to the industrial returns. She stated that statistical measures of risk for six major publicly traded Canadian gas/electric utilities suggested that these utilities are in about the same risk class as the typical low risk industrial sample, and that the data indicated that the gas/electric utilities have experienced greater book and market return stability than the low risk industrials. She argued that, therefore, a quantification of the risk differences on the return requirements was

appropriate. This adjustment was made using the Capital Asset Pricing Model (CAPM), using an adjusted beta,<sup>14</sup> giving 2/3 weight to the raw beta and 1/3 weight to the market beta, applied to the comparable earnings test for Canadian industrials. Ms. McShane stated that this would indicate an appropriate return of 12.5% - 12.75%.

Ms. McShane considered the returns of U.S. industrials as a relevant input to the comparable earnings test due to the relatively low number of low risk consumer-oriented industrials in Canada, and the contrast of returns for low risk U.S. industrials as compared to low risk Canadian industrials for the most recent business cycle. Adjusting for corporate tax differences and differential risk with Canadian utilities, Ms. McShane determined that the applicable return was in the range of 12.5% - 13.0%

Ms. McShane gave primary weight to the Canadian results. Based upon the comparable earnings test and before adjustment for financial flexibility, she stated that the fair return would be in the range of 12.5% - 12.75%.

### **Financial Flexibility**

Ms. McShane stated that to avoid equity dilution, the “bare bones” cost of equity derived from the risk premium test should be adjusted upward to maintain financial flexibility and integrity. She stated that the adjustment should include an amount for administrative expenses related to equity issues; an amount for market pressure to avoid the tendency for the price of the stock to fall as an additional supply of stock is issued; and an additional margin to cover unforeseen events such as a sharp rise in interest rates. She stated that financing costs for high-grade Canadian firms are in the range of 4% - 5% corresponding to and after tax rate of approximately 2.5%. The allowance for market pressure was evaluated in the range of 4% - 5%. Her sum of financing costs and market pressure costs was 7%. Adding a minimal increment for unforeseen events results in a flotation cost allowance of approximately 10%. Ms. McShane stated that the flotation cost adjustment was approximately 45–50 basis points for a 7% flotation cost, and was approximately 65–70 basis points for a 10% flotation cost.

ATCO rejected Drs. Booth and Berkowitz recommended rate of return on equity as being inadequate to reflect a sufficient premium over the cost of long-term debt. It stated that the tests applied by Calgary relied on the past, and did not take in to account investors' current expectations.

### **Positions the of Interveners**

#### **Calgary**

In support of its position on rate of return on equity, Calgary submitted evidence from its witnesses Dr. Booth and Dr. Berkowitz.

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<sup>14</sup> In the CAPM model “beta” is the measure of the variance of a given stock or portfolio relative to that of the overall market. It is defined as the covariance of the stock or portfolio with the overall market, divided by the variance of the market. A beta equal to 1 implies that the stock in question has the same variance (is as volatile) as the market as a whole. A beta equal to 0.5 implies that the stock in question is 50% as volatile as the market. The theory behind the CAPM model is that stocks with a smaller beta require less return to attract investors.

Drs. Booth and Berkowitz stated that the foundations for fair rate of return on equity were:

- 1) A regulated utility should be allowed to earn a fair return on the actual capital invested in the enterprise that should be equivalent to what the stockholders could get if they took their book value and invested it elsewhere.
- 2) The rate of return should be sufficient to attract new capital without impairing the existing investments.
- 3) The rate of return should be sufficient to maintain its financial integrity at a level that attracts capital at reasonable terms.

Drs. Booth and Berkowitz calculated the fair rate of return in relation to the market risk or beta and the risk free rate compared to long Canada bond yields. They forecast the long Canada bond yield rate at 5.75% over the next two years. Drs. Booth and Berkowitz studied two risk premium models. The CAPM estimate based upon the historic average market risk premium, adjusted for the changing risk profile of long Canada bond showed a fair return on equity in the range of 8.00% - 8.16%. A newer, multi-factor model showed a fair rate of return on equity in the range of 7.68% - 8.13%. Drs. Booth and Berkowitz recommended a "bare bones" rate of return of 8.00% based on the results of their tests.

Adjusted for flotation costs, Drs. Booth and Berkowitz recommended a fair rate of return on equity at 8.25% for both 2001 and 2002, on a 35% common equity capitalization ratio for AGS and 34% for APS. This rate of return was judged as sufficient to maintain the financial integrity of a gas LDC and would be broadly consistent with the NEB awards for class 1 pipelines.

In their evidence, Drs. Booth and Berkowitz criticized Ms. McShane's use of the comparable earnings test due to the accounting practices and relative risk of the sample firms studied, the time period of the study, the screening method to select the sample of firms studied, and an inability of the comparable earnings test to measure opportunity cost. Calgary disagreed with ATCO's method of arriving at market risk premium using the arithmetic rate of return versus the geometric rate of return method, and the weighting of U. S. data used in arriving at the recommendation. Furthermore, Calgary disagreed with the adjustment of 50 basis points to the risk premium for financial flexibility.

In rebuttal evidence, Calgary evaluated the difference between the recommendations of AGS and Calgary. In its view, the difference was attributable to several adjustments used by AGS' witness, all tending to increase the rate of return requested by AGS.

Calgary criticized Ms. McShane's comparable earnings test stating that the sample used did not eliminate those firms that exhibit market power, thus violating the premise that regulation is a surrogate for competition. Calgary submitted that the comparable earnings test did not provide an insight into what earnings investors require in the future, and results in an upward bias of the risk premium, and therefore should be given no weight by the Board. Furthermore, Calgary submitted that the Board should reject Ms. McShane's result of the DCF model on the grounds that it relied heavily on U.S. data and was biased upward as a result of reliance on IBES analysts' forecasts, which could be optimistic.

Calgary submitted that Ms. McShane's Market Risk Premium test was biased upward due to her selection of data from the Canadian Institute of Actuaries and her disregard of the data from the Task Force on Retirement Income and the Canadian Stocks, Bonds and Inflation. Similarly, Calgary criticized Ms. McShane's selection of the Blume report and her disregard of the study by Gombola and Kahl, which Calgary suggested resulted in an upward bias to the recommended rate of return on equity.

Calgary submitted that Ms. McShane's addition of 50 basis points for financial flexibility was unwarranted since no evidence was provided that CU Inc. experienced any market pressure when raising common equity on behalf of AGS. Calgary agreed with the result of using Canadian data to measure market risk premium as presented in the evidence of Ms. McShane. Calgary was critical of the weight given by Ms. McShane to U.S. data and recommended that the Board reject the reliance on U.S. data and base AGS' allowed return on Canadian data.

#### **AIPA**

AIPA considered that AGS overstated the risk free rate in comparison to the average of the 10-year Canada Consensus forecast of 5.6%. AIPA submitted that a risk free rate of 5.7% would be appropriate for the test years of 2001 and 2002.

#### **CCA**

The CCA supported Calgary's recommendation of 8.25% return on equity for ATCO.

#### **FGA**

The FGA did not support the use of data from U.S. markets to evaluate investor's perceptions about raising capital in Canada. As a consequence, FGA recommended that the Board should consider 50 points as an adjustment to the risk premium for financial flexibility.

#### **MI**

The MI were critical of AGS' request for 11.5% and 12.0% return on equity for AGS and APS, respectively. The MI agreed with Calgary regarding the equity risk premium and the adjustment for financial flexibility and supported Calgary in recommending a fair return on equity of 8.25% for 2001 and 2002.

#### **Views of the Board**

As noted in the previous section, the Board is of the view that it is appropriate to consider the rate of return on common equity for AGS and APS as a combined entity, and then look to the relative risks of AGS and APS in establishing their respective allowed capitalization ratios.

The Board has reviewed the evidence of Ms. McShane for ATCO, and Drs. Booth and Berkowitz for Calgary. The Board is concerned that, despite its volume, the nature of the expert evidence provided is ultimately of little probative value to the Board in establishing this important determinant of the utility's revenue requirement.

In particular the Board notes the effect that the application of professional judgement has on the outcome of the equity risk premium test. This test has been noted to be the mainstay of this

Board and other Canadian regulatory boards over recent periods, and is also the one test undertaken by both parties. Ms. McShane provides an estimate of adjusted beta for the CAPM of .65 as being appropriate for ATCO, resulting in an equity risk premium of 425 basis points. Drs. Booth and Berkowitz criticize Ms. McShane's conclusions regarding this adjustment and note:

The beta estimate used by Ms. McShane in this hearing is too high. To raise her estimated beta of .45 to a level of .65, she applies Blume's (1975) finding that in the long run, U.S. equities in general tend to regress toward the market. ... If we now repeat Blume's analysis using the 1994-98 and 1989-93 periods...these results suggest an overall regression tendency towards an overall beta of .582 [using data from 16 Canadian utilities].<sup>15</sup>

This beta estimate of .582 is further averaged with other data on current market utility betas to arrive at an adjusted beta of .50. This is compared to another direct estimate of beta in the range of 52-56%.<sup>16</sup> In the final analysis, the value for beta used by Drs. Booth and Berkowitz is .50, associated with a return on equity of 8.00%, adjusted for the changing risk profile of long Canada bonds (an adjustment of 50 basis points).

Although the Board is of the view that Calgary's criticism of Ms. McShane's beta adjustment has merit, it finds that the further adjustments made by Calgary present their own difficulties. It is evident that the range of professional judgement that can be applied to this one aspect of one of the tests can account for a substantial difference in the estimated required return. This one difference accounts for nearly 100 basis points on return on equity, or approximately \$1.5 million per year, between Ms. McShane's beta estimate of .65 and Drs. Booth and Berkowitz' estimate of .50. The Board has examined the other evidence brought forward by parties on the issue of rate of return and has found that parties' views are similarly far apart in every instance.

The Board notes Calgary's submission that the adjustments made by Ms. McShane all increase the requests for rate of return for ATCO. However, the Board also notes that on the same page in its evidence where Calgary makes a recommendation of 250 basis points as being adequate for a risk premium for ATCO, Calgary also notes that comparable recent awards in other Canadian utility jurisdictions have ranged from 300-387.5 basis points.<sup>17</sup> The Board considers that the application of professional judgement to rate of return evidence is not a "one way street". The Board is of the view that the requests by ATCO for between 525 and 550 basis points above their long Canada bond forecast and the Calgary request for 250 basis points above their long Canada bond forecast are both outside what the Board would consider to be reasonable. Further, these estimates are far enough apart that the underlying evidence is of little value to the Board in establishing an accurate and well justified estimate of the utility rate of return required to maintain the financial integrity of the utility in the eyes of investors and the market. Subsequently, the Board must rely on an examination of past awards to CWNG to determine if there is a requirement for adjustments to those awards. The Board is also of the view that alternative methods of determining appropriate utility return may need to be examined for use in future rate cases.

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<sup>15</sup> Calgary Evidence, Appendix B. pp.11-12

<sup>16</sup> Calgary Evidence, pp.51-52

<sup>17</sup> Calgary Evidence, p.68

In Decision 2000-9, the Board awarded a risk premium of 375 basis points above the forecast long Canada rate for 1998. This was inclusive of an amount for financing flexibility. The Board notes that this is near the upper end of the range of current awards noted by Calgary. The Board has no reason to believe that investors or the market would see a need for ATCO to receive a risk premium that would be above these other awards, based on either the business or regulatory climate in Alberta. Therefore, lacking evidence that would suggest a measured adjustment up or down, the Board is satisfied that this previous risk premium award is reasonable and may be used for AGS and APS for 2001 and 2002.

The Board notes that the estimates provided by parties for long Canada bond rates are relatively close together. Calgary has forecast 5.75% and ATCO has forecast 6.25%. The Board also notes that both estimates involved the use of judgement by the expert witnesses to account for various recent financial trends. The Board finds that it is reasonable to average these estimates in order to establish a forecast long Canada bond rate of 6.0% for the test period.

The Board therefore determines that a rate of return on common equity of 9.75% is reasonable for both AGS and APS for the period of 2001/2002.

### 5.3 Appropriate Capital Structure for AGS and APS

#### Position of ATCO

ATCO applied for approval of its forecast capital structure for 2001 and 2002 in comparison to the capital structure approved in Decision 2000-9. The proposed capital structure as consolidated by the Board (exclusive of no-cost capital) is as follows:

	<u>Forecast 2001</u>	<u>Forecast 2002</u>	<u>Decision 2000-9</u>
Debt	53.8%	51.1%	45 - 50%
Preferred Equity	6.5%	6.5%	12 - 17%
No Cost Capital	0.5%	0.4%	
Common Equity	39.2%	42.0%	32 - 37%

Ms. McShane testified that a capital structure with a common equity ratio of 40% and a preferred share component in the 5-10% range, AGS would contribute its fair share to the creditworthiness of CU Inc. She testified that a capital structure with a common equity ratio of 50% and a preferred share component of approximately 5% would be appropriate for APS.

AGS requested approval for a target 40% common equity component financing rate base; however, AGS claimed it was unable to achieve a mid-year ratio of 40% due to the effect of Decision 2000-45,<sup>18</sup> dated July 4, 2000, on retained earnings in 2000.

<sup>18</sup> Decision 2000-45 ATCO Gas and Pipelines Ltd. (CWNG), 1997 Return on Common Equity and Capital Structure and 1998 GRA – Second Refiling

**Atco Pipelines**  
**2003/2004 GRA**





# **ATCO Pipelines**

**2003/2004 General Rate Application  
Phase I**

**December 2, 2003**

the Board approves ATCO Pipelines' proposed embedded costs of debt and preferred shares as set out in the Application.

### 3.1.3 Appropriate Return on Equity

This section addresses the appropriate return or profit on the shareholders' common equity investment. The approved return on common equity (ROE) will be included in ATCO Pipelines' forecast revenue requirement. The actual ROE will differ from the approved level due to the inevitable variances from forecast revenues and expenses.

**Table 17. Summary of Return on Equity Recommendations by Parties**

	Recommended ROE (%)
ATCO Pipelines Applied For	11.5
AUMA/EDM/CG	8.5-9.0
Calgary	8.5
CAPP	9.0 - 9.4
Cargill	8.0 - 9.0

### Views of ATCO Pipelines

ATCO Pipelines recommended a return on equity of no less than 11.5% for 2003.

ATCO Pipelines focused on several forms of the Equity Risk Premium (ERP) test, with confirmation from the discounted cash flow (DCF) test. ATCO Pipelines focused the bulk of its ERP evidence on the Capital Asset Pricing Model (CAPM) method, but also provided evidence using a DCF based ERP test and using actual historically achieved utility risk premiums. ATCO Pipelines' ERP test recommendation used all three forms of the ERP test and indicated a required ROE of 11 – 11.75% based on a 6% risk free rate, an ATCO Pipelines risk premium of 4.5-5.25%, plus 0.50% for financing flexibility. The DCF test, using U.S. gas distributors as a proxy, indicated a required ROE of 11% for an average risk Canadian utility. ATCO Pipelines required a 0.50% premium plus the 0.50% for financing flexibility for a total DCF test ROE requirement of 12.0%.

ATCO Pipelines argued that the ERP is a test of return on market value, not book value. It is a forward-looking concept reflecting investors' willingness to take risks and their expectations of inflation, productivity and profitability.

ATCO Pipelines argued that the estimation of the ERP is not an exact science and therefore requires evaluation of alternative risk premium estimation approaches.

ATCO Pipelines indicated that the Capital Asset Pricing Model (CAPM) method is rigorous and formal, but that all of the expert witnesses submitting evidence in this proceeding recognized it had limitations, particularly with respect to the relative risk measure, beta. ATCO Pipelines provided a quote from a noted finance author<sup>28</sup> that indicated that measured betas have not done well in predicting return and that betas are not stable from period to period.

ATCO Pipelines noted that its risk free rate was based on the December 2002 consensus forecast and that it was supported by Calgary.

<sup>28</sup> Burton Malkiel, *A Random Walk Down Wall Street*, New York: W.W. Norton & Co., 1999

ATCO Pipelines indicated that the use of the achieved risk premiums in Canada as an estimate of the required risk premium should be undertaken with caution for the following reasons:

- Canadian investment opportunities are not limited to domestic opportunities;
- The historic resource orientation of the Canadian economy casts doubt on the premise that the data are likely to be a good proxy for future returns;
- The Canadian “Market Portfolio” has been unduly influenced by a few large companies i.e. Nortel, BCE and JDS Uniphase;
- The Canadian equity market has undergone significant structural change;
- The Canadian market remains significantly less diversified than the U.S. market; and
- Improved economic fundamentals in Canada suggest that the historic differential between Canadian and U.S. bonds is not expected to persist in the future.

ATCO Pipelines argued that the U.S. equity market is a relevant historical benchmark for estimating the Canadian equity risk premium because of its diversified nature and the close relationship between the two countries’ capital markets. The relevance of U.S. markets has been recognized by the CTRC<sup>29</sup> and by the Regie de L’Energie de Quebec.<sup>30</sup> ATCO Pipelines noted that Calgary’s experts have confirmed the relevance of looking at U.S. data as a guide to seeing whether or not the Canadian estimates are reasonable.

In Reply Argument, ATCO Pipelines agreed that current Canadian market prices reflect international factors, but argued that the historic Canadian risk premiums do not. ATCO Pipelines noted that excluding U.S. data for ATCO Pipelines on the basis that its shareholders are predominantly Canadian is not supported by any theory, and would imply that the market risk premium differs for different companies in Canada depending on who owns the shares.

ATCO Pipelines argued that its analysis of the historic risk premiums for both Canadian and U.S. utilities supports an expected equity risk premium for an average risk Canadian utility of approximately 4.75 – 5.25%.

ATCO Pipelines estimated the forward-looking utility risk premium at 4.5 - 4.7% by applying the DCF method to a sample of U.S. local gas distribution companies (LDCs) for the period 1993-2002 using the consensus of analyst forecasts of long-term normalized earnings growth, and the corresponding expected dividend yield. Canadian data was not available. ATCO Pipelines accepted that analysts’ forecasts have been optimistic, but noted that as long as investors believe the forecasts, then they are unbiased estimates reflecting investor expectations. The expected earnings growth rate for the LDCs from 1993-2002 was 5.6%, which was similar to the expected long-term nominal rate of growth in the U.S. economy over the same period. ATCO Pipelines noted that CAPP’s experts recommended downward adjustment to analyst growth estimates was not based on any rigorous analysis, as admitted in testimony.

ATCO Pipelines argued that the goal in setting beta is to establish a beta that is predictive of return requirements and not simply to predict the next beta. ATCO Pipelines argued that the recent observed low levels of utility betas are not appropriate for determining the required rate of return as they were artificially lowered by the technology bubble, as also indicated by Calgary’s

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<sup>29</sup> CRTC Decision 98-2

<sup>30</sup> Regie de L’Energie de Quebec Decision 99-150

experts. ATCO Pipelines' expert's recognition of total market risk (including both diversifiable and non-diversifiable risk), as measured by the standard deviation of market returns in conjunction with beta, leads to the conclusion that a relative risk adjustment of 0.60 – 0.65 is reasonable for an average risk utility. ATCO Pipelines argued that the 0.60 to 0.65 beta is also consistent with Canadian and U.S. low risk utility actual beta, adjusted towards one, which is the practice used in published beta estimates such as provided by Value Line and Bloomberg. ATCO Pipelines' 0.60 – 0.65 figure is consistent with Calgary's long-run average historical beta estimate of 0.62, however, ATCO Pipelines noted the frailties of relying solely on raw betas. ATCO Pipelines argued that it has higher business risk and financial risk compared to an average risk Canadian utility or U.S. LDC. Using the "Hamada" formula, the specific beta for ATCO Pipelines was adjusted upwards to 0.70, to recognize ATCO Pipelines' lower than average equity ratio. Based on this beta and all of its other analysis, the appropriate risk premium for ATCO Pipelines was estimated to be 4.5 to 5.25%. ATCO Pipelines noted weaknesses in Calgary's and CAPP's lower beta estimates. ATCO Pipelines noted that, despite intervener suggestions to the contrary, its expert's adjusted betas were in fact in conformance with the stated approach of Value Line.

ATCO Pipelines argued that Calgary's multi-factor analysis should be given no weight given that the historic period used in the analysis was a period of very high interest rate volatility, whereas their forecast of the test period is for very low interest rate volatility. ATCO Pipelines noted that a study cited by Calgary also indicates that the CAPM consistently predicts lower capital costs for the regulated utilities than their historical cost. The multi-factor results found by the authors of the study noted by Calgary were on average close to 100 basis points higher than the CAPM results and these authors found these results to be more reasonable than those of the CAPM.

ATCO Pipelines used the DCF method as a reasonableness check on the equity risk premium results. A sample of low risk U.S. LDCs was used. Earning growth estimates were from "I/B/E/S International" and Zacks and were checked using the Value Line longer-term growth rates. The resulting DCF cost of equity was 11.0% for the U.S. LDCs. For ATCO Pipelines a 0.50% premium was appropriate due to higher risk, for a total DCF required return for ATCO Pipelines of 11.5%, which resulted in a required ROE of 12.0% after adding the financing flexibility amount. ATCO Pipelines noted that an article referenced by the interveners treated analysts and investors as identical. ATCO Pipelines addressed criticisms of the DCF method by noting that all of the models have limitations and CAPM has unrealistic assumptions. For this reason multiple tests should be used.

ATCO Pipelines concluded that the market/book analysis proffered by Calgary provided no insight regarding the reasonableness of the returns allowed by the NEB to TCPL. Price to book ratios include impacts from unregulated operations. In addition ATCO Pipelines argued that price to book ratios should not be compared to 1.0, but rather to those of other companies and to the market indices. ATCO Pipelines noted that TCPL out-earned the NEB formula in 5 of 7 years in a table provided by Calgary's capital markets expert, indicating that this may partially explain the high price-to-book ratios.

ATCO Pipelines recommended that the results of Calgary's income trust data be given no weight in arriving at a fair return for ATCO Pipelines. ATCO Pipelines noted that income trusts are lower risk because they have little or no debt, and this may partially explain their low returns.

ATCO Pipelines recommended a financing flexibility adder of 0.50%. Without this the market/book ratio would approach 1.0. ATCO Pipelines argued that regulation is fundamentally a surrogate for competition. Under competition, market value should trend to replacement cost, not book value.

## Views of the Interveners

### AUMA/EDM/CG

AUMA/EDM/CG recommended a maximum ROE of 9.0%, but indicated that it would defer to the final recommendations of Calgary's experts of 8.5% and CAPP's expert of 9.0%. In Reply Argument AUMA/EDM/CG indicated that on reflection its suggested 9% return was a maximum and might be overly generous, particularly given Calgary's experts' information on the potential to update to a lower risk free rate.

AUMA/EDM/CG argued that financial risk should be reflected in the ROE and that business risk should be reflected in the capital structure. AUMA/EDM/CG argued that ATCO Pipelines had effectively asked the Board to change its traditional equity risk premium method in favor of utilizing the spread between 30-year A-rated utility bonds and 30 year Canada bonds. Any change in the spread was not evidence of a need to “artificially inflate the required return”. The relevant question is whether ATCO Pipelines is able to access the equity markets on reasonable terms. There is no compelling evidence to justify changing from the traditional method for calculating an equity risk premium.

AUMA/EDM/CG argued that ATCO Pipelines' use of U.S. data to support the equity risk premium is flawed, and must be discounted to reflect the attractiveness of the Canadian market. ATCO Pipelines' data also does not reflect the recent narrowing of the U.S. market risk premium.

AUMA/EDM/CG argued that ATCO Pipelines' adjustment to the so-called “raw” beta, towards the market average beta of 1.0 is not justified. The mean of the median beta for the seven Electric/Gas Utilities, shown in ATCO Pipelines' expert evidence for the period 1995-1998, was 0.49 and for the TSE 300 Gas/Electric index for the same period was 0.51.

AUMA/EDM/CG supported a risk premium of about 2.65% for ATCO Pipelines, being the mean of the recommendations of Calgary and CAPP's experts.

### Calgary

Calgary recommended a return on equity of 8.5%, derived as indicated in the following table.

**Table 18. Summary of Calgary's Experts' ROE Recommendation:**

Long term Government of Canada yield	6.00%
Risk Premium Method	8.02-8.47%
Multi-factor Model	7.66–7.74%
Overall Recommendation	8.50%
Inherent equity risk premium in final recommendation	2.50%

Calgary indicated that the market risk premium should be forward looking, rather than being a simple average of historical data. Calgary submitted that the recent literature on market risk premiums, summarized on page 42 of the evidence of Calgary's experts, was indicative that both academics and market participants no longer expect the type of returns that were observed in the last 40 to 50 years. Given this recognized change in circumstances, the continued claims of a market risk premium based upon historical data cannot be supported.

In its risk premium method, which was weighted 50% in its final recommendation, Calgary used a market risk premium of 4.5%. Calgary found an actual historical market risk premium of 2.09-2.82% using data from 1957-2001 and 4.10-5.36% using data from 1924-2001. Corroborating evidence from eight studies, which omitted geometric means (which are lower than the arithmetic means supported by Calgary) resulted in a mean market risk premium of 4.34%. Calgary argued that it is clear from these studies that its market risk premium recommendation is quite reasonable. Calgary noted that ATCO Pipelines' market risk premium could only be justified by relying solely on the long-term arithmetic risk premium.

Calgary also provided a multi-factor model which resulted in a required equity return of 7.66 – 7.74% before the flotation allowance. Calgary gave this model a 50% weighting in its final recommendation.

Calgary recommended 6% for the risk free rate.

Calgary indicated that the appropriate beta for ATCO Pipelines was 0.50 based on a range of 0.45 to 0.55. Calgary submitted that Canadian betas should not be adjusted based upon the so-called Value Line/Merrill Lynch approach. Calgary stated that its experts have provided evidence that the utility betas regress to a utility mean of approximately 0.55 rather than to the market mean of one.

As corroborating evidence regarding beta, Calgary provided an analysis of the beta of high-dividend mutual funds. The mean of the dividend fund betas for ten separate rolling periods was 0.55. Calgary noted that the utility shares held within these mutual funds represent the integrated holding companies and are therefore more risky than ATCO Pipelines. Calgary argued that this corroborated the beta of 0.50 that it used.

As corroborating evidence, Calgary provided a DCF model of U.S. utility risk premiums. This produced a utility risk premium in the 1.89 – 2.57% range, which would be added to the risk free rate and increased by a cushion. Calgary also performed a DCF test using its expected nominal GDP growth as the estimated growth rate for the market. This DCF test resulted in a geometric return estimate of 8% for the Canadian market. Calgary noted that the principal problem with the use of the DCF method is the forecast of growth rates. Calgary recommended that the Board not rely on the DCF method, but use it only as a test of reasonableness of recommendations.

Calgary submitted that U.S. data is materially more remote and less probative than the Canadian data, by virtue of differences in taxation of investment returns, and the varying business risks and regulatory differences between jurisdictions. Calgary further noted that the markets for the securities issued to fund ATCO Pipelines are the Canadian markets.

Calgary argued that the high market-to-book ratios of the publicly traded utilities are highly suggestive that the allowed returns are in excess of the market requirements.

Calgary's capital markets expert used the market-to-book ratio as a measure of the reasonableness of the allowed return. He analyzed market to book data and returns of income trusts and concluded that the allowed return on equity should be set at the 8.5% level recommended by Calgary's primary rate of return experts. Calgary noted that the NEB formula allows a return on equity of 9.79% for 2003 and the BCUC formula allows its benchmark low-risk utility to earn 9.42% for 2003. The record is clear that companies subject to these formulas are able to access debt and equity markets. Further, while ATCO Pipelines argues that the high price-to-book value ratio may be the result of non-regulated operations, the consolidated return for TCPL has averaged below the level of the NEB formula when looked at over the last 4,5,6 or 7 years, and yet the high price-to-book ratios persisted in most years.

Regarding income trusts, Calgary's capital market expert indicated that the record was clear that the yield of income funds is dependent on their earned returns and income funds are attracting massive amounts of capital with after tax returns below 6%. Calgary provided detailed evidence as to why income trust return data is relevant and why ATCO Pipelines' rebuttal of this evidence was not valid.

Calgary recommended a 0.50% allowance for flotation and market flexibility.

Calgary argued that ATCO Pipelines' analysis was flawed in that the sample was discontinuous and had composition problems. In addition it was illogical to compare a promised yield to a required return for a number of reasons, including the fact that a promised yield included a default risk and therefore the required return on the bond was below its promised yield.

## **CAPP**

CAPP's expert recommended 9.0% including 0.25% for financing flexibility.

CAPP itself indicated that it would support 9.4% based on a slightly higher beta and a higher financing flexibility allowance.

CAPP's expert argued that the appropriate market risk premium is the arithmetic average over the longest available time period. CAPP's expert argued that attempting to adjust the data to reflect current circumstances is tantamount to attempting to predict the future and this approach should be rejected in favor of a simple average over the longest time period available.

CAPP's expert argued that Canadian data should be used and would reflect global opportunities. If global opportunities were to be explicitly considered, then a world index rather than U.S. data should be used. CAPP's expert argued that world index data might lower the market risk premium due to increased diversification.

CAPP's expert rejected ATCO Pipelines' adjustments of betas toward the market average of 1.0. After adjusting for ATCO Pipelines' small size, CAPP's expert argued that ATCO Pipelines' beta should be 0.45. However, CAPP itself indicated a beta range of 0.515 to 0.54 based on pipeline industry betas and excluding data from 2000-2002, then adjusted for ATCO Pipelines' small size. CAPP's expert rejected ATCO Pipelines' use of U.S. data in determining beta.

CAPP supported 6.0% as the risk free rate.

CAPP's expert rejected ATCO Pipelines' analysis based on increased bond spreads, citing the difference between promised yields on bonds and the expected yield on bonds after accounting for the probability of default.

CAPP's expert argued for a financing flexibility allowance of 0.25% and noted that there is no evidence that ATCO Pipelines has incurred or will incur the flotation costs estimated by its expert. CAPP indicated in argument that it would not object to continued use of the 0.50% financing premium.

CAPP's expert indicated that it is worthwhile to verify the cost of equity by using more than one method. CAPP's expert noted that there is over-optimism in analyst growth factors, but that there is no evidence to show how much of the over-optimism in analyst forecasts is discounted or incorporated into securities prices. CAPP's expert applied decision theory and adjusted ATCO Pipelines' DCF analysis to reduce the growth estimates by 50% of the estimated over-optimism, indicating that the resulting ROE was close to his result obtained by using the equity risk premium approach.

In Reply Argument CAPP rejected ATCO Pipelines' argument for a 0.50% premium to compensate for its higher business and financial risks. CAPP argued that capital market theory is unequivocal in stipulating that only non-diversifiable risk should be incorporated into the cost of equity. In CAPP's view ATCO Pipelines has not shown that the business risks for which it seeks the adjustment are non-diversifiable.

## **Cargill**

Cargill recommended an ROE of 8-9% based on the evidence in this case, taken as a whole.

Cargill argued that when the highly questionable assumptions and adjustments of ATCO Pipelines' expert are stripped away, it appears that the approaches used by the company and intervener witnesses are basically consistent and point to a required equity return in the range of 8-9%.

Regarding the price-to-book ratio, Cargill argued that Calgary's capital markets expert's analysis of book value should frame the Board's evaluation of the more technical ROE evidence. Cargill noted that this evidence indicated high market-to-book ratios, demonstrating that the allowed ROEs generated by the NEB formula are not only adequate, but are generous.

Cargill rejected ATCO Pipelines' argument that utility equity should trade at replacement cost rather than book value. Cargill argued that ATCO Pipelines' expert seemed to be acknowledging the high market-to-book ratios and had attempted to justify them by comparisons to competitive situations where asset values trend towards replacement cost. Cargill argued that the regulatory objective has always been to establish a fair return on book value and justifications based on comparisons to competitive firm's assets being valued at replacement cost were inappropriate.

Regarding the use of U.S. market data, Cargill argued that it was perplexed as to why the Board would even consider looking at U.S. data to determine the cost of equity for a Canadian utility with no U.S. operations and with Canadian ownership that raises its capital in Canadian markets. Cargill argued that other Canadian companies and the Canadian market would intuitively seem



to provide the best available data to determine ATCO Pipelines' cost of equity. In addition, Cargill noted that Calgary and CAPP had provided additional technical reasons why the use of U.S. data was inappropriate.

Cargill rejected the use of the DCF method due to the unreliability of analyst growth forecasts.

## **FGA**

FGA noted that the experts did not update their recommended risk free rates to the latest information available at the time of the hearing. FGA noted Calgary's comment that it refrained from such an update in order to be consistent with three other recent GRAs before the Board, based on much the same evidence. FGA argued that the experts should have updated their risk free rates and taken into account that the Board is only dealing with 2003 in the decision. FGA submitted that the lower end of CAPP's expert's forecast risk-free rate of 5.7% is the appropriate forecast rate, as it most closely follows the current information available at the time of the hearing.

FGA noted that ATCO Pipelines' expert has expressed reservations about the DCF method in past hearings and that these limitations were discussed on the record in this proceeding. FGA submitted that the inherent limitations in the DCF test have not been overcome, including its unrealistic assumptions. FGA also provided specific criticisms of the computation of ATCO Pipelines' DCF test. FGA submitted that no weight should be given to ATCO Pipelines' expert's DCF test.

## **Views of the Board**

In this section, the Board will address the appropriate rate of ROE for ATCO Pipelines, by examining the following factors:

- The Role of U.S. Data
- Market-to-Book Ratio
- Income Trust Data
- The Multi-factor Model
- The DCF Method
- Equity Risk Premium Methods
- CAPM equity risk premium results
- Risk Free Rate
- Beta
- Market Risk Premium
- Flotation Allowance
- Other Considerations
- Appropriate ROE for ATCO Pipelines

### **The Role of U.S. Data**

The Board notes the arguments of ATCO Pipelines that U.S. data should be considered in setting the ROE of ATCO Pipelines. It cited globalization of investment opportunities, the undue influence of several large stocks on Canadian market data and changes in the Canadian economy and its relationship to the U.S. economy. The Board also notes the arguments of Calgary regarding differing tax structures and regulatory environments; CAPP's argument that, under

standard finance theory, globalization should reduce rather than increase risk premiums; and Cargill's argument that use of U.S. data is patently inappropriate given that ATCO Pipelines operates in Canada, raises money in Canada and is largely owned by Canadians.

The Board agrees with Calgary that Canadian data provides a sufficient indication of the Canadian market's required ROE. In particular, the Board notes the differing tax structures and agrees that the impact of international opportunities is reflected in the Canadian data, to an appropriate degree.

Therefore the Board considers that it is not appropriate to place significant weight on U.S. data, but considers that U.S. data can be used as a reasonableness check.

### **Market-To-Book Ratio**

The Board notes that Calgary did not directly use its market-to-book ratio evidence in calculating its proposed 8.50% ROE, but instead treated it as corroborating evidence.

The Board agrees with Calgary that consistently high market-to-book ratios for regulated utilities may potentially constitute evidence that awarded returns may be generous. However, the usefulness of this analysis is diminished by the dearth of pure-play utilities trading on the Canadian stock exchanges and a relative lack of pure-play utility merger and acquisition data.

In addition, when investors bid up holding company utility stock prices, it is not clear to the Board if this behaviour indicates that they are accepting and require a lower return than awarded, or instead indicates, as suggested by ATCO Pipelines, that they expect the holding company ROE to exceed the awarded return of its regulated utility subsidiary(s). For these reasons, the Board has placed little weight on market-to-book ratio data, in this proceeding. However, the Board notes that directionally, this evidence supports lower rather than higher returns.

### **Income Trust Data**

The Board notes that Calgary did not directly use its income trust evidence in calculating its proposed 8.50% ROE, but instead treated it as corroborating evidence. The Board understands why Calgary would choose such evidence directionally, given the large amounts of capital migrating to income trusts in the market.

However, in this Decision the Board is not persuaded to Calgary's implicit view that income trust investors were expecting returns below 6% and therefore utility investors should be taken to accept returns of this level. In particular, the Board is not persuaded that investors in utilities such as ATCO Pipelines or its parent expect their returns to equal the ROEs of the income trusts. The Board has therefore placed little weight on the income trust return data in this proceeding.

### **Multi-factor Model**

The Board considers Calgary's Multi-factor model to have theoretical merit. In particular, the Board recognizes that the CAPM model is being applied to a market such as the TSX that excludes bonds, when the theory indicates that the market index should include bonds. In theory, the Multi-factor model may alleviate this problem. However, the relatively short data period of 1982 to 2001, which was a period of extreme interest rate volatility, may not be representative, and the fact that Calgary's experts find it necessary to replace the actual term premium with a 1% figure leaves the Board with some doubt about the results of this model, at this time.

In the circumstances, the Board does not consider it appropriate to place 50% weighting on Calgary's Multi-factor Model calculation as recommended by Calgary. Rather, the Board has placed very little weight on this calculation.

### **DCF Method**

The Board shares Cargill's and CAPP's concerns regarding the optimistic nature of analyst growth forecasts with respect to the reliability of the DCF method, and notes that ATCO Pipelines has not denied that the optimism exists. The Board does not agree with ATCO Pipelines' argument that over-optimism would not be an issue as long as investors legitimately believed the over-optimism and priced utility securities accordingly. In the Board's view it would not be reasonable to award a return on the book value of equity that was the result of growth forecasts that were acknowledged to be over-optimistic.

Therefore, the Board has not placed any direct weight on the DCF results that are based on analyst growth forecasts.

The Board notes Calgary's alternative DCF analysis which used a nominal GDP growth forecast as a reasonableness test for the market return. In the Board's view this approach has merit. Therefore the Board has considered this result in reviewing the reasonableness of its ROE determination.

### **Equity Risk Premium Methods**

Historically, the Board has placed most weight on the CAPM equity risk premium method. In this proceeding, ATCO Pipelines focused on several forms of the equity risk premium method, including CAPM, and used the DCF test for confirmation. The CAPM form of the equity risk premium approach was given 50% weight in Calgary's recommended ROE. CAPP used the CAPM method with confirmation by the DCF method. Cargill supported the use of the CAPM method and rejected the use of the DCF method. FGA also rejected the use of the DCF method. In summary while a number of experts saw value in other methods, and felt that reliance on a single test was inappropriate, there was relatively broad support for substantial, but not exclusive, reliance on the CAPM equity risk premium method.

In addition the Board has specific concerns regarding the results of the Multi-factor Model and the DCF methods. These concerns are identified elsewhere in this section.

The Board notes that ATCO Pipelines also presented results from a DCF equity risk premium test. The Board has not placed significant weight on this result due to its reliance on analyst earnings growth estimates. As indicated above, the Board did give some consideration to Calgary's alternative DCF analysis, which relied on GDP growth estimates and not on growth estimates for individual firms, as a check on reasonableness.

The Board also notes that ATCO Pipelines presented evidence on the historic achieved utility risk premiums in the U.S. and Canada. The Board believes that this method may suffer from circularity and notes that ATCO Pipelines had confirmed that the mid-point of the achieved Canadian utility risk premium was above the overall market risk premium for the period used. In the Board's view it is not reasonable to expect utility returns to exceed market returns in the future. Consequently, the Board did not place weight on the historic utility achieved risk premium.

The Board considers that a fair ROE can most soundly be determined by reliance on the CAPM equity risk premium method. However, the Board recognizes that the results from the CAPM method should not be accepted if they are outside the bounds of reasonableness suggested by other considerations.

### **CAPM Equity Risk Premium Method Results**

Based on its historical use and broad, although not complete, support among the cost-of-capital experts, the Board considers that, despite some concerns regarding CAPM expressed by ATCO Pipelines, a fair ROE can be determined primarily by reliance on the CAPM equity risk premium method. However, the Board will test the reasonableness of the result through other considerations.

The Board will determine an ROE using the CAPM equity risk premium method by assessing the following factors:

- Risk Free Rate
- Beta
- Market Risk Premium
- Flotation Allowance
- Other Considerations

### **Risk Free Rate**

The Board notes that there was broad support for the use of a 6.0% risk free rate.

Accordingly, the Board will utilize a risk free rate of 6.0% in its determinations in this Decision.

### **Beta**

The Board notes that the parties put forward somewhat disparate positions regarding the range of beta. The Board agrees with ATCO Pipelines' assessment that the goal in setting beta is not simply to predict the next beta. Instead, the Board believes that the goal in setting beta is to reflect investors' reasonable expectations of relative risk and that this is best achieved by reflecting a longer term view.

ATCO Pipelines argued for a beta of 0.60-0.65 for an average risk utility and 0.70 for ATCO Pipelines. ATCO Pipelines' beta was partly based on use of U.S. data.

The Board agrees with Calgary that the appropriate beta for ATCO Pipelines was 0.50 based on a range of 0.45 to 0.55. Calgary also indicated that the long run average utility beta has been 0.62 and that the long-run regression tendency is about 0.55.

CAPP's expert argued that ATCO Pipelines' beta should be 0.45. However, CAPP itself argued for a beta of 0.515 to 0.54.

In the Board's view, due to small sample sizes, the beta for individual functions such as pipelines are more difficult to estimate than the average regulated utility beta. This is particularly true in the case of ATCO Pipelines, which would not necessarily be expected to have a beta similar to large gas pipelines. In addition, the Board notes its practice of adopting an ROE consistent with other utilities and, where necessary, adjusting for risk differentials in the equity ratio. Therefore,

the Board finds it reasonable that the beta used in the ROE calculation be based on an average risk utility.

The Board considers that based on the record before it and the expert recommendations presented in this proceeding, the evidence supports a beta for ATCO Pipelines of 0.55.

### **Market Risk Premium**

Calgary provided a market risk premium figure of 2.1 – 2.8% using data from 1956- 2001, and then adjusted this to a final figure of 4.5%. Calgary also found an actual historical market risk premium of 4.10-5.36% using data from 1924-2001. Calgary indicated that for historic data, the arithmetic premium rather than the geometric premium was most appropriate as the estimate for the next year's return, but that adjustments should be made for changes in circumstances. In its summary table, as revised during the hearing, Calgary provided a Canadian arithmetic risk premium of 6.00% based on data from 1900-2000. Calgary also provided, in Exhibit 29-65, a number of corroborating academic studies to demonstrate that their 4.5% figure was not unreasonable.

While strongly recommending against sole reliance on historic Canadian data, ATCO Pipelines' expert indicated that the arithmetic average post-World War II Canadian risk premium was 5.5%.

CAPP's expert indicated that the Canadian market risk premium was between 5.5 and 5.7%. This estimate relied on two studies. The first study was a Canadian Institute of Actuaries report using data from 1947—2001. The second study was by Dimson, Marsh and Staunton and indicated a market risk premium of 5.7% for Canada.

The Board has reviewed Calgary's evidence that prospective studies indicate a lower risk premium. The Board notes Calgary's evidence that academic prospective studies suggest an equity risk premium considerably smaller than the historic level. Therefore, the Board considers it possible that directionally the 5.5% required market risk premium estimate for 2003 could be high rather than low. However, historically, the Board has placed most weight on Canadian market risk premium data, using the arithmetic mean. Given the relatively close agreement among the experts regarding the Canadian arithmetic risk premium, the Board accepts ATCO Pipelines' expert's historical figure for the Canadian risk premium of 5.5%. The Board considers that this is a reasonable estimate of the required Canadian market risk premium for 2003.

### **Flotation Allowance**

The Board notes that both Calgary and ATCO Pipelines applied a flotation allowance of 0.50%, while CAPP's expert recommended a flotation allowance of 0.25%. Given that the Applicant and the Interveners largely supported it, the Board will use a flotation allowance of 0.50% for the purposes of this Decision.

### **Other Considerations**

Using the CAPM method, which is the method that it has placed most weight on in the past few years, the Board calculates an ROE of 9.5%. This is based on the components discussed above – i.e. a risk free rate of 6.0%, a market risk premium of 5.5%, a beta of 0.55%, and a flotation allowance of 0.50%. This calculation is further detailed in Table 19 below.

Prior to finalizing its ROE award, the Board believes that it is beneficial to consider the reasonableness of a 9.5% ROE, based on considerations other than the CAPM method.

The Board notes ATCO Pipelines' argument that U.S. awarded returns are higher than 9.5%. Directionally, this indicates that the 9.5% return could be considered low on that basis. However, a number of other reasonableness factors do not support this conclusion.

The Board notes Calgary's evidence that the NEB formula ROE return for 2003 results in an ROE of 9.79% and that the BCUC formula allows its benchmark low-risk utility to earn 9.42%. The Board considers that this is indicative that an ROE of 9.5% for ATCO Pipelines is not unreasonable.

The Board also notes Calgary's evidence that utility holding companies with significant regulated operations are trading at high market-to-book ratios. This provides added comfort to the Board that a return that is similar to the awards of the NEB and other Canadian regulators is not low.

The Board notes Calgary's application of the DCF method to the market as a whole, which resulted in a geometric Canadian market return of 8.0%. An equivalent arithmetic return would be somewhat higher depending on the assumed volatility. The Board notes that this version of the DCF method does not rely on analyst earnings forecasts, but rather on forecasts for real GDP growth and for inflation. The Board notes that this method directly considers prospective return expectations, while the CAPM method is based on historical experience. The Board has not relied on this method, but believes that it provides further comfort that a return for ATCO Pipelines of 9.5% is not low.

In the Board's view, the above reasonableness checks on balance confirm that the 9.5% ROE calculated by the CAPM method is a reasonable return for ATCO Pipelines.

### **Appropriate ROE for ATCO Pipelines**

The Board had concerns regarding the reliance on analyst estimates associated with the DCF method. The Board also had concerns regarding the Multi-factor Model, as noted earlier in this Section. The Board notes that the CAPM method continues to have the broadest level of support among the experts. The Board calculated an ROE based on the CAPM method and then considered the reasonableness of the result based on other factors addressed by parties in this proceeding. Therefore Board considers that a fair ROE for ATCO Pipelines has been determined primarily, but not exclusively, using the CAPM method.

The Board considers that an appropriate ROE for ATCO Pipelines is 9.5% for 2003 and as a placeholder for 2004, in respect of which the final determination of ROE would be made in accordance with the findings in the Generic Cost of Capital proceeding.

The ROE of 9.5% is calculated using the CAPM equity risk premium method as follows:

**Table 19. Board Approved – ROE and Components (% , except beta)**

	<b>Board Approved</b>
Long-term risk free rate	6.0
Canadian Market Risk Premium Estimate	5.50
Beta or Relative Risk Factor	0.55
Utility Risk Premium (Market x Beta)	3.0
Flotation Allowance	0.5
Total ROE	9.5

The Board directs ATCO Pipelines, in its Refiling, to use, for 2003, a return on common equity of 9.5% for purposes of calculating the revenue requirement. The ROE for 2004 will be a placeholder amount pending the outcome of the Generic Cost of Capital decision.

### **3.2 Appropriate Capital Structure**

This section addresses the appropriate capital structure, which is the %age or ratio of ATCO Pipelines' financing from each of three sources: common equity, preferred share equity, and debt.

#### **3.2.1 Combined or Separate Deemed Capital Structures for APN and APS**

##### **Views of ATCO Pipelines**

ATCO Pipelines proposed to adopt a single capital structure, arguing that there is no benefit to separately determining capital structures for APN and APS that would justify the increased costs. ATCO Pipelines' expert indicated that APN and APS are of similar enough risk not to differentiate between the two in terms of capital structure. ATCO Pipelines also indicated that a single capital structure is consistent with past approaches.

##### **Views of the Interveners**

###### **AUMA/EDM/CG**

AUMA/EDM/CG recommended that the Board determine separate capital structures for APS and APN. AUMA/EDM/CG indicated that if the Board cannot find a basis to differentiate the risks, then it would not be adverse to the Board making a finding of the same deemed equity component for APS and APN.

AUMA/EDM/CG argued that separate capital structures are consistent with its recommendation that APN and APS maintain separate revenue requirements and rates. AUMA/EDM/CG argued that APS is of higher risk than APN, but noted that the intervener experts were divided in their opinions as to which of APN or APS was more risky.

###### **Calgary**

Calgary recommended that the Board approve separate capital structures for each of APS and APN. Calgary argued that business risks differ between APN and APS due to differing proportions of service provided to gas distribution customers. Calgary argued that the use of separate capital structures, given differences in risk, would prevent cross subsidization.

**EUB Generic Cost of Capital**  
**July 2, 2004**





## **Generic Cost of Capital**

**AltaGas Utilities Inc.  
AltaLink Management Ltd.  
ATCO Electric Ltd. (Distribution)  
ATCO Electric Ltd. (Transmission)  
ATCO Gas  
ATCO Pipelines  
ENMAX Power Corporation (Distribution)  
EPCOR Distribution Inc.  
EPCOR Transmission Inc.  
FortisAlberta (formerly Aquila Networks)  
NOVA Gas Transmission Ltd.**

**July 2, 2004**

## 4 RETURN ON EQUITY

### 4.1 Common Return on Equity for all Utilities versus Utility-Specific ROEs

In this section, the Board will address whether there should be a common ROE applicable to all Applicants or whether there should be utility-specific ROEs. The Board will address the potential use of an adjustment mechanism for ROE, which could be applicable to either a common ROE or to utility-specific ROEs, in a later section of this Decision.

The following table summarizes the positions of the parties with respect to the issue of a common ROE applicable to all Applicants versus utility-specific ROEs:

**Table 1. Common ROE versus Utility-Specific ROE Requirements**

Recommended or Not Opposed to Common ROE	Opposed to Common ROE – Favoured Utility-Specific ROE
AltaGas ATCO Calgary CAPP Cargill CG ENMAX IPCAA IPPSA	Companies NGTL

Parties who supported a common ROE indicated that differences in business risk should be reflected through adjustments to capital structure. Certain of these parties also indicated that in the event that adjusting capital structure was not adequate to reflect the business risk for a particular Applicant, the common ROE could be adjusted for that particular Applicant. These parties generally took the position that the onus should be on each individual Applicant to establish the need for an exception to the common ROE. Interveners took the position that none of the Applicants had established such a need. ATCO, while supporting a common ROE, submitted that an exception was required for ATCO Pipelines.

The Board does not consider that persuasive arguments were raised against the use of a common ROE. The Board disagrees with NGTL's view that a common ROE fails to recognize the impact of leverage on the cost of equity and with the Companies' view that companies in the same industry may have different investment risks that require different ROEs. In the Board's view, a common ROE approach can accommodate these differences, by adjusting for any material differences in investment risk that would otherwise occur, through an adjustment to the capital structure, or, in exceptional circumstances, through a utility-specific adjustment to the common ROE.

The Board will therefore establish a common, or generic, ROE to be applied to all Applicants. The Board will address the need for any utility-specific adjustments to the common ROE in the capital structure section of this Decision.

In this regard, the Board considers that unique utility-specific adjustments to the common ROE should only be made in exceptional circumstances where adjusting capital structure alone is not sufficient to reflect the investment risk for a particular Applicant.

## 4.2 ROE Methodology and 2004 ROE

### 4.2.1 Introduction

The following table summarizes the 2004 ROE recommendations of the expert witnesses:

**Table 2. 2004 ROE Recommendations by Expert Witnesses**

Witness (Sponsoring Party)	Applies to	ERP Tests ROE Results (%)	DCF Test ROE Results (%)	CE Test ROE Results (%)	2004 Recommended ROE (%)
Ms. McShane <sup>10</sup> (AltaGas/ATCO)	All except ATCO Pipelines	10.5-10.75	11.0-11.25	No less than 13	11.0-11.5
Dr. Evans <sup>11</sup> (Companies)	Companies	9.8-10.4		12 (for ETI)	10.5-11.25
Dr. Neri <sup>12</sup> (ENMAX)	ENMAX	10.05-11.65	10.5-10.95		11.5
Drs. Kolbe & Vilbert <sup>13</sup> (NGTL)	NGTL	11	10.3-14.1, <sup>14</sup> used as check		11 at 40% common equity
Dr. Booth <sup>15</sup> (Calgary/CAPP)	All	8.12	Confirmed ERP of 8.12 was fair	9-10, used as check	8.12
Drs. Kryzanowski & Roberts <sup>16</sup> (CG)	All	8.05			8.05

The Board notes that no party relied directly on an ATWACC approach to setting a fair return for utilities. For the ERP results in the above table, all experts relied at least in part on the CAPM form of the ERP test. Most experts also relied in part on various other tests, including other forms of the ERP test, the DCF test, the CE test, and other measures of comparable investment. The Board will consider each of these approaches in the following sections.

### 4.2.2 After Tax Weighted Average Cost of Capital

NGTL's evidence (Exhibit 013-03) states:

In the first phase of this proceeding, NGTL recommended that the Board cast the issues net broadly enough to include methodologies other than the traditional. While the EUB Notice of Hearing does not explicitly exclude the ATWACC approach, it does so implicitly by establishing the scope of the proceeding in capital structure/return on equity terms. NGTL has therefore focused its evidence on the traditional methodology, subject to the fundamental precepts that the cost of equity depends on the amount of financial risk of the company, and that financial risk changes with capital structure.<sup>17</sup>

<sup>10</sup> Exhibit 005-10-2, Evidence of Kathleen McShane, page 5

<sup>11</sup> Exhibit 003-03, Evidence of Robert E. Evans, pages 24 and 25 and Exhibit 012-01, Evidence of Robert E. Evans Supplement C page C-20

<sup>12</sup> ENMAX, Argument, page 16

<sup>13</sup> NGTL Argument, page 20

<sup>14</sup> Exhibit 013-06, Evidence of Michael J. Vilbert, page 52

<sup>15</sup> Calgary/CAPP Argument, page 17 and Exhibit 016-11(a), pages 14 and 36

<sup>16</sup> CG Argument, page 47

<sup>17</sup> Exhibit 013-03, NGTL Evidence, page 5, line 15

In its Argument, NGTL stated:

In the first phase of this proceeding, NGTL recommended that the Board cast the issues net broadly enough to include methodologies other than the traditional. The EUB Notice of Hearing implicitly excluded the ATWACC approach by establishing the scope of the proceeding in capital structure/return on equity terms.<sup>18</sup> (Footnotes excluded)

Notwithstanding NGTL's statements that the Board had not explicitly excluded the ATWACC approach, under cross-examination NGTL confirmed that it had not requested the Board to consider the ATWACC approach to cost of capital matters. The following dialogue occurred during examination by Board Counsel of NGTL's witness, Mr. Brett:

Q.....Are you in the context of your evidence, suggesting that the Board should consider ATWACC and ATWACC methodology in terms of coming up with a fair return for NGTL?

A. MR. BRETT:.....We have not asked the Board to set tolls using an ATWACC methodology which, for example, is what we did in the fair return. What we have indicated is that leverage matters and that capital structure impacts the return that is required; and to our mind, in order to determine that interrelationship, you have to be cognizant of the overall return on capital.

Q..... So, again, just to be clear, you're not asking the Board to consider ATWACC in terms of how it would set a fair return; moreover, it is being suggested by the company that it is one of the tools it uses as, perhaps, a check in terms of what a fair return would be; would that be a fair statement?

A. MR. BRETT: .....I think what I said, and what I intended to say, is we have not asked the Board to use a return on capital or ATWACC for setting a revenue requirement. We have applied for the traditional ROE on equity thickness.<sup>19</sup>

Given the submissions at the beginning of the proceeding, the Board's written views on the scope for the proceeding and the examination during the Hearing, the Board does not agree with NGTL's stated interpretation of the Board's Notice of Hearing dated April 16, 2003. The Board considers it clear that the Notice of Hearing did not limit, either explicitly or implicitly, any submissions or evidence that a party might wish to present in respect of the approach or the methodology that a party would urge upon the Board to consider in making a determination of an appropriate fair return.

In the Notice of Hearing, the Board stated:

Having considered the submissions received from the above parties, the Board is of the view that a standardized approach to rate of return on equity and capital structure has the potential to achieve certain positive benefits including reduced regulatory costs, while continuing to result in a fair return for all utilities and in just and reasonable rates for all customers. The Board has therefore determined that it will proceed with a generic cost of capital hearing to focus on the possibility of establishing a standardized approach to rate

<sup>18</sup> NGTL Argument, page 18

<sup>19</sup> Transcript, Volume 20, pages 2777- 2778

of return on equity and capital structure for all utilities under the jurisdiction of the Board.<sup>20</sup>

It is clear that the Notice refers only to the possibility of establishing a standardized approach to rate of return on equity and capital structure for utilities. Further, in the Board's letter of May 28, 2003, the Board clarified that it had not already made a final determination to adopt a standardized approach to rate of return and capital structure.

The Board confirms that it expects to adopt a standardized approach to rate of return and capital structure. The Board decided to continue with a generic cost of capital hearing based on a record that supports the overall merits of a standardized approach to rate of return and capital structure. **The Board wishes to emphasize, however, that the approach ultimately adopted by the Board may differ between industries or on some other appropriate basis.**<sup>21</sup> (Emphasis added)

The language in the Board's Notice reinforced the decision of the Board to proceed to a hearing to consider a standardized approach to rate of return and capital structure. However, the last sentence of the paragraph clarified to parties that a standardized approach to rate of return and capital structure may not be found to be appropriate and that the Board remained open to other cost of capital approaches.

The Board also notes the statement of NGTL in their evidence:

Properly applied, ATWACC and the traditional methodology should yield similar results.<sup>22</sup>

This statement by NGTL clearly indicates its position that the results obtained under one methodology for determining a fair return should be similar to the results obtained through the other methodology, when each methodology is properly applied. The Board also notes that the NGTL evidence and argument provided submissions on an appropriate return on equity and capital structure for NGTL as well as the ATWACC equivalent.<sup>23</sup>

#### 4.2.3 CAPM Test

As noted above, all experts relied at least in part on the CAPM form of the ERP test. The Board will address other forms of the ERP test relied on by the experts in this Proceeding in the next section of this Decision.

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<sup>20</sup> EUB Notice of Hearing, April 16, 2003

<sup>21</sup> Board's letter of May 28, 2003

<sup>22</sup> Exhibit 013-03, NGTL Evidence, page 5

<sup>23</sup> For example Exhibit 013-03, NGTL Evidence, pages 4 and 6 and NGTL Argument pages 19, 89, 92 and 117

The following table summarizes the CAPM recommendations of the expert witnesses:

**Table 3. CAPM Recommendations<sup>24</sup>**

Witness (Sponsoring Party)	Risk-free Rate (%)	MRP (%)	Beta	Flotation Allowance (%)	ROE (%)
Ms. McShane (AltaGas/ATCO)	5.75	6.0	0.60-0.65 <sup>25</sup>	0.50	10.0
Dr. Evans (Companies)	5.60	5.75	0.60	0.75	9.8
Dr. Neri (ENMAX)	6.15	6.5	0.60	0.50 <sup>26</sup>	10.5 <sup>27</sup>
Drs. Kolbe & Vilbert <sup>28</sup> (NGTL)	5.65	5.5	0.61	0.50 <sup>29</sup>	9.5 <sup>30</sup>
Dr. Booth (Calgary/CAPP)	5.5	4.5	0.45-0.55 <sup>31</sup>	0.50	8.25
Drs. Kryzanowski & Roberts (CG)	5.6	4.7	0.50	0.10	8.05

### **Risk-Free Rate**

A forecast of the long-Canada bond yield is traditionally used as the risk-free rate, for CAPM purposes. The Board notes that none of the experts suggested departing from this practice.

The Board notes from the above table that the range of risk-free estimates was from 5.5-6.15%. Dr. Booth's (sponsored by Calgary/CAPP) estimate of 5.5% was at the low end of the range. However, CAPP noted in argument that the November 2003 Consensus Forecast used by the NEB for its 2004 ROE determination resulted in a forecast of the long-Canada bond yield used by the NEB for 2004 of 5.68%, which would increase CAPP's 2004 ROE recommendations.

The Board notes that Dr. Neri's (sponsored by ENMAX) estimate of 6.15% is significantly higher than any other estimate. Excluding both Dr. Booth's and Dr. Neri's estimates would result in a range of risk-free estimates of 5.60-5.75%.

The Board considers this range of 5.60-5.75% to be a reasonable range for the 2004 risk-free rate, with a midpoint of 5.68%.

The Board notes that this midpoint of 5.68% is the same as the risk-free rate used by the NEB for 2004, which was based on the November 2003 Consensus Forecast. The Board considers the use of a risk-free rate based on the November 2003 Consensus Forecast is consistent with the formula to adjust the generic ROE that the Board establishes in a later section of this Decision. Use of the November 2003 Consensus Forecast is also consistent with the objective of establishing utility revenue requirements based on forecasts made in advance of the test year.

<sup>24</sup> Cargill Argument, page 15, except as otherwise indicated

<sup>25</sup> Exhibit 005-10-2, Evidence of Kathleen McShane, page 30

<sup>26</sup> The Board has added the 0.50% flotation cost indicated in the CAPP/Calgary Argument at page 7

<sup>27</sup> Ibid.

<sup>28</sup> Exhibit 013-06, Table No. MJV-10, panel B, "Average C" ("Averages A & B" are virtually identical to C) and Exhibit 013-06, page 39

<sup>29</sup> Flotation costs assumed to be 50 basis points; NGTL considered flotation costs as a valid cost, but did not make a specific recommendation. NGTL Argument, page 55

<sup>30</sup> Ibid.

<sup>31</sup> Exhibit 016-11(a), Evidence of L.D. Booth, page 23

Therefore, the Board finds that an appropriate risk-free rate for 2004 is 5.68%.

### **MRP (Market Risk Premium)**

The Board notes that some parties, including IPCAA, argued that the arithmetic average MRP overstates the returns that investors have received or can expect to receive in the future. In the Board's view, when a forecast is based on the historic average, the arithmetic average MRP represents the best estimate of the short-term return and the geometric average represents the best estimate of the long-term return. The Board has not been persuaded that it should change its practice of using the arithmetic average. Consequently, the Board will maintain its practice of using the arithmetic average rather than the geometric average.

The following table summarizes the evidence on the average arithmetic MRPs in Canada and the U.S. for various time periods:

**Table 4. Historical Arithmetic Canadian and U.S. MRPs**

	Canada	U.S.
1802-1998 <sup>32</sup>		4.7
1900-2002 <sup>33</sup>	5.5	6.4
1924-2002 <sup>34</sup>	5.0	
1926-2001 <sup>35</sup>		7.0
1936-2002 <sup>36</sup>	4.7	
1947-2002 <sup>37</sup>	5.0	6.7
1957-2002 <sup>38</sup>	2.3	4.2

In this Proceeding, a number of concerns were raised regarding the use of historic data as a reasonable estimate for the future MRP:

1. Dr. Booth indicated that Canadian data prior to 1956 should not be used. However, Dr. Booth indicated that the Canadian equity risk premium since 1956 has been only about 2.3%. Dr. Booth then adjusted this figure upward to 4.5%, to take into account the influence of earlier data, the unexpected performance of the bond market, and the U.S. data.<sup>39</sup> This indicates that Dr. Booth was unable to rely on the historic data without a material adjustment;
2. ATCO noted a number of problems in using Canadian historical data including structural changes in the economy, the recent impact of a few large firms on the market proxy and the need to consider U.S. data;<sup>40</sup> and
3. CG noted that the current equity risk premium could be expected to be about 1% lower than the historical equity risk premium due to current lower trading costs.<sup>41</sup>

<sup>32</sup> Exhibit 016-11(a), Evidence of L.D. Booth, page 33

<sup>33</sup> Exhibit 017-05(a), Evidence of Kryzanowski and Roberts, Schedules, Schedule 4.3 and 4.5

<sup>34</sup> Exhibit 016-11(a), Evidence of L.D. Booth, Schedule E1 (Canadian Institute of Actuaries Data)

<sup>35</sup> Exhibit 012-01, EPCOR Transmission, Direct Evidence and Supplements of Robert E. Evans, Dec. 2002, Supplement C, page C-10

<sup>36</sup> Exhibit 009-02(b) Schedule 5 (Canadian Institute of Actuaries data)

<sup>37</sup> Exhibit 005-10-2, Table 4, page 27

<sup>38</sup> Exhibit 016-11(a), Evidence of L.D. Booth, Appendix E, Schedule E1 and Appendix F, Schedule F2

<sup>39</sup> Exhibit 016-11(a), Evidence of L.D. Booth, page 24

<sup>40</sup> ATCO Argument, pages 25 and 26

<sup>41</sup> CG Argument, page 31

In the Board's view, a reasonable approach is to consider the longer-term average historic Canadian equity risk premium and then adjust this upward or downward based on the Board's judgment and the Board's assessment of the evidence regarding the prospective outlook for the equity risk premium.

In the Board's view, in general, the present Canadian market already reflects the impact of U.S. data based on the current degree of North American market integration. Participants make market trade-offs in their decisions on how to participate in the various markets around the world. The present high degree of integration would not have been fully reflected historically, accordingly, the Board considers that the U.S. historical MRP should be considered as one of many factors in applying judgment to adjust the Canadian historic MRP. The Board notes Dr. Booth's evidence that U.S. MRPs need to be tax-adjusted and that therefore U.S. market returns are biased high for Canada, but still provide a ceiling for Canadian estimates.

The Board notes from [Table 3](#), that the range of the experts' recommended MRP estimates was from 4.5-6.5%, with a midpoint of 5.5%. The Board also notes from [Table 4](#) above that the historic arithmetic risk premium in Canada has been 4.7-5.5% for those periods ending in 2002 that provide 50 or more years of history. In the Board's view, the historic evidence, along with some recognition of the higher U.S. figures, supports the midpoint of the experts' estimates at 5.5%.

Considering all of the above, the Board finds that an MRP of 5.5% is appropriate.

The Board also notes that this midpoint of 5.5% is consistent with the MRP used by the Board in its most recent rate of return determinations.<sup>42</sup>

### **Beta**

The Board notes that there was general agreement that use of actual data from very recent years, to calculate beta, would under-estimate the prospective beta due to the technology-related market bubble and subsequent collapse, and that there was also general agreement that beta is a relative risk factor that requires judgment.

The Board notes from [Table 3](#) that the range of beta estimates recommended by the expert witnesses was from 0.45-0.65. Dr. Booth's estimate of beta of 0.45-0.55 was the lowest estimate in the range. The next lowest estimate was 0.50, proposed by Dr. Kryzanowski (sponsored by CG). The Board also notes from the argument of Calgary/CAPP that the beta of 0.55 recently used by the Board<sup>43</sup> was at the top of Dr. Booth's range, but "is well within normal estimation error".<sup>44</sup> The Board also notes that the high estimate of 0.65 was partially based on adjusted U.S. data and partially based on a relative risk calculation that utilized standard deviations and not the more usual regression analysis calculation.<sup>45</sup>

Based on the above, the Board finds that a reasonable estimate of beta, or the relative risk factor of utilities versus the overall equity market, is 0.55.

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<sup>42</sup> Includes Decisions 2003-63, 2003-71, 2003-72 and 2003-100

<sup>43</sup> Decisions 2003-63, 2003-71, 2003-72 and 2003-100

<sup>44</sup> Calgary/CAPP Argument, Section 4.2.3.2, page 15

<sup>45</sup> Exhibit 008-01, ATCO Pipelines 2003-2004 Application, Evidence of Kathleen McShane, pages 44-47 of 63



The Board also notes that this estimate of beta of 0.55 is consistent with the value that the Board has assigned to beta in its most recent rate of return determinations.<sup>46</sup>

### **Flotation Cost Allowance**

The Board notes that all parties, except the Companies and CG, recommended or were not opposed to a 0.50% allowance for flotation costs and financing flexibility.

The Board notes that CG and CAPP suggested that an alternative to an ongoing flotation allowance was to expense the costs of flotation. CG proposed that this expense could be amortized over 50 years. In the Board's view, there was limited support for changing its past approach to flotation costs.

The Board notes that the Companies argued that the flotation allowance should be increased to 0.75%, based on the increased capital markets volatility. However, the Board considers that there is merit in CG's argument that the apparent higher volatility in the markets was due to a rapid increase in listings by smaller and more risky firms and was not due to the utility sector.<sup>47</sup> The Board is therefore not convinced that a change is required to the 0.50% flotation cost allowance used in recent decisions.

Based on the above, the Board finds that continuation of a 0.50% allowance for flotation costs and financing flexibility is appropriate.

### **CAPM Conclusions**

Based on the above-determined risk-free rate of 5.68%, MRP of 5.50%, beta of 0.55, and allowance for flotation costs of 0.50%, the Board concludes that a reasonable CAPM estimate for 2004 is 9.20%.

The Board will now consider the other ROE methodologies suggested by the parties to determine if the results, obtained from the application of such methodologies, warrant an adjustment to the Board's CAPM estimate of ROE.

#### **4.2.4 Other Forms of the ERP Test**

Dr. Booth gave equal weight to CAPM and to a multi-factor ERP model that indicated that a utility's equity risk premium over the long-Canada rate was a function of both the MRP and of the term spread of long-Canada rates over shorter-term rates. The midpoint of the results of Dr. Booth's multi-factor ERP model was approximately 7.5%,<sup>48</sup> which indicated an ROE of approximately 8.0% after including an allowance for flotation costs of 0.50%.

Dr. Booth's multi-factor ERP model would directionally support a reduction from the midpoint of the Board's CAPM range. However, the Board will only place limited weight on the results of Dr. Booth's multi-factor model for the following reasons:

1. The model has a low R-squared statistic, indicating low reliability of the model;
2. Today's interest rates are at the bottom edge of the range experienced over the study period; and

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<sup>46</sup> Decisions 2003-63, 2003-71, 2003-72 and 2003-100

<sup>47</sup> CG Reply Argument, page 29

<sup>48</sup> Exhibit 016-11(a), Evidence of L. D. Booth, pages 25-29

3. The adjustments that Dr. Booth indicated were required in developing the model.<sup>49</sup>

Dr. Vilbert (sponsored by NGTL) used both a CAPM model and an ECAPM model. His ECAPM model included an adjustment factor to compensate for an alleged tendency of CAPM models to under-estimate required returns for lower risk companies. Dr. Vilbert's ECAPM model resulted in a recommendation for an 11% ROE on a 40% common equity ratio. Dr. Vilbert's ECAPM results would directionally support an increase from the midpoint of the Board's CAPM range.

The Board notes Calgary/CAPP's argument that applying CAPM using long-term interest rates (long-Canada bond yields) in determining the risk-free rate, as was done by all experts in this Proceeding, already corrects for the alleged under-estimation that ECAPM was designed to address.<sup>50</sup> Calgary/CAPP argued that the under estimation would only be present if the CAPM were applied using short-term interest rates, which none of the experts did in this Proceeding.

The Board finds the Calgary/CAPP position persuasive and considers that the use of long-term Canada bond yields largely adjusts for the tendency of CAPM, when based on short-term interest rates, to under estimate the required returns for lower risk companies. Therefore, the Board will only place limited weight on the results of the ECAPM model.

Ms. McShane (sponsored by AltaGas/ATCO) used a DCF-based ERP test that resulted in a utility risk premium of 4.9%.<sup>51</sup> The Board notes that this implies a total utility ROE of 11.15%, after adding her recommended risk-free rate and the flotation cost. Ms. McShane also provided a realized historic utility ERP, based on Canadian and U.S. utility returns, which indicated a utility risk premium of 4.75%.<sup>52</sup> The Board notes that this implies a utility ROE of 11.0%.

Dr. Neri applied two ERP tests in addition to the CAPM, based on U.S. electric utilities and on U.S. gas distribution utilities, which produced utility equity risk premiums of 5.14 and 5.53%,<sup>53</sup> respectively. The Board notes that this implies a total utility ROE of 11.79% and 12.18%, respectively, after adding Dr. Neri's risk-free rate recommendation of 6.15% and a flotation allowance of 0.50%.

The Board notes that these utility return results of Ms. McShane's and Dr. Neri's other ERP tests are higher than many estimates of the market required return.

Ms. McShane's and Dr. Neri's other ERP tests would directionally support an increase from the midpoint of the Board's CAPM range. However, the Board shares CG's<sup>54</sup> and CAPP's<sup>55</sup> concern that it is not reasonable for the prospective required return on low risk firms to be close to or above the prospective overall market return.

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<sup>49</sup> Exhibit 016-11(a), Evidence of L. D. Booth, page 26

<sup>50</sup> Calgary/CAPP Argument, page 12

<sup>51</sup> Exhibit 005-10-2, Kathleen McShane, page 33

<sup>52</sup> Ibid.

<sup>53</sup> Exhibit 009-02(b), Schedules 6&7

<sup>54</sup> CG Argument, page 49

<sup>55</sup> CAPP Argument, page 17

On balance, the Board concludes that the results of the ERP tests other than CAPM would generally support a 2004 ROE above the Board's CAPM estimate, but that for the reasons set out above only limited weight should be placed on the results of the ERP tests other than CAPM.

#### 4.2.5 Discounted Cash Flow Test

The Board notes from [Table 2](#) that the Applicants' standard-method DCF estimates for ROE ranged from 10.3-14.1%. The Board notes ATCO's argument that any upward bias in analyst growth estimates may be less prevalent for stable industries including utilities. Nevertheless, the Board considers that there is merit in the intervener arguments<sup>56</sup> that the analysts' earnings forecasts used in the development of the DCF estimates have been biased high, resulting in DCF estimates that overstate the required return. The record of the Proceeding reveals no evidence on an appropriate discount to apply to the DCF test results to appropriately adjust for an overstatement in the required returns. Accordingly, the Board finds reliance on the Applicant's DCF estimates problematic.

The Board notes that Dr. Booth's DCF approach<sup>57</sup> was not based on an assessment of analysts' earnings forecasts, but was based on an assessment of the growth of the overall economy. Dr. Booth considered that the market as a whole would grow at the same rate as the nominal GDP growth rate of about 6%, which would indicate a total investor market return of 8.5% after including average dividends of 2.5% (which included an estimated 0.5% to account for share repurchases as surrogate dividends). Dr. Booth indicated that this was a geometric market return estimate and therefore under estimated the average short-run growth rate, since the arithmetic rate exceeds the geometric rate. Dr. Booth further indicated that his DCF analysis confirmed that an 8.12% allowed ROE for a regulated utility was fair and reasonable. However, the Board notes that Dr. Booth did not quantify the impact of converting from a geometric rate to an arithmetic rate, did not quantify, in this case, the impact of utilities having less risk than the market average, and did not add an allowance for flotation costs.

As a result of the above noted concerns, the Board concludes that no weight should be placed on the results of the DCF tests presented in this Proceeding.

#### 4.2.6 Comparable Earnings Test

The Board notes that several Applicants indicated that the comparable investment test, envisioned in the court decisions referred to in Section 3 of this Decision, obligated the Board to place weight on the CE test.<sup>58</sup> However, in the Board's view, the CE test is not equivalent to the comparable investment test. The CE test measures **actual** earnings on **actual book value** of comparable companies, which, in the Board's view, does not measure the return "*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*"<sup>59</sup> (emphasis added) (unless the securities were currently trading at book value). The Board notes that Cargill<sup>60</sup> expressed a similar view.

<sup>56</sup> For example, Cargill Argument, page 23, and CG Argument, page 13

<sup>57</sup> Exhibit 016-11(a), Evidence of L.D. Booth, page 36

<sup>58</sup> ATCO Argument page 8, Companies Argument page 24

<sup>59</sup> NUL, 1929, at 192-193

<sup>60</sup> Cargill Argument, pages 6 and 7

The Board considers that the application of a market required return (i.e. required earnings on market value) to a book value rate base is appropriate in the context of regulated utilities.

The Board notes Ms. McShane's CE test result of "no less than 13%". The Board notes that this result is in excess of Ms. McShane's 11.75% estimate of the market return, excluding flotation allowance, incorporated in her CAPM result in [Table 3](#). The Board also notes Dr. Booth's evidence that at no time in the last fourteen years has the average ROE of Corporate Canada exceeded 12.0%, and only twice in the last thirteen years has the average ROE been in double digits.<sup>61</sup>

In the Board's view, based on Dr. Booth's evidence regarding the achieved ROEs of Corporate Canada, and her own CAPM estimate, Ms. McShane's CE test result of "no less than 13%" exceeds a reasonable forecast of the prospective market required return. In the Board's view, CE test results for low risk companies, that exceed the forecast required return on the overall market, raise serious conceptual or methodological concerns regarding the relevance of the CE test. The Board does not consider it reasonable for the prospective required return on low risk firms to exceed the prospective overall market required return. The Board notes Ms. McShane's evidence that lower risk firms have outperformed the market over certain historical periods. However, in the Board's view, to forecast this result would not be credible.

The Board also notes that, in this Proceeding, various implementation problems with the CE test were discussed. These included sample selection problems, accounting differences, market power concerns, and problems matching the current business cycle stage. The Board recognizes that all traditional ROE tests suffer from methodological difficulties.

The Board concludes that it should place no weight on the CE test because of the implementation problems of the CE test and the above-noted conceptual and methodological concerns with the CE test.

#### **4.2.7 Other Measures of Comparable Investment**

Although the Board will not place any weight on the CE test, the Board considers that there may be other measures of comparable investment that should be considered in the establishment of an appropriate ROE. In this section, the Board will address other such measures of comparable investment that were raised in the Proceeding.

#### **Return Awards for Other Canadian Utilities**

The Board acknowledges the potential for circularity when considering awards by other regulators. Nevertheless, the Board considers that awards by other Canadian regulators may provide some indication of the appropriate ROE for the Applicants.

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<sup>61</sup> Calgary/CAPP Argument, page 6

Dr. Evans provided, at the Board's request, a detailed compilation of ROE awards and other matters for Canadian utilities.<sup>62</sup> The following table is an excerpt from that compilation:

**Table 5. Awarded ROEs for Other Canadian Utilities**

	Date	Awarded ROE (%)
<b>British Columbia</b>		
Aquila Networks Canada (BC) Ltd.	November 2003	9.55
Pacific Northern Gas Ltd.	November 2003	9.90
Terasen Gas Inc.	November 2003	9.15
<b>Ontario</b>		
Enbridge Gas Distribution	November 2003	9.69
Union Gas Ltd.	Jan. 1999/July 2001	9.95
<b>Quebec</b>		
Gaz Metropolitan	September 2002	9.89
<b>Nova Scotia</b>		
Nova Scotia Power Inc.	October 2002	10.15
<b>Prince Edward Island</b>		
Maritime Electric	October 2001	11.00
<b>Newfoundland</b>		
Newfoundland Power Inc.	June 2003	9.75
<b>National Energy Board</b>	November 2003	9.56

Directionally, the evidence on recent awards for other Canadian utilities would support a 2004 ROE above the Board's CAPM estimate. However, the Board concludes that limited weight should be placed on this evidence due to the potential for circularity.

### **Return Awards for U.S. Utilities**

The Applicants generally took the view that it is appropriate to consider utility ROEs awarded by U.S. regulators, due to the similarity between Canadian and U.S. utilities and due to the high degree of integration of the capital markets of the two countries.

The Board notes the evidence of various Applicants that low risk gas distribution utilities in the U.S. have allowed returns in the 11% range on a 45% common equity component, and that prior to incentives, the base return for interstate electric transmission companies allowed by FERC is in excess of 12% on a 50% equity component.<sup>63</sup>

The Board also notes the submissions of various interveners that there are several differences between Canadian and U.S. regulation. The Board, in particular, notes CAPP's submission that U.S. pipelines operate under a regulatory regime that has exposed them to severe realized and potential risks. In this regard, the Board notes the evidence<sup>64</sup> of CAPP indicating low actual returns of a number of U.S. interstate pipelines.

<sup>62</sup> Exhibit 021-24

<sup>63</sup> ATCO Argument, pages 29-30

<sup>64</sup> Exhibit 015-11, Written Evidence of CAPP, pages 49-50

In the Board's view, the Applicants did not demonstrate that the regulatory regimes in the two countries are sufficiently comparable that the Board should place significant weight on the return awards for U.S. utilities. For example, the Board notes differences in legislation, public and regulatory policies, the higher prevalence of longer-term settlement arrangements, the federal/state jurisdictional divisions, the development of RTOs and other differences in the structure of regulated industrial sectors, and differences in national fiscal, tax and monetary policies. The Board notes AltaLink acknowledged that there are some differences in the Canadian and U.S. electric industry structures that may impact some of the higher return and equity component awards in the U.S.<sup>65</sup>

Furthermore, the Board notes the recent acquisitions, at premiums to book value, by U.S. companies of an interest in TransAlta Corporation's former distribution and transmission businesses. The Board considers these acquisitions, which are discussed further below, may be an indication that the regulated returns available in Alberta are not too low for U.S. firms, relative to investment opportunities in their home country given all relevant circumstances.

Directionally, the evidence on the awards available to U.S. utilities would support a 2004 ROE above the Board's CAPM estimate. However, the Board concludes that limited weight should be placed on this evidence due to the differences in the regulatory, fiscal, monetary, and tax regimes in the two countries.

#### **FERC Incentives for Transmission Facilities**

A number of the applicants suggested that if the Board did not reflect the incentive awards that FERC has in place for new electric transmission facilities, then capital might not be available for utility infrastructure in Alberta. These applicants argued that above-market ROEs would be in the public interest in order to ensure that sufficient capital is attracted for Alberta's infrastructure needs.

The Board is not persuaded that the existence of certain FERC-regulated transmission projects with allowed returns above the current market required rate of return would impair the ability of Alberta utilities to attract capital. In the Board's view, Alberta utilities do not compete for capital only with these projects, but rather with a broad universe of investment opportunities. Furthermore, if the higher allowed returns for these projects were material to the Canadian market required return, the Board considers that the impact of these higher allowed returns would already be reflected in the Canadian market required return.

Furthermore, the Board notes that the FERC incentives are intended to encourage RTO participation, independent ownership of transmission facilities, and investment in new facilities found appropriate pursuant to an RTO process. The Board notes that the objectives of encouraging RTO participation and encouraging independent ownership of transmission facilities are not applicable in Alberta. Similarly, the objective of encouraging investment in new independent transmission facilities into areas presently serviced by vertically integrated utilities is also not applicable in Alberta. Furthermore, the Board notes that both AltaLink and ATCO expressed continued strong interest in infrastructure development in Alberta.

The Board considers that there is no persuasive evidence in this Proceeding that demonstrates that above-market awarded returns are required to attract capital, and the Board notes that there

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<sup>65</sup> AltaLink Specific Reply Argument, third page

is no evidence of any Alberta TFO having any difficulty in attracting capital to date. The Board considers that to award such returns in the absence of need would unnecessarily and inappropriately result in additional costs to consumers.

Furthermore, the Board considers that if it were satisfied in some future application that it was appropriate to award incentive returns to attract capital in connection with the construction of certain new electric transmission facilities in Alberta, such returns would not be appropriate on existing facilities and may not be necessary in respect of all new infrastructure developments.

The Board is not persuaded that there is any requirement at this time to offer above-market ROEs or other incentives to attract capital for the construction of new electric transmission facilities in Alberta. The Board will not put any weight on the FERC incentives for transmission facilities, for the purposes of determining the generic ROE.

### **Alliance and Maritime and North East Pipelines (M&NP)**

NGTL's view was that Alliance and M&NP are particularly relevant comparisons for NGTL. NGTL noted that both Alliance and M&NP are regulated and ship into markets served by gas that moves through NGTL and TransCanada Pipelines Ltd. (TCPL)'s Mainline. NGTL submitted that Alliance and M&NP, as the most recent large greenfield pipelines, show what returns are necessary to entice investment in regulated natural gas pipelines. Alliance has an ROE of 11.25% on 30% deemed equity and M&NP has an ROE of 13% on 25% deemed equity.

In regards to the regulated returns of Alliance and M&NP, the Board agrees with CAPP that these returns are not directly relevant, due to different circumstances (such as the level of ROE being locked in for a long period of time) and because they date back to a period of higher interest rates and returns. In this respect, the Board notes CAPP's argument that Alliance takes risks that NGTL does not, including some volume risk on an exception basis, long-term shipper contract default risk, and long-term interest rate risk,<sup>66</sup> and that the M&NP was built for a new untested basin with few pools having been delineated. In addition, the Board notes that the deemed equity ratios for Alliance and M&NP are lower than any Board-approved equity ratio, which would directionally reduce the impact on customer rates of a higher ROE.

Although, directionally, the absolute level of return for Alliance and M&NP would support a 2004 ROE above the Board's CAPM estimate, the Board concludes, based on the above analysis, that it should place limited weight on the Alliance and M&NP returns.

### **Market-to-Book Ratios and Acquisition Premiums**

The Board notes the evidence, including that of AltaGas<sup>67</sup> and Calgary/CAPP<sup>68</sup> that the equity of utilities that earn a large portion of their earnings based on regulated formulas in other Canadian jurisdictions tends to trade at market-to-book ratios well above 1.0, albeit at premiums less than the average market premium.

The Board also notes that there have been a number of acquisitions of Alberta utilities in recent years, at prices that significantly exceeded book value. For example, in 2000, Aquila acquired TransAlta Corporation's distribution and retail businesses at a total price of 1.5 times book value. Book value was forecast to be \$472 million at time of close, resulting in a forecast premium of

<sup>66</sup> Exhibit 015-11 Written Evidence of CAPP, page 36 and 49

<sup>67</sup> AltaGas Argument, page 24

<sup>68</sup> Exhibit 016-11(b), Written Evidence of J.D. McCormick, page 5

\$238 million.<sup>69</sup> Aquila subsequently sold TransAlta's former retail business to EPCOR Energy Services (Alberta) Inc. for \$110 million, including a premium of \$99 million.<sup>70</sup>

As well, in 2004, Fortis purchased Aquila for a premium of \$215 million above the book value of \$601 million.<sup>71</sup>

Similarly, with respect to the AltaLink acquisition of TransAlta Corporation's transmission assets, the Board notes Mr. McCormick's<sup>72</sup> evidence that a premium of \$200 million was paid to acquire a rate base of approximately \$644 million.

The Board agrees with the Applicants that there are a number of factors impacting market-to-book ratios of utility holding companies and that one has to be cautious making inferences regarding the regulated utilities. The Board also agrees that there may be strategic factors affecting the price that is paid to acquire a utility.

For example, NGTL submitted that its parent did not acquire a further interest in the Foothills pipeline, paying 1.6 times book value, for the opportunity to earn a return at the NEB formula rate; rather, the investment was made in an effort to increase the probability that TCPL will participate in a Northern pipeline project. The Board also recognizes that, in some cases, a premium might be paid for regulated assets in anticipation of significant future growth in rate base, to achieve geographic diversification or to obtain a foothold in a new market. However, parties are also aware of the constraints placed on regulated utilities with respect to affiliate transactions, particularly those with unregulated affiliates.

In the absence of such strategic factors, the Board would not expect a prudent investor to pay a significant premium unless the currently awarded returns are higher than that required by the market. The Board acknowledges the views of some parties that payment of a premium over book value for a regulated utility indicates that the recent ROE awards may have been higher than required by the market. The Board is not aware of the strategic factors that may have affected the price paid to acquire Alberta utilities in recent years. Nevertheless, the experience regarding the market-to-book values of utilities and the experience regarding the acquisition of Alberta utilities in recent years gives the Board some comfort that its recent ROE awards have not been too low.

Further in this regard, the Board notes AltaLink's testimony, in response to examination by the Chairman,<sup>73</sup> that AltaLink's decision to purchase TransAlta's transmission business considered Board awards for transmission entities of 9.75% ROE on a capital structure including 35% equity.

Directionally, the Board concludes that the experience regarding the market-to-book ratios of utilities and the experience regarding the acquisition of Alberta utilities in recent years is relevant and supports continuation of an ROE at or below the Board's CAPM estimate.

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<sup>69</sup> Decision 2000-41, page 3

<sup>70</sup> Decision 2000-71, page 3

<sup>71</sup> Decision 2004-035, page 18

<sup>72</sup> Exhibit 016-11(b) Evidence of J.D. McCormick, pages 39-40

<sup>73</sup> Transcript, Volume 15, pages 2004-2006



### **Income Trusts**

The Board notes the significant disagreement among parties with respect to return expectations of investors in Income Trusts. The Board notes that Mr. McCormick relied primarily on a sample of only five Income Trusts and that the validity of his sample selection was the subject of substantial debate.

In the Board's view, the theoretical return, indicated by Mr. McCormick, based on ROE does not address actual investor expectations on investment or actual historic returns on investment of Income Trust investors. For example, the Board notes that Income Trust prices often rose despite the fact that part of the distributions represented return of capital.

The Board generally agrees with the views of the Applicants that Income Trusts may be overvalued<sup>74</sup> due to investors' misperceptions and may be too new to be a reliable indication of required market returns. The Board also does not consider that there is any evidence that the allegedly lower return requirements for Income Trusts are achievable in a corporate structure. The Board notes that no party advocated that the Applicants be required to reconstitute as Income Trusts. The Board also notes that some Income Trusts have much higher equity ratios than the Applicants, which would directionally offset the impact of a lower ROE on customer rates.<sup>75</sup>

Nonetheless, the Board notes that Income Trusts are attracting a substantial amount of new capital.

Directionally, the Board considers that the experience with Income Trusts would support an ROE at or below the Board's CAPM estimate. However, for the reasons cited above, the Board concludes that limited weight should be placed on this experience.

### **Pension Return Expectations**

Intervenors generally took the position that TCPL's forecast pension return on Canadian equity investments of 9.5% was an indicator of the Canadian market return expected by TCPL. NGTL argued that the forecast of 9.5% was prepared by its actuaries and was not comparable to an investment hurdle rate. NGTL further argued that the forecast of 9.5% was a geometric estimate rather than an arithmetic estimate.

The Board acknowledges that forecast pension returns on equity investments may be conservative by their nature, but the Board nevertheless considers that forecast pension returns on equity investment are a valid indicator, albeit potentially conservative, of the forecaster's current market equity return expectation. However, the Board agrees with NGTL that the forecast pension return is akin to a geometric average and would therefore understate the forecaster's short-term expectation for the market return. Directionally offsetting this impact, the Board would expect the required return for utilities to be below the required overall equity market return.

On balance, the Board concludes that the evidence on forecast pension returns would support a modest increase from the Board's CAPM estimate.

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<sup>74</sup> NGTL Argument, page 105-107; ATCO Argument, page 43

<sup>75</sup> NGTL Argument, page 107

### **Other Investment Alternatives Available To Utility Shareholders**

The Board notes NGTL's evidence that its parent, TCPL, has other investment alternatives, such as unregulated power generation projects, that earn a return higher than the return allowed for NGTL. NGTL also argued that TCPL has the option of making investments at higher returns in the U.S. and repatriating the profits to Canadians via the dividend tax credit. NGTL submitted that it requires a higher return in order to compete with these other investment opportunities of TCPL.

The Board agrees with the interveners<sup>76</sup> that NGTL's evidence regarding earnings on power generation projects were merely forecasts of earnings, and represented a limited and select sample. The Board also notes that NGTL did not supply any evidence that evaluated historical returns from other investments versus returns from its Canadian utility investments, which is one relevant factor to be considered when making prospective investment decisions.

The Board concludes that there is no basis on which to place any weight, other than already reflected in earlier tests, on other specific investment opportunities potentially available to utility investors or on stated expectations of return from such opportunities.

#### **4.2.8 2004 ROE**

The Board found above that a reasonable CAPM estimate for 2004 is 9.20%. The Board considers that it is appropriate to assess the results of other tests to determine if the 2004 ROE should be above or below the CAPM estimate.

The Board found above that the following evidence would generally support a 2004 ROE at or below the CAPM estimate:

1. Market-to-Book Ratios and Acquisition Premiums
2. Income Trusts

Similarly, the Board found above that the following evidence would generally support a 2004 ROE at or above the CAPM estimate:

1. ERP Tests Other Than CAPM
2. Return Awards for Other Canadian Utilities
3. Return Awards for U.S. Utilities
4. Alliance and M&NP
5. Pension Return Expectations

As discussed above, the Board did not put any weight on the following evidence in determining whether the 2004 ROE should be above or below the CAPM estimate:

1. Discounted Cash Flow Test
2. Comparable Earnings Test
3. FERC Incentives for Transmission Facilities
4. Other Investment Alternatives Available to Utility Shareholders

<sup>76</sup> Cargill Argument page 22 and CAPP Argument page 23

In the next section of this Decision, the Board establishes an adjustment mechanism that includes an adjustment factor of less than 100% of the change in the long-Canada yield, which in the Board's view also supports a 2004 ROE above the CAPM estimate since the allowed ROE will not reflect a 100% adjustment factor, which is implicitly suggested by CAPM, and since a formulaic approach effectively creates a longer test period with respect to ROE.

In consideration of the impact of the above factors, it is the judgment of the Board that it would be appropriate to establish the 2004 ROE at a level that is 40 basis points above the Board's CAPM estimate. Therefore, the Board concludes the generic ROE for 2004 should be set at 9.60%.

### 4.3 Annual Adjustment Mechanism

As outlined earlier in this Decision, the Board will now address the potential use of an adjustment mechanism for ROE.

The following table summarizes the positions of the parties:

**Table 6. Annual Adjustment Mechanism Recommendation by Parties**

Party	Annual Adjustment Mechanism Recommendation
AltaGas/ATCO	50% of long-Canada bond yield change
Companies	75% of long-Canada bond yield change
ENMAX	100% of long-Canada bond yield change plus 100% of utility bond spread change
NGTL	Link to changes in Corporate bond yields
Calgary/CAPP	75% of long-Canada bond yield change
Cargill	75% of long-Canada bond yield change (80% or 100% also acceptable)
CG	75% of long-Canada bond yield change plus 50% of market dividend yield change
IPCAA	75% of long-Canada bond yield change

The Board notes that most parties favored an adjustment formula with the ROE changing by 75% of the change in the forecast long-Canada bond yield, provided that the Board accepted their starting positions on ROE.

The Board also notes Dr. Evan's evidence that a change based on 75% of the change in the long-Canada bond yield is driven by the differential tax rates between bonds and equity.<sup>77</sup>

The Board notes ATCO's and ENMAX's concern that it would be unfair to set an initial ROE based strictly on a CAPM analysis and to then allow only 75% of any increase in the long-Canada bond yield. In such a situation, ATCO and ENMAX favoured a 100% adjustment. The Board notes that in the previous section of this Decision, the Board established a generic ROE for 2004 of 9.60%, a level that is 40 basis points above the Board's CAPM estimate of 9.20%.

The Board does not consider that ENMAX's proposal to adjust the ROE by the sum of the change in the long-Canada bond yield and the change in the utility bond spread to be appropriate due to the difficulty of determining and tracking bond yields for a representative sample of corporate bonds.

<sup>77</sup> Companies Argument, page 89

**Application by Enbridge Gas New Brunswick Inc.  
for Approval of its Rates and Tariffs  
June 23, 2000**



**DECISION**

**IN THE MATTER OF an Application by  
Enbridge Gas New Brunswick Inc. for Approval of  
its Rates and Tariffs**

**June 23, 2000**

**NEW BRUNSWICK**

**BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

Inc. for this risk. Accordingly, the Board orders that the cost of debt of EGNB be limited to the actual borrowing rate of the parent company plus 1%. This rate is to apply to both long-term and short-term borrowing. In addition, the Board orders EGNB to record all the information necessary regarding the borrowing cost of its parent company in support of its interest charges to EGNB.

### **RETURN ON EQUITY**

The return on equity of a utility is the rate of return allowed to be earned on the capital invested by shareholders in the enterprise, expressed as a percentage of such capital. The percentage is normally calculated by reference to the cost of “risk free” capital in the money markets, to which a premium is added, based upon the perceived risks of the particular enterprise. The latter component is known as the “risk premium”.

The “Essential Elements” stated that the return on equity will be 13% during the development period. Ms. McShane expressed her opinion that the rate of return of 13% was reasonable and supported her opinion with an analysis of the forecast of long Canada yields and the required risk premium for Enbridge Gas New Brunswick.

Mr. Kumar gave no opinion on the appropriate return on equity. No intervenors objected to the rate of 13% established in the company’s application and no proposed alternative rate was developed.

The Board finds that the rate of 13% is to be the return on equity allowed during the development period. However, the Board orders EGNB, in the event of actual earnings exceeding 13% during the development period, to apply all such excess as a lump sum payment in the reduction of the deferral account.

**Applications by Union Gas Limited and Enbridge Gas Distribution Inc.  
for a Review of the Board's Guidelines  
for Establishing Their Respective Return on Equity  
Decision and Order  
January 16, 2004**

Ontario Energy Board    Commission de l'Énergie  
de l'Ontario



**RP-2002-0158**

IN THE MATTER OF APPLICATIONS BY

**UNION GAS LIMITED**

AND

**ENBRIDGE GAS DISTRIBUTION INC.**

FOR

**A REVIEW OF THE BOARD'S GUIDELINES FOR  
ESTABLISHING THEIR RESPECTIVE RETURN ON  
EQUITY**

**DECISION AND ORDER**

2004 January 16



## 4 BOARD FINDINGS

113

The Board's ROE Guidelines suggest that there are two reasons which would justify a review of the formula. The first justification would be significant changes in market conditions. The second justification would be significant changes in the utility risk. The Applicants have based their request for a review on their assertion that there have been significant changes in the capital markets. There is no claim that the utility risk per se has increased. The Board recognizes that the ROE Guidelines are not binding and that it is always open to a party to propose a new approach. The Applicants have made such a proposal and the Board has considered on its merits.

114

The first issue for the Board is whether the adjustment mechanism contained in the current ROE Guidelines produces a prospective return on common equity that continues to be appropriate. The formula in the current guidelines produces an ROE of 9.71% for Enbridge and 9.86% for Union at a long-term Government of Canada bond yield of 6.00%. This reflects a risk premium of 371 basis points for Enbridge and 386 basis points for Union. At a long-term Government of Canada bond yield of 6.00%, the Applicants are asking the Board to set a new benchmark ROE of 11.50% for Enbridge and 11.65% for Union. This proposal reflects an increase in the risk premium to 550 basis points for Enbridge and 565 basis points for Union. They are asking the Board to move from sole reliance on the equity risk premium (ERP) test, as set out in the ROE Guidelines, to weighted reliance on three tests described in Ms. McShane's evidence: the ERP test (37.5%), the discounted cash flow (DCF) test (37.5%) and the comparable earnings (CE) test (25%).

115

The second issue for the Board is the Applicants request, based on Ms. McShane's evidence, for a change to the annual adjustment formula, so that in each succeeding year, the ROE is adjusted by 50% of the change in the forecast yield for long-term Government of Canada bonds, rather than the 75% required by the ROE Guidelines. However, this request was contingent upon the outcome of the first issue.

116

The third issue for the Board is the request by the Applicants, based on Ms. McShane's evidence, that the factor representing the yield spread between the 10 and 30 year Government of Canada bonds be fixed, rather than being calculated annually. Dr. Cannon makes the same suggestion, although he recommends a lower spread than Ms. McShane.

117

First, we will deal with the primary issue of whether a new benchmark ROE should be established for EGDI and Union.

118

In approving or fixing rates, the Board derives its jurisdiction from section 36 of the Act. Pursuant to that section, the Applicants can only charge rates for the distribution of gas with the approval of the Board. The burden of proof to demonstrate that the rates applied for are just and reasonable lies with the Applicants. The setting of just and reasonable rates involves the balancing of the interests of the Applicants, on the one hand, and the ratepayers, on the other hand. Rates will be just and reasonable when the ratepayers are paying a fair price for the distribution services that they receive and the Applicants have an opportunity to earn a fair return on their invested capital. Allowance for

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a prospective fair return on common equity is therefore a component of establishing just and reasonable rates.

Section 36 (3) of the Act provides that the Board can adopt any method or technique for the setting of rates that it deems appropriate. The method to be adopted is at the Board's discretion, which the Applicants, the expert witnesses and other parties acknowledge. Currently, for the purpose of establishing the ROE for a utility, the Board uses a formula based approach, as set out in the ROE Guidelines, based on the ERP test. The institution of this formula and its application dates back to 1997. None of the parties have proposed that the Board should move away from a formula based approach. We are of the view that it is appropriate to continue with a formula based approach because it provides a significant degree of predictability and is compatible with both cost of service and performance-based regulation.

120

A great deal was made in the hearing by Ms. McShane and the Applicants about comparisons with American utilities and returns awarded by other Canadian jurisdictions. The Applicants argue that the returns of American utilities are higher and that this supports the need for higher returns for the Applicants. They also cite decisions by certain Canadian regulators in support of higher returns. Yet, they also argue that the Board should not be influenced by the unfavourable decisions for recalibrating the existing formula by certain other Canadian regulators, on the basis that this Board should lead rather than follow. Also, they state that the Board must consider the applications on their own merits.

121

Discussions of ROE decisions from other jurisdictions invariably come into the evidence and arguments of parties. We continue to view such evidence as informative. However, we do not believe that decisions in other jurisdictions are determinative of what ought to be a prospective fair ROE for Ontario utilities. There are many reasons why ROE may differ from one jurisdiction to another in North America. These may include differences in legislation, timing, tax laws, accounting practices, risk considerations arising from different capital structures and from regulatory practices which may or may not shield the utility from business or weather risks, and other regulatory considerations unique to each jurisdiction, including varying reliance on the common tests for determining a fair ROE. There was no evidence that would allow the Board to make a meaningful comparison of these factors, including the relative riskiness of Canadian and American utilities, in order to understand the difference in ROE between American and Canadian utilities. The bare fact that American utilities might earn a higher ROE than Canadian utilities, as suggested by Ms. McShane and argued by the Applicants, is an inadequate basis upon which to determine whether the ROE for the Applicants should be increased to a level similar to the ROE for American utilities. Similarly, the fact that some Canadian regulators may have awarded higher or lower returns than the Ontario Energy Board, while informative, is not determinative for largely the same reasons.

122

Ms. McShane suggested that the difference in ROE between American and Canadian utilities was a factor that could create a disadvantage for Canadian utilities and their shareholders. However, we find no evidence to suggest that such a disadvantage currently exists or is likely. Mr. Case suggests that Union, for example, must now compete for equity capital with the other global subsidiaries of Duke Energy, Union's parent; if Union cannot offer a competitive return with the other units, capital might be more difficult to obtain from the parent company. There was no evidence before the Board to suggest that the Applicants are experiencing any difficulty in raising equity capital from or through their respective parents.

123

124  
A long standing regulatory principle espoused by the Ontario Energy Board, and by other regulators in North America, is the stand-alone principle. Applying this principle, the issue is what ought to be a prospective fair return on investment for a utility on a stand-alone basis, and not how a prospective return may compare or compete with other business units of the parent company. Should it be the case that the Ontario gas utilities are unable to attract equity capital by virtue of competition at the parent company level, whether the parent company is foreign or domestic, this would be of great concern to the Board.

125  
There was no evidence before the Board to suggest that Canadian utilities in general were experiencing difficulty in raising capital, or doing so at unreasonable terms. Mr. Case mentioned that BC Gas had difficulty raising equity; the equity issue "sat on the shelf" until the dealers were willing to discount it. Dr. Booth countered this point by explaining that the reason that the equity issue sat on the shelf was due to the fact that there was a bidding war amongst investment dealers due to a shortage of such deals at that time. The winning dealer paid a premium for the equity issue in order to secure the underwriting fees. Dr. Booth suggested that this example was in fact a demonstration of how easily a utility could raise capital.

126  
Mr. Case pointed to the recent sale of a Canadian pipeline utility by Aquila Inc. as an example of an investor unwilling to invest in Canada. However, the evidence revealed that Aquila was able to sell its pipeline utility to Fortis Inc. at a considerable premium, which would suggest that there are investors willing to invest in Canadian utilities. There was no evidence that Aquila Inc. sold its utility because of concern of the ROE earned by that utility. In fact, the evidence reveals that utility ownership transfers in recent history have taken place at above book value. While there may be many reasons that a company may be willing to pay more than book value for utility assets, there was no evidence to suggest that investors are deterred from investing in Canadian utilities because of inadequate prospective returns.

127  
We found no evidence of the Applicants being in financial hardship as a result of the authorized ROE. The Applicants confirmed that they continue to be responsible for raising their own debt capital. There was no evidence, for example, that the allowed ROE has resulted in inadequate financial ratios to preclude raising debt capital on reasonable terms. Similarly, there was no evidence before the Board to suggest that credit ratings of the Applicants were deteriorating. The evidence is that the Applicants enjoy favourable credit ratings. In fact, Union's credit rating is more favourable than its parent company.

128  
Mr. Case made references to changes in the business risk faced by the Applicants, but that issue was not before the Board. The Applicants made their request for a change in ROE based on the capital markets and not on any financial or business risk that they were facing. Ms. McShane confirmed in responding to questions that business and other risks covered by the equity component of capital structure were not matters at issue in this hearing. The Applicants did not dispute this testimony.

129  
Having found no evidence of returns being inadequate so as to jeopardize the financial and operational aspects of Enbridge and Union, the issue then is whether the rate of return resulting from the equity risk premium test under the current ROE Guide lines is appropriate.

130  
Three tests, and their variants, were employed or critiqued by the experts. All three witnesses had varying views with respect to the appropriateness of relying on the ERP test, the DCF test and the CE test. This was a large contributor to the differences between their recommendations. The other large contributor to the difference was the results arrived at by employing the same tests. The evidence of Ms. McShane, Dr. Booth and Dr. Cannon makes it clear that a great deal of judgment is involved in determining what is an appropriate ROE for a utility. Those three witnesses, along with Mr. Case, were looking at the same capital markets but came up with significantly different recommendations to the Board. However, Dr. Booth and Dr. Cannon also conceded that the current ROE Guidelines were still generally appropriate, despite their recommendations for a lower benchmark ROE. Ms. McShane was more categorical in her view that the ROE Guidelines were no longer producing a fair ROE and that a new benchmark ROE and adjustment formula were needed.

131  
On the basis of the evidence adduced in this proceeding, we find that the reservations the Board expressed in the compendium to the current ROE Guidelines about the CE and DCF approaches and the Board's decision not to employ these tests remain valid. With respect to the CE test, we continue to be concerned with the problems associated with the assembling of an acceptable list of comparable companies against which to assess the regulated utility, as well as the selection of a suitable time period from which to draw historical evidence. We note that the subjectivity involved in the selection of an appropriate sample of comparators and the selection of the time period were the primary factors in arriving at an ROE difference of 300 basis points between Ms. McShane and Dr. Cannon. We also reiterate our concern with this test's heavy reliance on past performance as an indicator of future performance.

132  
With respect to the DCF test, we note the sensitivity of the results to assumptions, including growth estimates. We note that as a result of different assumptions, Ms. McShane's ROE result from the DCF test is over 200 basis points higher than the results obtained by Dr. Booth and Dr. Cannon. Further, in the context of the specific applications before us, we remain uncomfortable with the results of the DCF test given that the shares of the Applicants are no longer traded on the open market.

133  
As a result of the above, we reiterate the Board's conclusions reached when it developed the existing ROE Guidelines that the results from the CE and DCF tests should be given little or no weight for purposes of these applications.

134  
We do not accept the suggestions by certain parties to use the approach of averaging the recommendations or to embark on tests that do not have theoretical foundation. Therefore for the purposes of this proceeding we will rely primarily on the results of the ERP test. Other than Mr. Case, all expert witnesses used this test.

135  
There are four basic components to this test: a determination of the risk-free rate; a determination of the equity risk premium for the market as a whole; an adjustment (beta) to reflect the lower risk of utilities; and an allowance for financial flexibility or "cushion". Supplemental analysis to the basic ERP test was performed by Ms. McShane and Drs. Booth and Berkowitz.

136  
No party has disputed the use of the long-term Government of Canada bond yield as the basis of the risk free rate, or the basis for its forecast as contained in the current ROE guidelines other than the

suggestion to fix the spread between the 10 and 30 year bond yields. Also, there was no dispute about the 50 basis points cushion. The disputes are around the determination of the market risk premium and the risk adjustment to reflect the lower risk for utilities.

Ms. McShane calculates a market risk premium of between 600 and 650 basis points. Dr. Booth calculates the premium at about 450 basis points and Dr. Cannon at about 350 basis points. The recommendations of a benchmark return under the basic ERP test of about 400 basis points for Ms. McShane, about 200 basis points for Dr. Booth, and about 160 basis points for Dr. Cannon reflect their choice of a relative risk adjustment of 0.60-0.65, 0.45-0.55, and 0.45, respectively. Adding the 50 basis points of cushion, the recommended benchmark equity risk premium under the basic test for Ms. McShane is 450 basis points, for Dr. Booth 250 basis, and for Dr. Cannon 210 basis points.

On the basis of the record adduced in this proceeding, we are of the view that Dr. Cannon's result is too low and Ms. McShane's too high. We find that the record reasonably supports a risk premium for the market as a whole between 500 and 550 basis points. We note from the evidence that the Alberta Energy and Utilities Board which recently reviewed similar data concluded that the market premium is 525 basis points. This is the mid-point of our 500 to 550 range. Using this mid-point figure, and without any modifications to Ms. McShane's recommended risk adjustment, one would obtain an overall equity risk premium of about 375 basis points, inclusive of the 50 basis points cushion. These equity risk premiums compare with 371 basis points for Enbridge and 386 basis points for Union under the current ROE Guidelines. Ms. McShane's recommended risk adjustment is higher than the other experts. A lower risk adjustment than that recommended by Ms. McShane would result in the equity risk premium under the current formula being favourable to the Applicants.

Ms. McShane used two other tests under the risk premium method, both utilizing utility data only. The first was the DCF based equity risk premium test, which produced an equity risk premium of 460 to 470 basis points. For the reasons outlined in the discussion of the DCF approach above, and our observation that the results indicate a much higher equity risk premium than the basic test produces, we place little or no weight on these results.

The second is a historic test, using data from both Canadian and American utilities. This test produced an equity risk premium of 475 to 500 basis points. We similarly place little or no weight on these results. We are not comfortable with the circularity that is inherent using regulated utility data, and the inclusion of American utilities which may bias the results without a thorough understanding of the justification for the higher returns of these utilities.

We conclude that not only does the equity risk premium formula approach not lead to perverse results, but that the results it currently provides continue to represent fair and reasonable returns. If we had to set a new benchmark rate of return based on the ERP evidence in this proceeding, this rate would not be materially different from that produced by applying the current formula.

Therefore, with respect to the first and primary issue of whether a new benchmark ROE should be established for EGDI and Union, we find that the current ROE Guidelines methodology continues to produce appropriate prospective results. We have not found any demonstrated need to set a new benchmark ROE.

Given this finding, the second issue, the Applicants' request for the annual ROE adjustment to be decreased to 0.50 from 0.75 of the change in the forecast yield for long-term Government of Canada bonds, is moot. 143

As for the third issue, the suggestion that the factor representing the yield spread between the 10 and 30 Government of Canada bonds be fixed rather than being calculated annually, the Board does not consider this to be of sufficient consequence, by itself, to justify a change to the existing guidelines. 144

Accordingly, based on the foregoing findings, the Board orders that the applications are dismissed. 145

In making this determination, the Board also considered the proposal put forward by Pollution Probe to increase ROE as an incentive to promote cost effective energy conservation and efficiency. The Board notes that the Applicants currently have demand side management programs in place that have already been ruled upon. This proceeding is focussed on whether conditions in the capital markets warrant a change to the Board's formula based approach to setting the ROE for the Applicants. The Board also notes that Pollution Probe and the Applicants are participating in a broad Board initiative that is examining energy conservation and efficiency. 146

The Board will issue a separate decision on cost awards. 147

**DATED** at Toronto January 16, 2004 148

On behalf of the Hearing Panel

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Paul Vlahos  
Presiding Member

**FortisBC Inc.  
2005 Revenue Requirements Application  
Decision  
May 31, 2005.**



**IN THE MATTER OF**

**FORTISBC INC.**

**2005 REVENUE REQUIREMENTS APPLICATION  
2005-2024 SYSTEM DEVELOPMENT PLAN  
2005 RESOURCE PLAN**

**DECISION**

**MAY 31, 2005**

**Before:**

**L.F. Kelsey, Commissioner and Panel Chair  
P.G. Bradley, Commissioner**



purchases from TeckCominco (“Cominco”). In 2004 these purchases were made in advance of need through the purchase of blocks of capacity from Cominco and through the purchase of a call option from Avista Energy (Exhibit B-1, Tab 7, pp. 10-11). The 2005 forecast includes market purchases and Cominco block purchases for January and February (actual) and November and December (estimated). The estimated amount of block purchases from Cominco is for 25MW in November and 100MW in December at estimated prices of \$65.20/MW and \$65.40/MW, respectively. Spot Market purchases for capacity (with a small amount of energy) are purchased year round depending on whether spot market prices are better than under BC Hydro Rate Schedule 3808. However, in the year 2005 for the months of January and February, and November and December, when FortisBC may be forced to purchase from the market, the forecast prices are 113 mills/KWh (11.3 cents/kWh). These prices are based on the Avista Energy Report and adjusted for the most valuable hours in the block (Exhibit B-1, Tab 7, p. 12). FortisBC provided an example of how this calculation is made in Appendix 1 to Exhibit B-21.

In past years FortisBC forecasted that its shortfall would be made up by market purchases because it does not have a firm contract with Cominco. However, the company typically was able to enter contracts late in the year at below market prices. The resulting difference was shared 50-50 between the company and its customers. This arrangement has been criticized because it appeared that the block purchases, although not firm, were predictable.

For this application FortisBC is proposing that the block purchases for November and December be taken out of the incentive mechanism and be treated as flow-through expense (Exhibit B1, Tab7, p 11).

No intervenor expressed objections to the Power Purchase forecast.

### Commission Panel Determinations

**The Commission Panel approves the forecast Power Purchases expense of \$71,010,000, as revised by Exhibit B-19. Approval of the Power Purchase expense mechanism is addressed in this Decision in Section 2.4: 2005 Incentive Sharing Mechanisms.**

## **2.2 Common Equity Component and Return on Common Equity**

FortisBC applies to the Commission for approval of a cost of capital for rate making purposes that reflects a common equity ratio of 40 percent of total capitalization and a return on equity of 75 basis points above that set by the Commission for a benchmark low-risk utility.

In support of this application, FortisBC filed expert evidence titled *Opinion on Capital Structure and Equity Risk Premium for FortisBC*, prepared by Kathleen C. McShane (“Ms. McShane”) of Foster Associates Inc., an economic consulting firm (Exhibit B-1, Tab 5). Ms. McShane concluded that a 40 percent common equity ratio, representative of FortisBC’s actual capital structure, is reasonable but should be viewed as the minimum necessary to provide adequate financing flexibility. Ms. McShane recommends that FortisBC be allowed an incremental risk premium of 50 to 100 basis points (a mid-point of 75 basis points) relative to that applicable to a low risk benchmark utility.

BCOAPO filed expert evidence titled *Business Risk, Capital Structure and ROE for FortisBC*, prepared by Dr. Laurence D. Booth (“Dr. Booth”), a professor of finance in the Rotman School of Management at the University of Toronto (Exhibit C5-5). Dr. Booth recommends that the current 40 percent common equity ratio be maintained, but that the current FortisBC incremental risk premium of 40 basis points should be reduced to zero rather than increased to 75 basis points.

The following sections summarize the evidence and submissions on these issues, and the Commission’s determinations in this regard.

#### 2.2.1 Direct Evidence of Ms. McShane

Ms. McShane’s approach to assessing the appropriate capital structure and return on equity (“ROE”) for FortisBC was based on: 1) evaluating the reasonableness of the actual capital structure that has been maintained by FortisBC in terms of its compatibility with the business risks of the utility; and 2) accepting the Commission’s ROE for a benchmark low risk utility as a point of departure for estimating the equity risk premium for FortisBC at the proposed capital structure (Exhibit B-1, Tab 5, p. 3).

Ms. McShane’s evidence is premised on the stand-alone principle and an assessment of the market, supply and regulatory business risks and financial risks faced by of FortisBC. In regard to the stand-alone principle, Ms. McShane comments that there is no reason that FortisBC’s capital structure or the fair return on equity should change simply because the identity of the shareholder has changed, but should continue to be premised on the risks faced by FortisBC. Ms. McShane notes that each of the Fortis utilities is financed on a stand-alone basis, so FortisBC’s credit will be assessed on its own business risks and ability to generate adequate cash flows (Exhibit B-1, Tab 5, pp. 4-5).

## Business Risk

Ms. McShane assesses FortisBC's business risks while noting the following factors:

- FortisBC is a relatively small utility serving a generally rural service area;
- Major industries served by FortisBC include forestry/pulp and paper, agriculture and tourism;
- Population growth in its service area has been strong over the past decade;
- Economic growth in B.C., dependent on the strength of commodity prices and the strength of the US economy, is expected to continue to outpace that of the country as a whole;
- Recent NAFTA rulings in favour of the Canadian forest industry may ultimately be beneficial;
- Increased demand for B.C.'s exports, not just those of the forest products industry, is anticipated from the economies of the Pacific Rim;
- Long-term B.C. economic growth is expected to be at a somewhat lower rate than the country as a whole;
- FortisBC has significant heating load (in competition with natural gas), with approximately one-third of direct residential (and likely wholesale) sales for heating purposes;
- FortisBC has no rate-stabilization mechanism to dampen the effects of weather volatility;
- FortisBC competes to some extent with alternative suppliers of electric power, such as BC Hydro, given the customer choice available to wholesale and large industrial customers;
- Technological change is expected to increasingly create competitive alternatives;
- FortisBC generates 45 percent of its supply from its own hydroelectric plants, obtaining the remainder of its supply through long-term contracts and market purchases; and
- FortisBC has a power purchase incentive mechanism to mitigate its exposure to market price volatility (Exhibit B-1, Tab 5, pp. 7-13).

Ms. McShane assesses three factors associated with the regulatory component of FortisBC business risk: deferral accounts, performance-based regulation ("PBR") and depreciation expense. Ms. McShane states that, in contrast to many Canadian utilities, FortisBC has operated with few deferral accounts: it has no deferral account for short-term interest expense, it has no rate-stabilization mechanism to dampen the effects of weather volatility; and, while it has shared deviations from purchased power costs with customers, it has not operated with a pass-through mechanism for such costs (Exhibit B-1, Tab 5, p. 13).

In her discussion of the impact of FortisBC's PBR from 1996-2004, Ms. McShane notes that the Dominion Bond Rating Service ("DBRS") considers the regulatory environment in B.C. among the more progressive in Canada. In comparison to traditional cost of service ratemaking, Ms. McShane considers that the FortisBC PBR plan, which retains a link to actual costs and includes sharing, exposes the shareholder to a moderately higher level of business risk (Exhibit B-1, Tab 5, pp. 14-15).

Ms. McShane points out that the settlement agreement in the 2000 NSP included a PBR rate stabilization mechanism to limit rate increases to 5 percent or less, with a reduction in annual depreciation expense as necessary to achieve this end. In addition, the same agreement lowered the depreciation rate on transmission assets. Ms. McShane states that both factors have contributed to the free cash flow deficits currently faced by FortisBC (Exhibit B-1, Tab 5, p. 15).

Ms. McShane concludes that FortisBC faces above average business risk relative to its Canadian electric and gas peers, and relative to the low-risk benchmark utility.

### Financial Risk

Ms. McShane defines financial risk as the additional risk incurred as a result of assuming debt, which results in the incurrence of additional fixed obligations that must be met before the equity investor is entitled to any of the operating income generated by the utility. Ms. McShane assesses capital structure ratios, interest coverage ratios and debt ratings as points of departure for analyzing the financial risk faced by FortisBC.

Ms. McShane calculates that the actual common equity ratio of FortisBC between 1999 and 2004 has averaged 40.1 percent. While slightly higher than the proposed 40 percent common equity ratio, it is nonetheless consistent with the maintenance of a roughly 60%/40% debt/equity capital structure for at least the last ten years (Exhibit B-1, Tab 5, pp. 16-17). Ms. McShane compares FortisBC's forecast common equity ratio to other Canadian electric utilities and concludes that it is in line with the allowed common equity ratios of other investor-owned electric utilities (Exhibit B-1, Tab 5, pp. 17-20).

Ms. McShane discusses FortisBC's interest coverage ratios as one factor that determines the level of its financial risk. Ms. McShane reports that the pre-tax interest coverage ratio in 2003 equaled 2.1 and that the average pre-tax interest coverage ratio for the five-year period ending 2003 was 2.1. Ms. McShane says that while the 2003 ratio of 2.1 is a material improvement from the ratio of 1.8 in 2002, the five-year average ratio is a deterioration from the previous five-year average ratio of 2.4 calculated over the period 1994-1998. Further, Ms. McShane offers the comparison that the 1999-2003 average ratio of 2.1 is less than the average ratio of 2.4 across other major Canadian electric utilities over the same period. Ms. McShane states that the declining interest coverage ratios of FortisBC reflect, in part, that its allowed returns on equity have generally declined more rapidly than its embedded debt costs (Exhibit B-1, Tab 5, pp. 20-21).

With respect to debt ratings, Ms. McShane reports that DBRS rates FortisBC debt BBB(high) with a “Stable” trend, and has consistently rated it such since 1996. Ms. McShane notes that this is the lowest DBRS rating of the investor-owned electric utilities in Canada. DBRS confirmed its ratings in June 2004 and provided a full evaluation of the company in November 2004. Ms. McShane summarizes the November 2004 DBRS report with the following points:

- The FortisBC financial profile has weakened in recent years due to a variety of factors including free cash flow deficits and low allowed ROEs;
- Relatively large anticipated capital expenditures over the next 4 years will contribute to large free cash flow deficits;
- The rate-stabilization mechanism on depreciation expense may keep cash flows weaker, but the projected free cash flow deficits could be reduced if this mechanism is eliminated;
- A key challenge to the financial profile remains a low interest rate environment; and
- Despite the free cash flow deficits, FortisBC’s financial profile is expected to remain acceptable for the ratings.

Ms. McShane reports that the Moody’s Investors Service (“Moody’s”) rated FortisBC Baa3 in November 2004, its first debt rating of the Company. Ms. McShane notes that the rating is premised on low business risk, a significant capital expenditure plan over the next four to five years, the need for rate increase to implement the plan, a low depreciation rate, a tight liquidity position, cash flow deficits and the need for equity infusions from the parent during the period of high capital expenditures. Ms. McShane states that a Baa3 is the lowest investment grade rating, providing little “cushion” should there be any deterioration in the business risk profile or financial parameters (Exhibit B-1, Tab 5, pp. 23-24).

Based on her assessment of FortisBC’s business and financial risks, Ms. McShane concludes that a common equity ratio in the range of 40-45 percent is reasonable, compatible with its business risks and adequate to maintain a stand-alone rating of DBRS BBB(high). However, she notes that, given the forecast level of capital expenditures in the near to medium term and expected free cash flow deficits, a 40 percent common equity ratio should be regarded as the floor required to ensure adequate financing flexibility. Ms. McShane concludes that at a 40 percent common equity ratio, “FortisBC would be of higher investment risk than a benchmark Canadian utility, which requires the addition of an incremental equity risk premium to the equity return applicable to the benchmark low-risk utility” (Exhibit B-1, Tab 5, pp. 20-29).

### Equity Risk Premium

As noted above, Ms. McShane accepts the Commission's ROE for a benchmark low risk utility as a point of departure for estimating the equity risk premium for FortisBC at the proposed common equity ratio of 40 percent. With this frame of reference, Ms. McShane calculates a range of equity risk premiums for FortisBC relative to a low-risk benchmark utility by estimating the risk differential as between, or as impacted by, PBR versus Cost of Service regulation, utility size, debt costs and relative costs of equity.

To assess the impact of PBR versus Cost of Service regulation, Ms. McShane utilizes a study prepared by the World Bank, which concluded that the difference between the asset (business risk) betas of energy utilities operating under rate of return regulation and price or revenue cap regulation was close to 0.40. Ms. McShane suggests that FortisBC has a risk position in the middle of the two extremes used in the World bank study, or a beta differential of 0.20. Using the Commission's market risk premium of 5.0 percent as reported in its 1999 Decision on Return on Common Equity for a Benchmark Utility, Ms. McShane concludes that the difference between PBR and Cost of Service regulation translates into a difference of 100 basis points (i.e. a 0.20 beta differential multiplied by 5 percent) (Exhibit B-1, Tab 5, p. 15).

To assess the impact of utility size, Ms. McShane utilized a study of historic returns and betas for companies of different sizes to compare the asset betas between a typical publicly-traded Canadian utility, defined by Ms. McShane as a Mid-Cap stock, and FortisBC, defined by Ms. McShane as a Low-Cap stock. Using the differential result of 0.14 and a market risk premium of 5.0 percent, Ms. McShane concludes that the size of FortisBC could justify it receiving an equity risk premium of 70 basis points (Exhibit B-1, Tab 5, p. 31).

To assess the difference between the debt costs of FortisBC and a low-risk benchmark utility, Ms. McShane assumed that a low-risk benchmark utility would be able to achieve a solid A rating on its debt. By comparing the 2002 average spread for a seven-year issue for Canadian utilities rated A(low)/A- or higher (95 basis points) to a FortisBC (Aquila(BC)) 2002 seven-year debt issue at 170 basis points above the benchmark seven-year Canada, Ms. McShane concludes that the difference in debt costs between FortisBC and a low-risk benchmark utility translates into an equity risk premium of 75 basis points (Exhibit B-1, Tab 5, pp. 32-33).

To estimate an equity risk premium for FortisBC using relative costs of equity, Ms. McShane compares the average beta of a group of A rated U.S. utilities, as proxies for the low-risk benchmark utility, to the average beta of a group of BBB rated U.S. utilities, as proxies for FortisBC. Ms. McShane concludes that the differential of 0.10 between the average betas of the two sample groups translates into an equity risk premium of 50 basis points if using a market risk premium of 5.0 percent (Exhibit B-1, Tab 5, pp. 33-35).

In sum, Ms. McShane concludes that a reasonable range for an incremental equity risk premium for FortisBC relative to the low-risk benchmark utility is in the range of 50-100 basis points, with a mid-point of 75 basis points.

### 2.2.2 Direct Evidence of Dr. Booth

Dr. Booth was asked by BCOAPO to provide an independent assessment of the appropriate common equity ratio and fair return for FortisBC, to assess its business risk and financial flexibility, and to make recommendations to ensure that rates are fair and reasonable. Dr. Booth indicates that his evidence is organized, in part, around: 1) a discussion of the business risk of FortisBC from a capital markets perspective, 2) a discussion of financial market access concerns and questions surrounding “rising” credit standards, and 3) a discussion about coverage ratios and how the capital market reacts to current financial metrics. The following is a brief summary of the evidence of Dr. Booth (Exhibit C5-5).

Dr. Booth considers the business risk of FortisBC to be low. Dr. Booth considers that FortisBC has little “generating” risk given that it is primarily reliant on hydroelectric generation and purchased power. Dr. Booth notes that electricity demand in FortisBC’s service area is growing at a slightly higher rate than in B.C. generally, and that compared to electric utilities operating elsewhere in Canada, the regulatory regime in B.C. is stable. Dr. Booth asserts that the main impact of the FortisBC PBR is to provide an incentive to the company to operate more efficiently and earn a higher ROE, not to expose it to material risk. Further, Dr. Booth points to data on actual versus allowed ROE for FortisBC’s regulated operations from 1986 through 2004 to conclude that after FortisBC moved to a PBR mechanism in 1996, the actual ROE has been above the allowed ROE (aside from 2002 when the failure to earn the allowed ROE was due to integration expenses and software write-offs). Dr. Booth notes that rather than the DBRS view that FortisBC has a consistent history of earning the regulated ROE, he would define the result rather as “over-earning.” Dr. Booth sees “no reason for adding a bonus to the ROE for a system that already effectively enhances the company’s ROE and does not increase its risk” (Exhibit C5-5, p. 22).

In association with his discussion of business risk, Dr. Booth provides evidence to show that he usually judges transmission operations as warranting a 30 percent common equity ratio and distribution 35 percent, while more recently, for example, the Alberta Energy and Utilities Board has awarded slightly higher common equity ratios of 33 percent and 37 percent, respectively. In this context, and given his judgment of business risk, Dr. Booth judges the applied-for 40 percent common equity ratio as excessive.

Dr. Booth presents evidence on the degree to which FortisBC is compensated for its risk by utilizing the theoretical relationship between the risk of a firm with financial leverage to a firm without financial leverage plus a financial leverage risk premium. While recognizing that equating the effect of a higher common equity ratio and a higher allowed ROE is largely a matter of judgment, Dr. Booth determines that a higher ROE and common equity ratio awarded FortisBC (then West Kootenay Power) in a 1994 Commission decision is equivalent to 55 basis points above Terasen Gas Inc. (“Terasen Gas”) (then BC Gas), the low-risk benchmark utility. Dr. Booth states that one implication of this is that it is important for the Commission to take into account all the ways that it manages the risk of FortisBC and to not double count the same risks in different areas. Dr. Booth judges that FortisBC is marginally riskier than Terasen Gas, but that this risk is more than offset by FortisBC’s higher common equity ratio.

Dr. Booth comments on the debt rating implications of FortisBC being a very small electricity company issuing debt in the capital markets under its own name. Dr. Booth states that size is a factor in bond ratings, and it also affects the liquidity of the bond issue. He notes that the result is that smaller issuers tend to issue shorter term debt and have inferior bond ratings than large issuers, all else equal. Dr. Booth comments that the problems associated with the size of FortisBC, in combination with the significant growth in rate base that is anticipated as the utility refurbishes its generation, transmission and distribution plant, may pose capital market access problems. Dr. Booth notes, however, that this access problem could be mitigated with equity infusions from its parent, and ultimately recede as the rate base expansion is completed.

Dr. Booth presents some example calculations of interest coverage ratios to argue that it makes no sense to target a particular interest coverage ratio and allow a higher ROE simply because a company has a high embedded cost of debt. Dr. Booth argues that if the allowed ROE and deemed common equity ratios are considered fair, but the resulting interest coverage is considered too low because of high embedded interest costs and there are capital market access problems, then the solution is to allow or deem some preferred shares, rather than give the equity holder a bonus to the fair ROE or equity ratio.

Dr. Booth assesses the market to book ratio associated with the purchase price of Aquila(BC) by Fortis, as well as the ratios associated with other utility purchases, in comparison to a target ratio of 1.15. He notes his view that values above 1.15 indicate that the rates are too high and that the equity holders are getting a more than fair and reasonable return. Dr. Booth approximates that for the FortisBC purchase the market to book ratio based on total rate base equaled 1.38, while the market to book ratio based on equity (based on assuming debt and valuing it close to book value) equaled 1.96.



In sum, Dr. Booth asserts that the currently approved 40 percent common equity ratio and 40 basis risk premium are excessively generous. Dr. Booth is of the view that there are no grounds for increasing the generosity of these financial metrics, but rather that the elimination of the 40 basis points risk premium would be a conservative roll back.

### 2.2.3 Submissions

The following sections summarize various arguments and submissions of FortisBC and intervenors with respect to business risk, financial risk, and the equity risk premium.

#### Business Risk

FortisBC reiterates in its argument that its business risk is greater now than it has been in the past. Using Dr. Booth's frame of reference as a point of departure, FortisBC submits, with reference also to its Resource Plan, that its risk regarding its energy needs is much greater than it was in 1994; it is far more reliant on the market for energy in 2005 than it was in 1994, and the market is more volatile. FortisBC also states that it faces increasing competition from natural gas, its industrial customers have the opportunity to switch to third party supply, and residential use per customer has been steadily declining. FortisBC submits that these factors, combined with its increased reliance on a volatile market, are evidence of its increased business risk (FortisBC Argument, pp. 18-20).

BCOAPO submits that an October 2004 FortisBC presentation to DBRS (Exhibit B-4, Response to BCOAPO IR 88.1) stands in contrast to the conclusion of Ms. McShane that FortisBC faces above average business risk relative to its Canadian electric peers, and relative to the low risk benchmark utility in the B.C. context. BCOAPO submits that FortisBC has told the investment community that it is a low cost, low risk franchise with supportive regulation and no problems in accessing capital, referring in support to the following summary of the FortisBC presentation highlights provided by FortisBC in response to an information request (BCOAPO Argument, pp. 9-10):

- Vertically integrated regulated electric utility,
- Supportive regulation – a low cost, low risk franchise,
- Solid franchise history with strong economic fundamentals,
- Diversified customer base,
- 205MW low cost hydro and long term PPAs in rate base,
- Power purchase costs flow through – limited commodity risk,

- Growing regulated rate base, and
- Strong balance sheet and supportive shareholder.

Further, BCOAPO submits that comparing Ms. McShane's definition of business risk (of exposing the shareholders to the risk of under-recovery of the required return on capital) to the evidence that FortisBC's actual ROE has exceeded its allowed ROE in every year since 1996 (except 2002) would lead it to conclude that there has been no business risk attached to the operations of FortisBC (BCOAPO Argument, p. 11).

BCOAPO submits that FortisBC's industrial load has not had a significant risk impact on the Company. BCOAPO describes that there is little dependence on industrial customers when measured by revenues, and there is minimal bypass risk. Further, there is opportunity for load retention rates should such customers wish to leave the system. BCOAPO points out that no large customers have bypassed the system in the last five years, perhaps explained in part by the possibility of such customers having to reimburse FortisBC for stranded assets should they choose to buy supplies elsewhere (BCOAPO Argument, pp. 12-14). BCOAPO also submits that "what holds in the face of bypass risk also holds in an absolute sense: FortisBC's reliance on low cost hydro makes its generation risk minimal. In practice there is minimal risk of the power not being dispatched or the assets being stranded" (BCOAPO Argument, p. 19).

BCOAPO submits that the risk associated with residential load is limited. In particular, it submits that FortisBC has incremental residential heating load to begin with because its rates are competitive due to its low generating cost. Further, BCOAPO says that the Company has not requested any weather normalizing rate stabilization mechanism in the past ten years. It submits therefore that the company does not consider the impact of weather volatility on residential load to be a material risk (BCOAPO Argument, pp. 12-13).

In regard to the risk associated with market purchases and market volatility, KOECA submits that it is unlikely that higher power purchase costs in the future will result in reduced returns for shareholders given its expectation that the Commission will ensure that this risk will be passed on to customers to keep the Company healthy. Further, KOECA submits that FortisBC does not address how separate risk factors may partially negate themselves, pointing out in example that a decline in residential use per customer, if it leads to a reduction in total residential demand, "would partially compensate for the supposed risk associated with power purchases" (KOECA Argument, pp. 4-5). KOECA submits that if there is uncertainty about the correct methodology to apply to an evaluation of FortisBC's risk, it makes sense to seek "ground truth" by paying attention to the actual experience of the company (KOECA Argument, p. 5).

## Financial Risk

FortisBC argues that its financial risk is greater than it has been in the past. Noting again that the financial risk of a utility can be captured in its capital structure ratios, interest coverage ratios and debt ratings, FortisBC reiterates that its 1999-2003 pre-tax interest coverage ratio of 2.1 is significantly less than the previous 5 year average of 2.4 observed between 1994 and 1998. Further, it notes that its debt rating was downgraded by DBRS in 1996 to BBB(high), lower than any other Canadian electric utility in the sample provided by Ms. McShane in her evidence (FortisBC Argument, pp. 21-22), and its Moody's debt rating is Baa3 is lower still, equivalent to a DBRS rating of BBB(low).

FortisBC argues that Dr. Booth's interest coverage ratio calculations, and the conclusions that he draws from them, are flawed and inaccurate. FortisBC submits therefore that this evidence should be rejected (FortisBC Argument, pp. 22-26). FortisBC submits that it was unable to access 30-year bonds in 2004, substantially due to its low interest coverages and being regarded as too high risk (FortisBC Argument, pp. 22, 25-26).

BCOAPO notes that Dr. Booth indicated in cross-examination by FortisBC Counsel that he accepts the interest coverage ratios calculated by FortisBC. However, BCOAPO quotes Dr. Booth as noting that the interest coverage ratios are all temporary timing phenomenon, "basically waiting until the debt costs roll out and wait until its capital expenditure program is completed" (BCOAPO Argument, p. 22).

BCOAPO comments on the cross-examination by Commission Counsel of both Ms. McShane and Dr. Booth as to the impact of an increase in the equity risk premium from 40 to 75 basis points on the five credit challenges identified by Moody's in its November 2004 report. Those five credit challenges are a \$450 million capital expenditure plan over next 5-years, rate increases to support the capital expenditure plan, relatively low depreciation rates, a tight liquidity position, and free cash flow deficits requiring equity infusions from its parent. BCOAPO submits that the testimony as to the marginal or non-existent impact of an increase in the equity risk premium on these credit challenges further undermines FortisBC's case for an increase in the equity risk premium (BCOAPO Argument, p. 21).

FortisBC proposes to maintain its current capital structure, with a common equity ratio of 40 percent, noting that the BCOAPO expert also recommends a common equity ratio of 40 percent. Further, FortisBC notes that in their written arguments, intervenors either endorsed this capital structure or had no comment. FortisBC submits that the supporting evidence and the absence of argument against the proposed capital structure strongly support an Order of the Commission approving a capital structure which includes a common equity ratio of 40 percent (FortisBC Argument, p. 17; FortisBC Reply Argument, p. 4).

### Equity Risk Premium

BCOAPO presents argument that questions the relevance and justification of Ms. McShane's analysis of the appropriate equity risk premium for FortisBC relative to the low-risk benchmark utility. BCOAPO asserts that Terasen Gas is the BCUC low risk utility given its 33 percent common equity ratio and the fact that it is not granted an equity risk premium above the BCUC automatic ROE. The BCOAPO argues that Ms. McShane refused to accept that Terasen Gas is the BCUC low risk benchmark utility (BCOAPO Argument, p. 16). BCOAPO comments that financial risk compounds business risk and a low common equity ratio indicates low business risk. BCOAPO questions that if Terasen Gas is not the low risk benchmark then it is reasonable to ask what the proposed 75 basis points equity risk premium is over. To illustrate this point, BCOAPO suggests that it may be, for example, that Terasen Gas and FortisBC are now of equivalent risk in which case there would be no reason for a risk premium for FortisBC over the Commission's low risk benchmark (BCOAPO Argument, pp. 16-17).

BCOAPO expands upon its argument in this matter by commenting on the DBRS BBB(high) debt rating of Fortis (which Ms. McShane equates with a Standard & Poors (S&P) rating of BBB) relative to the debt rating of a low-risk benchmark (which Ms. McShane equates with an A rating). BCOAPO submits that Ms. McShane's methodology of assessing the differentials between A and BBB rated utilities is flawed, in part because it does not account for the impact of FortisBC's size on its debt rating (and the related matter that spreads may include liquidity premiums for smaller issues). BCOAPO submits that "if FortisBC were simply a larger firm its bond rating would be higher even if its business risk is unchanged, so basing the analysis on bond ratings in part simply awards FortisBC a higher ROE simply because it is small." BCOAPO submits further that Terasen Gas, with its DBRS A and S&P BBB debt ratings, could fit within the same rating group as FortisBC in Ms. McShane's analysis (BCOAPO Argument, pp. 17-18).

FortisBC submits that FortisBC and Terasen Gas cannot be regarded as having similar debt ratings, as suggested by BCOAPO, in part because: 1) BCOAPO is proceeding on the incorrect premise that Terasen Gas is equivalent to a low risk benchmark utility, when Ms. McShane states that a low risk benchmark utility would be an A rated utility, which Terasen Gas is not; and 2) FortisBC has two ratings in the BBB category and is therefore rated lower than Terasen Gas (FortisBC Reply Argument, pp. 10-11).

With respect to utility size, FortisBC replies that it remains a small utility, unable to diversify its risks to the same extent as larger utilities whose assets, geography and economic bases are less concentrated (FortisBC Reply Argument, p. 12).

In its argument, IMEU submits that FortisBC acquired the utility approximately one-year ago understanding the risks and rewards of its investment. It is of the view that the purchase price that was struck, for a significant premium over book value, was based on this understanding. Therefore, IMEU submits that an increased risk premium is inappropriate and not justified in the short-term, a conclusion it states is also supported by the evidence on FortisBC's risk factors (IMEU Argument, pp. 5-12).

BCOAPO states that with a 40 percent common equity ratio Fortis paid about \$734 million to acquire \$377 million in equity earning the Commission's automatic ROE plus 40 basis points, which results in a ratio of almost twice book value. BCOAPO submits that this is an excessive, unfair market to book ratio, and that the correct regulatory response should be to reduce the premium, not increase it to 75 basis points (BCOAPO Argument, p. 21).

In response to the issue of the premium over book value, FortisBC submits that the price to regulated book value on its purchase (1.8) reflects also the amount paid for the majority of regulated assets/companies sold in Canada over the last 7 years. Further, it submits that because it is required to engage upon an extensive capital expenditure program over the next several years the premium it paid will effectively be reduced (FortisBC Reply Argument, p. 15).

FortisBC submits that the debt market problem and fair return on equity are not independent from each other because capital structure and ROE (as a function of business risk profile) factor into the willingness of the bond market to lend funds under reasonable rates and terms. FortisBC submits that an increase in the equity risk premium that is fully compensatory with its business and financial risks, along with an increase in the depreciation rate, will address the Company's inability to access the long-term bond markets (FortisBC Reply Argument, p. 14).

#### 2.2.4 Commission Panel Determinations

The Commission Panel has considered the evidence of FortisBC and BCOAPO, and the arguments of all parties. The following discussion highlights the Commission Panel's observations and conclusions in this regard.

With respect to market demand components of business risk, the Commission Panel believes that the prospects for FortisBC residential demand are good given the strong growth prospects in the Okanagan service area, in spite of the penetration of natural gas for heating new residential construction. The Commission Panel is persuaded by the argument that residential heating demand is incremental and not a significant business risk as FortisBC defines it. The Commission Panel notes that because FortisBC is a capacity constrained utility, a reduction to the

heating component of demand could actually serve to reduce its business risk. Yet, to the extent the penetration of natural gas for heating could be regarded as a material risk, and to the extent that such risk could have a detrimental impact on FortisBC's credit rating, an increase in the equity risk premium would serve to increase this risk all else equal. The Commission Panel does not agree that a reduction in residential use per customer (as one factor of total demand) is an indication of a net increase in business risk for FortisBC, particularly in light of increasing load growth in the FortisBC service area generally. The Commission Panel also agrees with the evidence that suggests, in general, that population and economic growth will remain strong in the FortisBC service area.

With respect to supply risk factors, the Commission Panel acknowledges that FortisBC does compete to some extent with alternative suppliers of electricity given the customer choice available to wholesale and large industrial customers. The Commission Panel notes, however, that there are strong constraints on the likelihood of municipalities opting for alternative suppliers, and that the industrial component of load is not large and also unlikely to opt for alternative suppliers. The evidence and argument bear this out. Further, the Commission Panel acknowledges that there is risk associated with market purchases and market volatility, but it does not agree that this risk has increased to any measurable extent for FortisBC. FortisBC obtains low-cost supply from its own generating plants and long term contracts, with the remainder of its supply obtained through market purchases. Market purchases, while an increased share, are still limited, and FortisBC has a power purchase incentive mechanism to mitigate its exposure to market price volatility.

The Commission Panel agrees with the evidence that characterizes the regulatory environment in B.C. as progressive, believing it as well to be a positive consideration in respect of the regulatory risk that FortisBC faces. The Commission Panel observes that the progressive regulatory environment in B.C. is noted as a strength in the DBRS credit rating evaluation of FortisBC. The Commission Panel does not agree with the view that the FortisBC's PBR plan is inherently more risky than a traditional cost of service regulatory framework, particularly given the various sharing mechanisms that are components of this plan and the demonstrable evidence that FortisBC's actual ROE has, with one exception, met or exceeded its approved ROE since 1996. The Commission Panel does not consider the evidence of actual ROEs consistently exceeding allowed ROEs to imply, in and of itself, any conclusion about changes in the level of business risk, higher or lower. Even so, the Commission Panel considers the question of whether a utility has been able to meet its revenue requirements as a useful test of the reasonableness of an allowed ROE. In the period since 1994 FortisBC has with one exception met or exceeded its revenue requirements.

FortisBC emphasizes its interest coverage ratios, arguing in part that current low interest coverages are a substantial cause of its inability to access the 30-year bond market in 2004, and in turn that this circumstance is the main driver of its application for an increase in its equity risk premium. FortisBC argues that its interest coverages are significantly lower than in the past by comparing its average interest coverage ratio of 2.1 over the five-year period, 1999-2003, to its average interest coverage of 2.4 over the previous five-year period, 1994-1998. The Commission Panel finds that this comparison is not substantively informative. While Ms. McShane states that the decline reflects, in part, that allowed ROEs have generally declined more rapidly than the embedded debt costs, neither she nor FortisBC have provided any other detailed rationale or context to explain the differences between the two five-year periods. The Commission Panel observes that the consistent DBRS rating of BBB(high)-Stable trend since 1996 largely spans both of the five-year periods used in the averaging calculations. Further, the Commission Panel notes that FortisBC's actual 2004 pre-tax interest coverage ratio is 2.32 and its average pre-tax interest coverage ratio for the period 2000 to 2004 is 2.16, both of which represent increases, respectively, from its 2003 ratio of 2.1 and its 1999-2003 average ratio of 2.1 (Exhibit B-12, Response to BCUC IR 12.5). FortisBC has not explained how these increases should be interpreted in the context of the evidence of decreases that it presents in evidence and in argument. FortisBC notes that the difference between the average interest coverage ratios of the two five-year periods is significant, a difference equal to 0.3. The Commission Panel notes that in FortisBC's initial 2005 application the estimated interest coverage ratio is 2.06, and declined to 2.01 on the basis of assuming a 40 rather than 75 basis points risk premium (Exhibit B-12, Response to BCUC IR 12.7). The difference of 0.05 between these two ratios could be regarded in this context as less than significant and relatively insensitive to changes in the equity risk premium. In addition, the Commission Panel agrees that low interest coverages could be considered a temporary phenomenon in light of FortisBC's planned capital expenditures over the next four years and low depreciation rates currently. The Commission Panel believes that, even to the extent that FortisBC's interest coverages could be regarded as too low, declining, or more than a temporary phenomenon, an increase in the equity risk premium is not the appropriate means to first consider for improving FortisBC's interest coverages. The following discussion elaborates on this.

BCOAPO referred in argument to cross-examination of both Ms. McShane and Dr. Booth by Commission Counsel as to the expected impact of an increase in the equity risk premium on each of the five credit rating challenges identified by Moody's in its November 2004 report. Those credit rating challenges are (Exhibit B-12, Response to BCUC IR 15.0):

- A significant \$450 million capital expenditure plan to be implemented over the next 4-5 years;
- The possible need for rate increases in each of the next few years to implement the capital expenditure plan;
- A relatively low depreciation rate for rate-making purposes;

- A liquidity position that is tight for a Baa3 utility company; and
- Free cash flow that is expected to be negative for the next few years, necessitating equity infusions from its parent, as well as additional debt issuance.

The Commission Panel is of the view that both experts' testimony as to the limited or non-existent impact of an increase in the equity risk premium on these credit challenges diminishes the FortisBC argument that an increase in the equity risk premium will materially affect its credit rating and its ability to access the long-term bond market. FortisBC acknowledges in response to a Commission information request that while a change in its equity risk premium from 40 to 75 basis would be a positive consideration, it alone would not likely result in an increase in FortisBC's credit rating. In their November 2004 credit rating reports, both DBRS and Moody's emphasize the issues of FortisBC's free cash flow deficits and low depreciation rates. DBRS notes in one instance that higher depreciation rates could reduce FortisBC free cash flow deficits. The Commission Panel observes that DBRS maintained its FortisBC debt rating of BBB(high)-Stable trend despite its concerns.

The Commission Panel believes that it would be untimely and inappropriate to increase the equity risk premium in response to the credit challenges noted above without measures being taken to more directly address these credit challenges, particularly in light of the Commission Panel's views as to the business risk of FortisBC. To this end, and in alignment with the November 2004 evaluations of both DBRS and Moody's, the Commission Panel has directed FortisBC in this Decision to file its forthcoming study of depreciation rates with its next revenue requirements application, and to have the new rates form part of that application. Also, the Commission Panel notes that the rate stabilization mechanism on depreciation expense is no longer in effect.

The Commission Panel has concerns about the methodology used by Ms. McShane to determine an incremental equity risk premium for FortisBC. For example, the Commission has determined that Terasen Gas is a low risk benchmark utility in B.C., and to ignore this as a reasonable proxy in the analysis calls into question the entire framework, particularly in light of the reliance, in part, on utilities based in the US as proxies for the low-risk benchmark. Further, the Commission Panel agrees with the BCOAPO submission in regard to the impact of size on credit ratings, which calls into question the methodology of comparing the credit ratings across utilities as a means to determine an incremental risk premium, without controlling for the impact of size.

The Commission Panel notes that a fundamental test of the appropriateness of an allowed ROE is whether the utility has been able to attract equity capital. Evidence of this test has been met: the willingness of FortisBC to purchase the equity of Aquila(BC) and to pay a premium in so doing.



**The Commission Panel approves the FortisBC application to maintain a common equity ratio of 40 percent and denies the FortisBC application to increase its equity risk premium from 40 to 75 basis points. The Commission Panel denies the BCOAPO recommendation to reduce FortisBC's equity risk premium from 40 basis points to zero on the basis that there is insufficient evidence in support of this recommendation.**

## **2.3 2005 Revenue Requirements**

### 2.3.1 Rate Base

A utility's rate base represents the net investment in assets necessary to provide service. FortisBC's Rate Base, as described in Exhibit B-1 at Tab 6, is comprised principally of Plant in Service, Accumulated Depreciation and Amortization, Deferred Charges and Credits, Allowance for Working Capital, and an Adjustment for Capital Expenditures (FortisBC Argument, p. 29).

FortisBC submits that its forecast mid-year rate base for 2005 of \$598,105,000, as provided in Schedule 1 to the Third Revised Application (Exhibit B-26), be approved for purposes of establishing 2005 Revenue Requirements and setting rates to customers effective January 1, 2005 (FortisBC Argument, p. 30).

Rate Base costs include such items as cost of debt, cost of equity, income taxes, property and capital taxes, depreciation and amortization and Allowance for Funds Used During Construction ("AFUDC"). FortisBC seeks approval of forecast total Rate Base costs of \$78,569,000 (Exhibit B-26, p.3; FortisBC Argument, pp. 31-38).

### Commission Panel Determinations

**The Commission Panel accepts the proposed mid-year rate base of \$598,105,000 for 2005 subject to directions contained in this Decision that affect the components of rate base. Likewise, FortisBC should update its forecast Rate Base costs according to the relevant Commission Panel determinations elsewhere in this Decision.**

### 2.3.2 Power Supply

**The Commission Panel approves FortisBC's forecast Power Supply costs for 2005 of \$71,010,000. This is discussed in Section 2.1.2: Power Purchase and Wheeling Forecast.**

**Nova Scotia Utility and Review Board  
in the Matter of the Gas Distribution Act  
Decision NSUARB-NG-2  
2003 NSUARB 8**

**DECISION**

**NSUARB-NG-02  
2003 NSUARB 8**

**NOVA SCOTIA UTILITY AND REVIEW BOARD**

**IN THE MATTER OF THE GAS DISTRIBUTION ACT**

- and -

**IN THE MATTER OF Franchise Applications for the Distribution of Natural Gas in the Province of Nova Scotia**

**BEFORE:** John A. Morash, C.A., Chair  
Margaret A. M. Shears, Vice-chair  
John L. Harris, Q.C., Member  
Kulvinder S. Dhillon, P. Eng., Member

**APPLICANTS:** **HERITAGE GAS LIMITED**  
John C. MacPherson, Q.C., Counsel

**STRAIT AREA GAS CORPORATION**  
Leonard MacDonald, Mayor, Town of Mulgrave  
Billy Joe MacLean, Mayor, Town of Port Hawkesbury  
Sam Murray, Chief Administrative Officer, Town of Mulgrave

**HEARING PARTICIPANTS:** **Canadian Oil Heat Association (NS Chapter)**  
David A. Hovell, Executive Director

**Geostorage Associates**  
Alan Ruffman, P.Geo., Partner

**Halifax Regional Municipality**  
Mary Ellen Donovan, LL.B.  
Senior Solicitor, Legal Services

**Irving Energy Services Limited**  
Christopher Stewart, LL.B.

Both SaskEnergy and AltaGas have indicated that they are more than prepared to provide that knowledge and expertise to Heritage.

Heritage therefore submits that it has, through its owners, the required experience to operate the natural gas delivery system proposed in its Application.

(Heritage, Post Hearing Written Submission, pp. 26-28)

#### **4.2 Submissions - Intervenors**

[66] No substantive concerns were expressed by Intervenors concerning the financial capability or related natural gas experience of Heritage.

#### **4.3 Findings**

[67] In the Board's view, two of the three partners in Heritage have shown through the financial statements filed with the Board that they are financially stable entities with the ability to support this undertaking. These two partners currently own and operate viable distribution operations in other parts of Canada. Scotia Investments, a large, well known company based in Nova Scotia, did not file financial statements with the Board. In view of the financial strength of SaskEnergy and AltaGas, the Board finds that Heritage has met the regulatory requirement relating to financial capability and related experience.

### **5.0 FINANCIAL PLAN**

#### **5.1 Submissions - Applicant**

[68] Heritage outlined the basic principles of its financial plan as follows:

The development of an economically viable gas distribution system is in the best interests of potential customers, the Province of Nova Scotia and the distributor. In doing so, balance must be struck between the costs borne by the customer, through service rates, and the opportunity for the distributor to earn a fair return on its investment.

Heritage Gas is committed to the prudent and responsible development of the gas distribution system in its proposed franchise area. There is a clear understanding that the nature of the gas distribution business requires a long-term view from the distributor. However, in a greenfield market, the long-term view must be tempered by the significant effort and capital investment required to begin to bring natural gas service to the market.

Inherent in the business model is the recognition that even a prudent approach is not without risk to the distributor in a greenfield market. Up-front investment in market development, customer sign-up and the initial infrastructure build-out presents a far different level of investment risk than is faced by well established, mature distribution systems in Canada.

The Heritage Gas business model reflects an approach that is consistent with traditional cost-of-service principles found in many other jurisdictions in Canada. It is a recognition that customers must pay their appropriate allocation of the costs of providing service and the distributor must have the opportunity to earn a fair, risk adjusted return on the capital employed.

The overriding principle of the business model is that the resulting customer rate structure must produce competitive natural gas service costs versus existing fuels. Without a competitive rate structure, customers will be unable to justify economic conversions to natural gas. Simply stated, the business model must work in tandem with conversion economics to produce the number of customers, volumes and revenue base that are reflected in the pro forma Income Statement, Balance Sheet and Statement of Cash Flows. These ProForma Statements for the first ten years of operation are included in Appendix C.

The business model does not rely on significant deferral accounts or cross-generational allocation of costs. It is however based on the principle that the distributor should expect to earn a 14% rate of return on invested equity capital, on a simple average basis, over the first five years of operation. This will require rate levelization over the initial years of operation to achieve this result. This approach avoids the typical front-end loaded cost of service scenario in which the initial customers, generally speaking, pay higher rates than tomorrow's customers. Subsequent to the five-year period, the business model is designed to produce a consistent level of return on equity of 14%.

Heritage Gas's intended approach is to initially establish a five (5) year delivery service rate that is designed to recover the five (5) year total revenue requirement over the initial five (5) year period. In the early period of development this will result in Heritage Gas's earnings, before the deficiency accrual, being less than the required fourteen (14%) percent return on equity. Earnings before the deficiency drawdown would be more than the revenue requirements in the latter part of the five (5) year period.

Variations from the underlying business plan would be approached in the following ways. First, the initial five (5) year rate may be adjusted periodically as required to recover the five (5) year revenue requirement over the five (5) year period. Secondly, a deferral account mechanism will be used to record any annual shortfall in achieving the revenue requirement or any annual revenue in excess of the revenue requirement. If required, the deficiency recovery period will be extended beyond the initial five (5) year period to ensure stability of delivery rates in the short term but to provide Heritage Gas with the opportunity to recover the return shortfall over a reasonable period of time. Heritage Gas would advise the NSUARB of any adjustments required to the approved delivery service rate or to the deficiency/recovery period.

(Exhibit N-3, Section 9, pp.1-3)

[69] As noted above, Heritage is requesting approval of a deferral account mechanism, a debt equity ratio of 55:45, and a 14% rate of return on equity (ROE) over the first five years of operation.

[70] Heritage did not address the specific details of the operation of the proposed deferral account in its application.<sup>12</sup> Under cross-examination by Counsel for Irving, Mr. Reeve made the following comment with respect to the details of the deferral account:

I would expect that those are things that we would deal with in a rate application where we would talk about the specific mechanisms of the deferral account, Mr. Chair.

(Transcript, October 10, 2002, p. 630)

[71] With respect to the requested ROE of 14%, Heritage's expert witness, Kathleen McShane, Senior Vice-President and Senior Consultant with Foster & Associates, a U.S. based consulting firm, testified that, in her opinion, a 14% ROE is reasonable. The following table shows the development of the proposed rate of return:

	<b>"Risk Adjusted"</b>
	<u>Return on Equity In %</u>
Government of Canada Long Bond Rate	5.75 - 6.00
Utility Equity Risk Premium	<u>3.75 - 5.50</u>
	9.50-11.50
Greenfield Risk Premium	<u>2.50 - 4.50</u>
Risk Adjusted Return on Equity	14.00%

(Exhibit N-3, Section 9, p.11)

<sup>12</sup>Transcript, October 10, 2002, p. 629

[72] Under questioning by Board Counsel, Ms. McShane explained the process she followed in determining whether 14% is an appropriate ROE for Heritage in this greenfield environment.

A. So, you have a base of market data for mature utilities which are publicly traded from which to make a relatively accurate estimate of the required rate of return on common equity. So, the base numbers here represent on the low end simply what the allowed returns have been in Canada. On the high end they represent effectively two things. One is the average allowed return in the US, which from the point of view of a potential investor would represent a perspective on the return available from an alternative investment in a mature utility, and it also represents, in my view, a relatively good estimate of what the required return for a mature Canadian utility is based on the types of analyses that I would normally do for a mature utility. The premium above the returns for mature utilities is more of a judgmental exercise inasmuch as there are no market data available for greenfield utilities. What we have are some more indirect measures of what the premium might be by reference to, for example, what other greenfield utilities are able to earn and by reference to what kind of a return I might be able to expect in -- for example, if I were looking at a portfolio of equities, what would I expect to earn from a portfolio of average-risk equities, would I require anything less or more from this kind of an investment? That's the type of information I would look at to determine what the differential would be between the mature utility return and what would be required to make an investment like this in a greenfield utility.

Q. And your conclusion with respect to that issue is that there's a range of between 250 basis points and 450 basis points?

A. Depending on what -- to what number you're adding that. In my opinion, if you -- you can't simply take the lower end of the range and add it to the 9 ½ percent and say that, "Well, this is a return that would be reflective of an equity requirement in a greenfield utility," because if you simply add those two numbers together, you're at a 12 percent return which there are a number of mature utilities in the US that I could invest in with stronger capital structures than I'm looking at here that I could get a 12 percent return in.

(Transcript, October 11, 2002, pp. 834-836)

[73] With respect to the proposed capital structure, Ms. McShane stated that:

In my opinion, there are different capital structures that might be just as appropriate as the 45 percent that has been proposed. Going back to first principles, there is a relationship between the rate of return on common equity and the level of capital -- of common equity. The common equity -- let me back up and make sure I said that correctly. There is a relationship between the level of common equity and the appropriate return on common equity. If the company had chosen to apply for a somewhat thicker common equity ratio, that certainly would have been, in my mind, appropriate. The typical common equity ratio for an LDC, a mature LDC, is around 50 percent in the US. Enbridge Gas, New Brunswick, has an allowed common equity ratio of 50 percent. There are a number of mature small utilities in Ontario which have allowed common equity ratios of 50 percent. There are both electric distribution

companies and a mature small LDC. If the company had chosen to have a somewhat thicker common equity ratio, then the offset to that would have been, in my view, a somewhat lower common equity return. But the combination of the 45 percent common equity ratio and the 14 percent return on equity is, in my view, reasonable, and is, at the same time, virtually identical to the combination that was approved in New Brunswick, which was a 13 percent return on common equity and a 50 percent common equity ratio.

(Transcript, October 11, 2002, pp. 862-863)

[74] Heritage made the following comments with respect to "risk":

There was discussion during the course of the hearing of the concept of "risk". Ms. McShane took a view of "risk" from the perspective of a potential investor. Such an investor might have considerably less "risk" should they choose to invest in a "bundle of equities" which might provide them only a marginally lesser amount of return with substantially less risk than an investment in a greenfield venture of this type.

A second manner in which to analyze the degree of risk inherent in this project is to consider the number of applicants or, more particularly, the lack of applicants, who have come forward seeking a natural gas distribution franchise in Nova Scotia. It is also significant that the previous franchise holder chose, for various reasons, to surrender its franchise. This would appear to be a highly unusual situation and one which highlights some of the difficulties inherent in the establishment and development of this greenfield market.

A final method of analysis of the risk involved in this project is to examine the particular approach adopted by Heritage. There is no question that it will be market driven and will not rely upon a "field of dreams" approach. The infrastructure will not be built in the hope that "they will come".

However, there is still substantial risk to Heritage. Included in that risk are the not inconsiderable costs of this proceeding. If Heritage is granted a franchise, it will then engage in an aggressive marketing campaign to build a market for its business. Co-ordinated with that marketing campaign will be the commencement of engineering so that infrastructure can be built as quickly as possible to ensure the rapid development of the system. While these may be referred to as so-called "soft" costs, they are substantial costs nonetheless. Moreover, it is of interest to note the experience of the previous franchise holder who was able to construct relatively little infrastructure and secure no distribution revenue, but is still reported to have incurred costs in the neighbourhood of \$50 million.

As previously noted, Heritage is in discussions with Sempra for the purchase of both its "hard" and "soft" assets in Nova Scotia. If those discussions are successfully concluded, Heritage will incur a significant cost - prior to signing up its first customers.

The business plan of Heritage requires it to persuade consumers of other energy sources to convert to natural gas. There is an inherent "conversion risk" to be borne by Heritage - i.e. consumers may not convert to natural gas at the rate or in the number contemplated by the business model. The rate of conversions may be impacted by factors totally outside the control of Heritage such as the relative price of natural gas as compared to fuel oil. Therefore the business plan of Heritage, while prudent, is still not without considerable risk.

In light of the foregoing, Heritage submits that a rate of return of 14% is appropriate within the context of this marketplace and submits that its proposed capital structure is reflective of the nature of the Nova Scotia market.



## 5.2 Submissions - Intervenors

[75] The Province indicated, in its closing submission, that it believes Heritage's proposed 8.75% debt cost during the first three to five years is reasonable. The Province also indicated that after reviewing Undertaking U-23, which contained a list of approved common equity ratios for Canadian local gas distribution companies (LDC's), it was satisfied that the proposed debt equity ratio is "...generally consistent with greenfield LDC's throughout the country."<sup>13</sup> The Province also notes that it has no conceptual objection to an initial deferral account. However, the Province does take issue with the proposed 14% ROE, noting that the approved ROE in New Brunswick is 13%, and also submits that:

The Province of Nova Scotia maintains that much has been done through regulatory change to reduce the overall business risk to a natural gas franchise distributor in this Province. For its part as well, Heritage Gas has taken significant steps towards reducing its "inherent risk". In support of this assertion, the Province would refer this Board to:

- a. The "Establish market. Then build" principle where Heritage Gas will only build infrastructure to "identified and committed markets";
- b. The initial targeting of commercial-institutional and industrial customers, which in the words of the company was designed to "ensure the financial success of Heritage Gas";
- c. The establishment of a "feasibility test" designed to ensure that build out of the system (even where there are committed customers) only occurs within areas of proven economic viability;
- d. The commitment of the Province of Nova Scotia to direct Fourteen Million (\$14,000,000.00) Dollars to assist in market development in all provincial franchise areas.

The Province acknowledges that even with the adoption of the foregoing principles and factors within the Heritage Gas business plan, there remains some degree of "inherent risk". However by its own evidence, Heritage Gas has referred to its application as "prudent", "conservative",

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<sup>13</sup>The Province, Closing Submissions, p. 18

"sensible" and "sustainable". The Province would also note that all of these references to the business plan were made by the applicant without the specific knowledge of what, if any, access their potential customers may have to the Gas Market Development Fund. As was acknowledged during oral evidence, a contribution to overall market development, in the provincial franchise areas, of \$14 million can only be characterized as substantial. On this basis alone, the Province of Nova Scotia submits that a return on equity in the order of 14% exceeds the reasonable greenfield risk premium adjusted rate of return required.

Furthermore, given the direct effect of the actual equity return on the burner tip price of gas, and ultimately the market penetration rates which it will draw, the Province submits that the Board must be cautious in its approval of a significant greenfield risk premium on equity. Clearly, at some point in time, adjusting the equity returns for the associated risk (due to the unknown market take up) becomes a "vicious circle" whereby further increasing the equity return to compensate for the unknown market penetration only serves to render the final product offering less attractive to customers.

Having regard to all of the foregoing, the Province respectfully submits that an appropriate rate of return on shareholder equity for the **initial five year period** of the Heritage Gas franchise is 13%. Heritage Gas confirmed that a five (5) year approved rate of return was acceptable and it would be appropriate for the Board to review the rate of return at the conclusion of that period. This comment was made by Mr. Dean Reeve in his examination by Commissioner Harris:

- Q. Yeah. I guess I'm wondering if there's any implicit regulatory compact, so to speak, between us as the regulator and you as the franchisee, if you're successful, that the rate of return continue at that level for some period of time.
- A. (Reeve) No. I think that, in fairness, Mr. Harris, **we've asked for that rate over the first five years and at that point I think it would be reasonable to sit down and see whether that's still appropriate**, whether you'd want to – the Board would want to incentivize [sic] us by taking some incentive based approach and saying, look, we think you can do some things better. The customer can win, the company can win. That's certainly the case, I think, in Alberta. And so there might be another – a number of mechanisms or reconsiderations that may be appropriate then. I wouldn't dismiss them at all.

(The Province, Closing Submissions, pp. 21-23 emphasis added)

[2] COHA, in its final submission, states that:

While COHA-NS recognizes that it is beyond the power of the Board to deny Heritage Gas access to the Fund, it is within the power of the Board to deny Heritage Gas' requested 14% rate of return, a return that includes a "risk premium". The risk premium is included despite the fact that the Nova Scotia government is contributing \$14 million toward conversions at no cost to Heritage Gas. This is also in spite of the fact that Heritage Gas will not lay a metre of pipe nor flow a gigajoule of gas without firm, signed commitments from customers, customers whom they will penalize if they ultimately decide not to use gas or choose to leave the system because they received poor service. COHA-NS respectfully requests that the Board deny Heritage Gas' request for a 14% return.

(COHA, Written Brief, p. 2)

[3] Strait, in its final submission, also takes issue with the proposed 14% ROE.<sup>14</sup>

### 5.3 Findings

[4] The Board finds that the proposed debt equity ratio of 55:45, and the proposed 8.75% for the cost of debt, are reasonable and approves them as proposed. The Board has some concerns regarding the details surrounding the nature of the proposed deferral account. It is unclear to the Board, even after a review of the evidence, which items are included in the deferral account for subsequent recovery from ratepayers. In fairness, Heritage acknowledged that its description of the deferral account was quite general and that details would be worked out in a future proceeding.

[5] The Board recognizes that Heritage has proposed a traditional cost of service model. The use of a deferral account is, evidently, not uncommon in other Canadian jurisdictions.

[6] The Board is not opposed, in principle, to the establishment of a deferral account. However, it does believe that this issue would be more appropriately dealt with at the Tolls and Tariffs hearing at which time Heritage would be expected to provide a detailed explanation of those costs proposed for inclusion; the manner in which the account would operate; the term of the deferral account; and other issues relating to the account.

[7] The Board has carefully reviewed the evidence presented by Heritage in support of the proposed 14% ROE. The Board finds that, on balance, the proposed rate is too high.

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<sup>14</sup>Strait, Final Submission, p. 20

[8] The Board certainly recognizes that there is significant risk in developing a natural gas distribution system in a greenfield environment. The Board believes that, in framing its application, Heritage has taken every opportunity to minimize this risk. The deferral account reduces Heritage's risk as does the application of the feasibility test. Heritage provides no assurance that it will build any part of its system, including its "base plan", without customer commitments to take gas. As noted during the hearing there are several terms used to describe the build-out of the system. They include initial system, gas delivery backbone, base system, initial development phase, etc. They all have a common denominator - without specific customer commitment, the system, however it is described, will not be built.

[9] In addition to the steps taken by Heritage to insulate itself from risk, the amendments to the **Act** and the **GIC Regulations** further lower the risk to a distributor. Heritage acknowledges that the ability to bundle gas sales with delivery is an important change in this regard. In addition, the decision by the Province to make \$14 million available to assist with customer conversions to natural gas from existing fuel sources reduces the risk involved in this venture.

[10] The Board believes that a 13% ROE is more reasonable than the requested 14% in these circumstances and, accordingly, reduces the ROE to 13%. The Board notes that the approved ROE and debt equity ratio will be subject to review at the conclusion of the five year initial period in any event and possibly earlier should circumstances warrant.

**Ontario Energy Board  
Application by Natural Resource Gas Limited  
Decision EB-2005-0544  
September 20, 2006**



**EB-2005-0544**

**IN THE MATTER OF** the *Ontario Energy Board Act, 1998*, S.O. 1998, c.15 (Schedule B);

**AND IN THE MATTER OF** an Application by Natural Resource Gas Limited, pursuant to section 36 (1) of the *Ontario Energy Board Act, 1998*, for an order or orders approving or fixing just and reasonable rates and other charges for the sale, distribution, transmission, and storage of gas as of October 1, 2006;

**BEFORE:** Gordon Kaiser  
Vice Chair and Presiding Member

Cathy Spoel  
Member

**DECISION WITH REASONS**

September 20, 2006

## **CAPITAL STRUCTURE AND COST OF CAPITAL**

NRG's proposed capital structure and cost of capital for the 2007 Test Year is detailed below:

### **Capital Structure – Cost of Capital<sup>7</sup>**

#### **2007 Test Year**

	<u>Capital</u>	<u>Ratios</u>	<u>Cost Rate</u>	<u>Return</u>
	<u>Structure</u>			<u>Component</u>
	(\$'s)	(%)	(%)	(%)
Long-term debt	6,406,924	66.10%	8.45%	5.58%
Short-Term Debt				
Operating Loan	0	0.00%	6.00%	0.00%
Unfunded Debt	(106,288)	-1.10%	6.00%	-0.07%
Common Equity	3,392,650	35.00%	10.20%	3.57%
Total	<u>9,693,286</u>	<u>100.00%</u>		<u>9.08%</u>

The main differences between the 2005 Test Year Board-approved Capital Structure and Cost of Capital, and NRG's proposal for 2007 are as follows:

- Equity ratio decreases from 50% to 35%
- Return on equity increases from 9.57% to 10.2%
- Long term debt ratio increases from 31.43 to 66.1%
- Long term debt rate increases from 8% to 8.45%
- Short term debt ratio decreases from 17.3% to a 1.1% credit
- Short term debt rate increases from 5.5% to 6%

<sup>7</sup> Exhibit 6, Tab 1, Schedule 1, Updated Evidence

Mr. Bristol testified as the Company's witness on NRG's proposed capital structure and return on equity. Ms. Kathleen McShane, of Foster Associates Inc., testified as the Company's expert witness. The purpose of Ms. McShane's testimony was to evaluate the reasonableness of NRG's proposed capital structure and to determine the risk premium for the utility. Ms. McShane's analysis and evaluation, Opinion on Capital Structure and Equity Risk Premium for Natural Resource Gas<sup>8</sup> concluded that for the 2007 Test Year, a 35% common equity ratio is reasonable and recommended that a 150 basis point premium be added to the return on equity amount as calculated using the Board's Guidelines on a Formula-Based Return on Common Equity for Regulated Utilities.

During cross examination Board staff explored three issues: (1) the possibility that a range of equity ratios could be appropriate, (2) the factors leading to changes to NRG's equity ratio that the Board considered in previous decisions, and (3) the role risk has in determining capital structure and rate of return.

Ms. McShane agreed that there is a range of acceptable equity ratios. A ratio within the range of 35% to 55% would be reasonable for a specific utility, given the appropriate common equity return for the utility. In the witness's opinion, the Board in previous decisions had approved increases in NRG's deemed equity ratio because the actual ratio had reached 50% and a 50% equity was reasonable for the level of business risk that NRG faced. With regard to the changed circumstances that would prompt a 35% equity ratio, Ms. McShane indicated that the company had re-financed and raised new debt, thereby establishing an actual common equity ratio of approximately 35%; and that 35% is appropriate to use because it is the actual ratio.

Mr Bristol's rationale for the change was that NRG had been prevented from issuing dividends (due to the Imperial Life Loan covenants) and that, given the low interest rates, the time was right to go to market to re-finance. He indicated that NRG cannot go to market repeatedly and noted that the new structure was good for ratepayers since it reduced NRG's revenue deficiency.

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<sup>8</sup> Exhibit E2, Tab 1, Schedule 1



Ms. McShane stated that NRG's risks, and those relative to other gas distributors, had not changed appreciably. The witness confirmed that if there had been a significant increase or decrease in business risk, then that should be reflected in a capital structure or equity return change. With respect to NRG's comparative risk with Enbridge Gas Distribution Inc. (EGDI), the witness concurred with the proposition that if the Board agrees that the business risk of NRG relative to EGDI has declined, then it would lead to a lower risk premium. The witness noted that, if NRG moves to a 35% equity ratio, there is no reason to believe that the overall cost of capital would be any different, assuming no material change in the business risk.

With respect to the proposed 150 basis point risk premium, Ms. McShane indicated that a 150 basis point risk premium was justified. Her conclusions were based on the consideration of three factors: the difference of cost of debt between the utilities, the impact of size on return (Ibbotson Study) and the equity return rate which under a different capital structure would result in an equivalent cost of capital, assuming no change in business risk.

Board staff questioned the witness's assumption that NRG's business and relative risk had not changed since the 1998 Test Year decision in which the Board approved a 50% equity capital structure and a rate of return on equity equivalent to Enbridge Gas Distribution Inc's.

The panel sought clarification regarding the witness's claims that (i) NRG's entire market and not just the agricultural sector, is riskier than Enbridge Gas Distribution Inc.'s, (ii) NRG's residential component is riskier because it is less diversified, more dependent on an agricultural base (iii) NRG doesn't have the diversity of employment that EGDI has, and (iv) the agricultural sector is more risky than industrial markets.

Ms. McShane acknowledged that she had not examined data supporting the conclusion that NRG's residential market is less diversified and also reiterated that her assessment of the market being more risky is based on the total market and not just the residential portion. The witness indicated that she didn't necessarily look at number of customers nor revenue to ascertain relative risk but rather looked at the gross margin attributable to the different customer classes and supported the proposition that the greater the

proportion of revenue or gross margin, that comes from residential customers, the less risky the market. The witness did not disagree with the proposition that replacing tobacco load with residential load, and all things being equal, would reduce the overall business risk.

In this regard, the Company filed Exhibit K 2.4<sup>9</sup> which provided comparative customer and market related information for NRG, Union Gas Limited and Enbridge Gas Distribution as set out below.

	<b><u>NRG</u></b>	<b><u>Enbridge</u></b>	<b><u>Union</u></b> <sup>10</sup>
<b><u>Residential Sector</u></b>			
Percent of Customers	91	91	90.5
Percent of Volumes	46	37.5	19
Percent of Gross Margin	70	60	59
<b><u>Commercial Sector</u></b>			
Percent of Customers	6	8.6	9
Percent of Volumes	14	40	13
Percent of Gross Margin	13	32	26
<b><u>Industrial Sector</u></b>			
Percent of Customers	3	0.4	0.5
Percent of Volumes	40	22.5 <sup>11</sup>	68 <sup>12</sup>
Percent of Gross Margin	17	8	15 <sup>13</sup>

Of these three breakdowns by customer class, the gross margin is the most indicative of the utilities' dependence on the industrial class. Note that the Union data are for in-franchise operations only. The industrial gross margin as a percent of the total, inclusive of storage and transportation revenues, is approximately 12%. Note also that the industrial data do not provide any insight into the diversification among industries.

Counsel for IGPC questioned Ms. McShane's reasoning for recommending a 150 basis point premium, despite the fact that in 1995 the Board had approved a 135 basis point premium, when in both cases the equity ratio is 35%, and NRG's risk has declined since that time. Ms. McShane responded that one could not make a direct comparison

<sup>9</sup> EXHIBIT K 2.4:

To Provide Figures for Revenue and Number of Customers for Residential as a Percentage of Total Revenue and Number of Customers for Enbridge Gas Distribution, Union Gas Limited and NRG; To Provide the Percentage of Gross Margin Coming from both Residential and Industrial Customers

<sup>10</sup> Excludes storage and transportation, which accounts for 20% of revenues

<sup>11</sup> Includes wholesale (Gazifere)

<sup>12</sup> Includes large commercial

<sup>13</sup> Includes large commercial

between the two situations and conclude definitively that it represented an increase in risk premium.

Board staff in its closing argument identified two issues for the Board's consideration. The first was whether the equity ratio should be reduced to 35% from its deemed 50%. The second was whether there should be an equity risk premium, and if so, what that premium should be.

Noting Ms. McShane's suggestion that the equity ratio can be between 35% and 55%, Board staff questioned whether deeming an equity ratio at the lower end of the range would impact NRG's ability to raise debt to finance the pipeline for the proposed ethanol plant.

Regarding the 150 basis point risk premium proposed by NRG, Board staff referred to expert witness testimony that small cap companies have greater risk than larger-cap ones and that business risk is related to size and diversity of market. Board staff noted that there is evidence indicating that NRG is similar to Union, on the basis of gross margin by rate class, and that NRG's exposure to the industrial class has declined from 17% to 11%. Board staff suggested that as residential load increases relative to the riskier industrial load, business risk should decline because the margin on residential load is twice that on industrial load.

Board staff also referred to previous decisions which could be of assistance to the Board. In RP-2002-0158<sup>14</sup> Union Gas Limited was granted a 15 basis points premium over EGDI and in EBRO 480<sup>15</sup> NRG was given a 50 basis point premium over Union. Board staff suggested that the appropriate premium for NRG should be around 65 basis points, the sum of 50 and 15.

Counsel for IGPC agreed with Board staff that a risk premium is warranted in the range of 60 to 75 basis points. Mr. Stoll indicated that the recent Bank of Nova Scotia loan and the growth in the number of residential customers suggested a stronger utility for which a

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<sup>14</sup> RP-2002-0158, In The Matter of Applications by Union Gas Limited and Enbridge Gas Distribution Inc. For A Review of the Board's Guidelines for Establishing their Respective Return On Equity, Decision and Order, paragraph 45

<sup>15</sup> EBRO 480, NRG Ltd., Decision, Section 6.5.19 and Appendix I, pgs. 5 & 6

150 basis point premium was not warranted. With respect to capital structure, Mr Stoll supported a 35% equity ratio.

NRG addressed two issues in its closing submission: capital structure and return on equity.

The first concerned the new cost of equity calculation proposed by NRG which assumed that NRG's risk had not changed appreciably relative to that of EGDI. Mr King submitted that NRG's relative risk had not changed materially. Although NRG's riskiest customers are forecasted to leave the system, the risk is only reduced if the "leaving" customers are replaced by new customers. Mr King noted that NRG's gross margin from the industrial sector is declining and that, as pointed out by Ms. McShane, Enbridge's and Union's industrial sector is more diversified than NRG's, and consequently less risky.

The second issue raised by NRG was the appropriateness of NRG's proposal to decrease the equity component of its capital structure from 50% to 35%. To the concern raised by IGPC that a low equity ratio will hinder NRG's ability to fund or obtain funding for any capital investments required to attach the new ethanol plant, counsel for NRG pointed to Mr. Bristoll's testimony that the company remains strong, post-refinancing, and that financing particulars would be addressed by the Board when the project plans are firmed-up. On the matter of the dividend pay-out, NRG noted that had it paid a dividend over the past 12 years, it would be in the same position as it is in today in terms of dealing with any funding requirements related to the planned ethanol plant.

### **Board Findings**

NRG in this application requested an equity ratio of 35%. The evidence shows that the actual equity ratio is 41.5%. This is the ratio that results after the Bank of Nova Scotia financing and the payment of \$2,038,581 to shareholders.

It is not clear why NRG was proposing 35% equity ratio except that the company's expert witness appeared to believe that was the actual ratio. The Board agrees with the principle that the actual ratio should be used unless the ratio is considered to be unreasonable. In the past, the Board has used a deemed equity ratio for NRG, but that

was on the basis that the actual equity ratio was unreasonable. In this case, the Board finds that the actual equity ratio of 42% is reasonable. It does reflect the fact that NRG is a more risky utility than Enbridge Gas Distribution and Union. However, the Board is convinced that the equity financing is a sound third-party financing and there is no basis for assuming that the actual ratio of 42% is unreasonable. Accordingly, the Board sets NRG's common equity ratio to 42% for the 2007 fiscal year.

With respect to the risk premium, NRG requested a 150 basis points equity risk premium over Enbridge Gas Distribution Inc. This Board in the past has allowed Union a 15 basis points risk premium<sup>16</sup> over Enbridge. The Board agrees that risk premiums are appropriate in certain cases. However, the Board does not see why NRG's risk premium should be ten times to what was approved for Union (15 basis points as compared to 150 basis points).

The position of Board staff and IGPC was that there should be some risk premium but that it should be in the range of 60 to 80 basis points.

It is important to note that if anything NRG's risk is declining. The Company's evidence indicates impressive growth figures. These include tripling the number of customers since 1991 and the forecast for 2007 indicates a strong growth in residential load. This is likely to replace in part the risky tobacco load which will reduce the risk that has dominated NRG's business in the past.

It is also significant that the Company has for the first time been able to secure arms length financing for all of its debt. And for the first time NRG has been able to obtain financing from a major financial institution, in this case the Bank of Nova Scotia. The amount of debt is almost twice the level of its previous long-term debt at an interest rate far lower than rates previously paid by NRG. This in itself goes a long way to reducing the risk of NRG as an operating utility.

For the reasons expressed above, the Board is of the view that a risk premium of 50 basis points over Enbridge Gas Distribution Inc. is justified. It should be noted that while

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<sup>16</sup> Decision and Order RP-2002-0158, Para 45

the Board has rejected the requested 150 basis points risk premium, it has increased the equity component from 35 to 42 percent which offsets this in part.

**Newfoundland and Labrador Board of Commissioners of Public Utilities  
Order No P.U. 19 (2003)  
Newfoundland Power**



*Newfoundland  
& Labrador*

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

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IN THE MATTER OF THE  
**2003 GENERAL RATE APPLICATION**  
FILED BY  
**NEWFOUNDLAND POWER INC.**

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**DECISION AND ORDER**  
**OF THE BOARD**

**ORDER No. P.U. 19 (2003)**

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**BEFORE:**

**Mr. Robert Noseworthy**  
**Chair and Chief Executive Officer**

**Ms. Darlene Whalen, P.Eng.**  
**Vice-Chair**

**Mr. John William Finn, Q.C.**  
**Commissioner**



challenge for the Board now is to set an appropriate ROE which will preserve this necessary balance.

**Having reviewed the evidence the Board is of the opinion that it is reasonable and prudent to maintain the capital structure deemed appropriate in Order No. P.U. 16(1998-99). The proportion of regulated common equity in the capital structure should not exceed 45%. Any regulated common equity in excess of 45% will only be entitled to a rate of return equal to the rate of return on preferred equity. For the purpose of determining the weighted average cost of capital (WACC), the Board accepts NP's proposed forecast average capital structure for the 2003 and 2004 test years.**

### **3. Return on Equity (ROE)**

NP has proposed that the Board allow a return on regulated common equity of 10.75% for ratemaking purposes. This ROE compares to 9.25% found by the Board in 1998, and 9.05% which is currently in place based on the Formula.

#### **i) ROE Tests**

The three standard methodological tests for determining ROE were applied by the experts in varying ways. The three tests can be generally described as follows:

- Equity Risk Premium Test - A forward looking test which measures ROE in terms of a risk-free rate, normally determined in relation to government guaranteed long-term bond yields plus a premium to reflect the added risk associated with investing in the common equity of an enterprise. The Capital Asset Pricing Model (CAPM) is a variation of this test weighted more toward measuring the market price of risk to account for such factors as interest rate change and economic growth.
- Discounted Cash Flow (DCF) Test – Measures ROE in terms of the present value of projected returns to the investor, both dividends and expected growth, discounted at an appropriate rate to reflect the risk associated with these returns.
- Comparable Earnings Test - Measures ROE in relation to the past earnings of comparable companies which are then used as a proxy for future returns of the utility being considered.

#### **ii) Application of Tests**

The following summary highlights the evidence of each expert witness in applying these cost of equity tests.

## Summary of Expert Evidence of Cost of Equity

### Ms. McShane (@ 45% Common Equity)

Test	Description of Evidence	Rate %
<b>Equity Risk Premium</b>		<b>10.5-11.25%</b>
(i) Risk-Free Rate	<ul style="list-style-type: none"> <li>30 year yield based on Consensus Forecasts using 10-year Canadas plus spread (est.) to account for yield differential.</li> </ul>	<ul style="list-style-type: none"> <li>6.0%</li> </ul>
(ii) Risk Premium	<ul style="list-style-type: none"> <li>3 tests conducted (incl. CAPM). Results (1) 4.0% @ beta 0.60-0.65%, (2) 4.75-5.0%; and (3) 4.6% - Updated 4.7%.</li> <li>Canadian and U.S. data used "Bare bones" cost of equity (i) + (ii)</li> </ul>	<ul style="list-style-type: none"> <li>4.0-4.75%</li> </ul>
(iii) Total ERP	<ul style="list-style-type: none"> <li>Add 50 basis points to reflect financing costs associated with other risk variables.</li> </ul>	<ul style="list-style-type: none"> <li>10.0-10.75%</li> </ul>
(iv) Other		<ul style="list-style-type: none"> <li>0.5%</li> </ul>
<b>Discounted Cash Flow</b>		<b>11.5%</b>
(i) DCF Rate	<ul style="list-style-type: none"> <li>2 DCF tests conducted with Results (1) 11.0 - 11.1% &amp; (2) 11.1% - Updated 11.5%.</li> <li>U.S. data used as proxy for NP.</li> </ul>	<ul style="list-style-type: none"> <li>11.0%</li> </ul>
(ii) Other	<ul style="list-style-type: none"> <li>Add 50 basis points for financing cost as above.</li> </ul>	<ul style="list-style-type: none"> <li>0.5%</li> </ul>
<b>Comparable Earnings</b>		<b>12.75-13.25%</b>
	<ul style="list-style-type: none"> <li>2 tests conducted using (1) Canadian industrials and (2) U.S. low risk industrials with emphasis on (1). Results as follows: (1) 12.75-13.25% and (2) 14%.</li> </ul>	
<b>Recommended ROE</b>		<b>11.5-11.75%</b>

### Dr. Morin (@ 45% Common Equity)

Test	Description of Evidence	Rate %
<b>Equity Risk Premium</b>		<b>10.5-11.0%</b>
(i) Risk-Free Rate	<ul style="list-style-type: none"> <li>Same as Ms. McShane above.</li> </ul>	<ul style="list-style-type: none"> <li>6.0%</li> </ul>
(ii) Risk Premium	<ul style="list-style-type: none"> <li>6 studies conducted (incl. CAPM) @ beta 0.67%. Results ranging from 4.4% - 6.1% and average 5.1%.</li> <li>Studies involve 2 aggregate stock market, 2 utilities and 2 regulators allowed risk premiums.</li> <li>Primarily U.S. data weighted toward Canada.</li> </ul>	<ul style="list-style-type: none"> <li>4.5 - 5.0%</li> </ul>
<b>Discounted Cash Flow</b>		<b>10.5 - 11.0%</b>
	<ul style="list-style-type: none"> <li>DCF used only to confirm ERP Results</li> </ul>	
<b>Recommended ROE</b>		<b>10.5-11.0%</b>

### Dr. Kalymon (@ 40% Common Equity)

Test	Description of Evidence	Rate %
<b>Equity Risk Premium</b>		<b>7.54-8.04%</b>
(i) Risk-Free Rate	<ul style="list-style-type: none"> <li>Spot bond yields for 10-year Canadas on December 17, 2002 coinciding with the date of his pre-filed evidence submission.</li> </ul>	<ul style="list-style-type: none"> <li>5.04%</li> </ul>
(ii) Risk Premium	<ul style="list-style-type: none"> <li>For 1981-2001 negative risk premium of equities on TSX index. Incompatible with risk theory. Reversed to positive by removing capital gains on 10 year Canada. Real rate of bond interest adjusted upward to reflect increased risk of average company on TSX.</li> </ul>	<ul style="list-style-type: none"> <li>2.5 - 3.0%</li> </ul>
<b>Discounted Cash Flow</b>		<b>7.10-9.85%</b>
	<ul style="list-style-type: none"> <li>Alternative DCF based on growth in dividend yield and earnings/book value.</li> <li>2 tests conducted. Results (1) utility 7.10 - 8.60% and (2) industrials 8.41 - 9.85%.</li> </ul>	
<b>Comparable Earnings</b>		<b>7.72-9.84%</b>
	<ul style="list-style-type: none"> <li>2 tests conducted with adjustments for market to book ratios Results (1) industrials 7.72-8.82% and utilities 7.93 - 9.84%.</li> </ul>	
<b>Recommended ROE</b>		<b>8.5- 9.0%</b>

**iii) Reliance on Tests**

In Order No. P.U. 16(1998-99), the Board relied principally on the equity risk premium in establishing the appropriate return on regulated common equity and ordered its use in the Formula.

All three cost of capital experts presented evidence on the equity risk premium test.

Ms. McShane completed all three tests, including the DCF and comparable earnings tests and assigned some weight to each test in making her recommendation. (Pre-filed Evidence, Ms. K. McShane, pg. 64/18-20)

Dr. Morin concentrated primarily on the equity risk premium test while using the DCF test only in support of his equity risk premium recommendation. Dr. Morin noted in his evidence the DCF and comparable earnings methodologies are particularly difficult to implement in practice when you are dealing with the fast-changing and fluid circumstances of the Canadian utility industry and the scarcity of reliable capital market data on comparable companies. In addition, Dr. Morin pointed to other conceptual and methodological difficulties in applying the comparable earnings method. (Pre-filed Evidence, Dr. R. Morin, pg. 14/23-26; pg. 17/13-28)

Dr. Kalymon conducted all three tests while applying variations to the traditional DCF and comparable earnings tests. Dr. Kalymon observed the outcomes of different tests provide a wide range of results reflecting extreme volatility in the general equity markets in recent years. For this reason and given the experience of stable bond yields, Dr. Kalymon placed greater reliance on the equity risk premium test and the results of the utility sample in presenting his ROE recommendation. (Pre-filed Evidence, Dr. B. Kalymon, pg. 41/24-25; pg. 42/1-6) Dr. Kalymon did indicate, however, that other test results lead to an upward push to his primary equity risk premium outcomes in reaching his recommended ROE. (Transcript, March 26, 2003, pg. 159/1-15)

The equity risk premium test received primary weighting by the expert witnesses, with other tests demonstrating certain difficulties either with their methodology, application or outcomes. The Board notes that Ms. McShane's DCF and comparable earnings tests were both higher than the upper range of the equity risk premium test and, when applying all three tests, produced a bias in her recommended ROE beyond that sought by NP. The Board is also persuaded by the fact that the equity risk premium test is anchored in the bond market which has demonstrated significantly greater stability in recent years as compared to the equity market. The Board believes, in the absence of evidence which would warrant change, consistent decision making conforming to existing practices promotes a more reliable and stable regulatory environment with less risk. The continuity of the equity risk premium test also has added relevance to the automatic adjustment formula which is considered later in this Decision

**The Board will continue to rely principally on the equity risk premium test and will determine a return on regulated common equity primarily with a view to establishing a risk-free rate based on long-term Government of Canada bond yields plus an appropriate risk premium.**

**iv) Equity Risk Premium Test**

Risk-Free Rate

In relying on the equity risk premium test in 1998, the Board established the risk-free rate with reference to the yield on long-term 30-year Government of Canada bonds. The Board determined that 5.75% was an appropriate forecast of the long-term bond rate to be used in setting the risk-free rate. In concert with this decision, the Board similarly ordered that long-term (30-year) Government of Canada bonds be used as the basis for setting the risk-free rate to be applied to the equity risk premium model in introducing the automatic adjustment formula.

Dr. Morin and Ms. McShane based their risk-free rate on a forecast of 30-year bond yields derived from the Consensus Forecast of 10-year Canada bonds plus an allowance for an observed spread between 10-year and 30-year Canada bonds. Both experts used August 2002 Consensus Forecasts which anticipates that the 10-year yield 3-months and 12-months hence will be 5.3% and 6.0% respectively, for an average of 5.65%. Dr. Morin and Ms. McShane concurred on an estimate of 35 basis points as reflecting the recent and historic spread between 10-year and 30-year Canadas which, when added to the 5.65%, provides a 6.0% long-term yield and represents a reasonable forecast on the risk-free rate for the 2003 test year. (Pre-filed Evidence, Dr. R. Morin, pg. 44/5-15; Ms. K. McShane, pg. 44/15-23)

Ms. McShane indicated Consensus Forecasts would bring to bear the judgment of forecasters in predicting future long-term bond rates as opposed to actual which are subject to greater cyclical variation. (Transcript, March 25, 2003, pg. 81/7-25)

Dr. Morin suggested stability is enhanced by substituting Consensus Forecast on long-term Canada bonds instead of actual. (Transcript, March 24, 2003, pg. 81/5-8)

Dr. Kalymon selected a risk-free rate of 5.04% which equates with the spot bond yields for 10-year Canada bond rates coincident with the date of his pre-filed evidence. (Pre-filed Evidence, Dr. B. Kalymon, pg. 25/6-7)

NP indicated the recommended risk-free rate proposed by Dr. Morin and Ms. McShane is the method used by the National Energy Board (NEB) and the British Columbia Utilities Commission (BCUC). (Written Submissions, NP, Section C, pg. 29/5-8)

The Consumer Advocate indicates Ms. McShane and Dr. Morin overstate long-term Canada bond rates at a forecast 6%, when actual 30-year rates are only 5.55%. (Final Submission, Consumer Advocate, pg. 45)

In accepting the 6.0% risk-free rate and Consensus Forecast method proposed by NP, the Board would be effectively abandoning its present automatic adjustment formula in favour of the NEB or BCUC model or some variation thereof. Based on the comparison shown in BVP-17, pg. 5 and the evidence during the hearing assessing the performance of each formula, the Board is not convinced that either the NEB or the BCUC model demonstrates sufficiently superior operating characteristics to warrant a change in formula methodology. Depending on the

assumptions, it could be argued that the existing Formula methodology actually out-performed either or both of these proposed alternatives. The Board also expresses concern with the notable spread which would have to be factored into the formula between Consensus Forecast and actual long-term Canada Bond yields. The Board believes that greater regulatory stability and consistency is encouraged by retaining the existing methodology and linking the risk-free rate to actual 30-year bond yields.

For additional guidance in determining the appropriate risk-free rate using actual long-term 30-year Canada Bond yields, the Board turned to various references, as follows:

	References	Description	Rate
1.	Pre-filed Evidence, Ms. K. McShane, Schedule 4	Average long-term Canada yield 1999-2002	5.75%
2.	Final Argument, Consumer Advocate, pgs. 30-31	Spot yield	5.55%
3.	Transcript, March 24, 2003, pg. 137/22	Spot yield	5.62%

The Board determines a risk-free rate of 5.60% is fair and reasonable.

**The Board will utilize 5.60% as the forecast of the risk-free rate to be applied in the equity risk premium test for the test years 2003 and 2004.**

#### Equity Risk Premium

In 1998, in applying the equity risk premium test, the Board determined a risk premium of 3.00%, based on a market risk premium of 5.00% and a relative risk factor of 0.6.

Ms. McShane conducted three equity risk premium tests using a combination of U.S. and Canadian data. The Capital Asset Pricing Model (CAPM) resulted in a market risk of 6.0% - 6.5% and a relative risk factor or beta of 0.6 - 0.65 for a risk premium of an average Canadian utility similar to NP of 4.0%. The remaining tests produced risk premiums of 4.75% - 5.0% and 4.6% (updated to 4.7%). Ms. McShane's risk premium recommendation was 4.0% - 4.75%.

Ms. McShane added 50 basis points to what she refers to as the "bare-bones" cost of equity to cover financing flexibility. This adjustment according to Ms. McShane is designed to allow for 3 distinct elements: (1) flotation costs relating to costs upon sale of the new equity; (2) a cushion for unanticipated capital market conditions; and (3) a recognition of the fairness principle between book and market value of stock when comparing regulated utilities with sample industrials. Ms. McShane suggested that to ignore these principles in setting an appropriate financing flexibility adjustment is to ignore the basic premise of regulation. (Pre-filed Evidence, Ms. K. McShane, pgs. 53-54)

Dr. Morin performed six tests which also included a CAPM and an empirical CAPM. Applying a beta of 0.67 to a market risk of 6.7% resulted in risk premiums of 4.5% and 5.0% respectively. These multiple tests used primarily U.S. data and resulted in a risk premium ranging from 4.4% - 6.1% with an average of 5.1%. Weighing this average in favour of the

Canadian data, Dr. Morin concluded a risk premium for NP of 4.5% - 5.0% was reasonable. Dr. Morin made no adjustment to account for financing flexibility.

Dr. Kalymon's risk premium is predicated on his analysis that during 1981-2001 the TSX had realized negative risk premium when compared to long-term Canada bonds. This result, Dr. Kalymon commented, is inconsistent with conventional risk theory but can occur in highly fluctuating markets. Dr. Kalymon reversed to a positive risk premium of the TSX Index by removing the capital gain of bondholders. Following a calculation of the real rate of interest on 10-year Canada bonds at 2.74% (5.04% risk-free rate less 2.3% inflation) and, given equity investment is more risky than bonds, Dr. Kalymon anticipates an average company trading on the TSX should expect a risk premium of 2.50% - 3.00%. Dr. Kalymon concluded no relative risk or beta adjustment is necessary for NP. (Pre-filed Evidence, Dr. B. Kalymon, pgs. 22-28) Dr. Kalymon made no adjustment to his risk premium test but did make a downward revision of 50-100 basis points to both his other tests, DCF and comparable earnings, to account for the lower risk of the regulated versus his industrials sample. (Pre-filed Evidence, Dr. B. Kalymon, pgs. 32/6-7; 34/17-18; 38/11-12)

NP argued the risk premiums derived by Dr. Morin and Ms. McShane are based on long-term economic studies of the differences in actual returns on equity compared to yields on long-term government bonds. NP suggested Dr. Kalymon's equity risk premium approach exercises more subjective judgment than economic theory. (Written Submissions, NP, Section C, pg. 29/13-22; pg. 30/1-5)

The Consumer Advocate submitted both Dr. Morin's and Ms. McShane's recommendations should be rejected as their tests contain primarily U.S. data and their recommendations are considerably higher when compared to regulatory awards in Canada. The Consumer Advocate disputed the subjective characterization of Dr. Kalymon's evidence, citing a 100-year study as a satisfactory alternative determination of the risk premium test. (Final Submission, Consumer Advocate, pgs. 41-45; Transcript, April 25, 2003, pg. 79/5-11)

### Financing Costs

Before making a determination on the equity risk premium, the Board is of the view that consideration of the issue of financing flexibility is necessary. The Board notes only Ms. McShane recommended a 50 basis point adjustment for financing flexibility. Despite NP's contention in its written submissions (Section C, pg.17), as indicated above Dr. Kalymon did not make an allowance for financing but adjusted the DCF and comparable earnings test downward by 50-100 basis points to reflect the lower risk of a regulated utility versus his industrials sample. The Board acknowledges that financing costs were incorporated in Order No. P.U. 16(1998-99). The Board believes this regulatory practice varies depending on jurisdiction and notes the Ontario Energy Board in CA-535 (Attachment B) provided for flotation costs whereas in its recent decision 2002 NSUARB 59, the Nova Scotia Utility and Review Board did not make such a provision. (Final Submission, Consumer Advocate, Appendix 2) While limited evidence was brought before the Board concerning financial flexibility, the Board observes 2 of the 3 cost of capital experts made no such allowance. The Board is of the opinion its application introduces a further measure of subjectivity in setting ROE. The Board believes the issue of financing costs are best considered within the context of the equity risk premium.

**The Board will make no adjustment to the equity risk premium test for financing costs.**

### Equity Risk Premium

From an empirical standpoint, Dr. Morin explained that allowed risk premiums expand when interest rates go down and shrink when interest rates go up. This relationship he noted is indicative of the capital market response which is built into the testing process of examining allowed returns. (Transcript, March 24, 2003, pg. 119/13-19) In addition, the Board observes that this relationship has been reflected in historical trends between long-term interest rates and risk premiums in both Canada and the U.S. This trend is also consistent with the findings of the Board following its review of the impact of market conditions on pg. 35 of this Decision.

In considering the appropriate risk premium, the Board highlights the following:

- The investment risk of NP is average overall;
- Long-term bond rates and inflation are anticipated to remain relatively stable;
- A capital structure of 45% equity and 55% debt has been supported by the Board;
- Higher risk premiums allowed in the U.S. bear no discernable relationship to NP and the focus of the Board will be on allowed risk premiums of comparable Canadian utilities; and
- No separate financing costs are being considered.

In light of the above, the Board is of the view that the recommendation of Dr. Kalymon for an equity risk premium of 2.50% - 3.00% is too low. Dr. Morin recommended a risk premium of 4.5% - 5.0% while Ms. McShane recommended a risk premium of 4.0 - 4.75% while later adjusting for financing flexibility of 50 basis points. The Board concludes these are somewhat high.

The Board deems an equity risk premium of 4.15% to be fair and reasonable.

**The Board will incorporate a risk premium of 4.15% in the equity risk premium test in calculating the cost of common equity.**

### v) ROE Summary

The Board summarizes its findings in respect of the equity risk premium test as follows:

Risk-Free Rate	5.60%
Risk Premium	<u>4.15%</u>
	9.75%

**The Board will utilize a return on regulated common equity of 9.75% for the purposes of determining the WACC for both 2003 and 2004.**

**Newfoundland and Labrador Board of Commissioners of Public Utilities  
Order No. P.U. 14 (2004)  
Newfoundland and Labrador Hydro**





*Newfoundland  
& Labrador*

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

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IN THE MATTER OF THE  
**2003 GENERAL RATE APPLICATION**  
FILED BY  
**NEWFOUNDLAND AND LABRADOR HYDRO**

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**DECISION AND ORDER**  
**OF THE BOARD**

**ORDER No. P.U. 14 (2004)**

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**BEFORE:**

**Mr. Robert Noseworthy**  
**Chair and Chief Executive Officer**

**Ms. Darlene Whalen, P.Eng.**  
**Vice-Chair**

**Mr. G. Fred Saunders**  
**Commissioner**

The Board finds insufficient justification at this time to warrant treatment of NLH comparable to an investor owned utility for purposes of setting its financial targets. The onus is on NLH in future applications to clearly demonstrate through its operations and financial plans how it will achieve financial targets similar to an investor owned utility and what impacts this will have on its customers. The Board will continue to recognize NLH as a Crown owned utility afforded the benefit of a debt guarantee provided by its shareholder, Government, which sustains NLH's access to the capital markets.

#### 4. Return on Equity

NLH's proposed revenue requirement for the 2004 test year comprises a return on equity (ROE) of 9.75%, amounting to \$18,674,000. (Revised Evidence, J.C. Roberts, Schedule II, Oct. 31, 2003) Mr. Wells explained that, in order to expedite this issue, NLH is proposing the same ROE of 9.75% that was recently approved for NP. (Revised Evidence, W. E. Wells, Aug. 12, 2003, pg. 22/16-22; PUB-85, pg. 1/6-9)

NLH's regulated return on average common equity for the period 2000-2004 is as follows:

<b>Regulated Return on Average Common Equity</b>					
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003(F)</b>	<b>2004(F)</b>
<b>Regulated Return on Common Equity (%)</b>	2.10	4.44	4.03	-3.77	9.56

F – forecast

Source: (Grant Thornton's 2003 General Rate Hearing Report, pg. 14/15-28)

It is noteworthy that NLH's actual ROE for 2002 was in fact higher at 4.03% than the 3% ROE which was accepted by the Board in Order No. P. U. 7(2002-2003). The 2003 forecast shows an ROE of -3.77% primarily attributable to Granite Canal and power purchase contracts coming onstream. NLH's requested 9.75% ROE for the 2004 test year has been reduced to 9.56% as shown above to enable comparison with prior years. This calculation is outlined in NP-5 and primarily reflects the fact that NLH does not earn an ROE from rural assets.

The evidence summarizing the position of the cost of capital experts concerning ROE is outlined on the following page.

<b>COST OF CAPITAL - EXPERT EVIDENCE</b>			
	<b>Ms. McShane</b>	<b>Dr. Kalymon</b>	<b>Dr. Waverman</b>
<b>Business Risk</b>	- NLH faces no less business risk than the typical investor owned electric utility in Canada, including NP. (Pre-filed Evidence, pg. 13/9-11)	- Business risk of NLH has not changed materially from the last hearing and is similar to other electrical utilities such as NP (Pre-filed Evidence, pg. 10/21-24)	- NLH faces many of the same business risks (i.e., weather, the economy, the price of inputs, etc.) that confront IOUs. (Pre-filed Evidence, pg. 9/23-24)
<b>Financial Risk</b>	- Debt guarantee transfers to the guarantor (in this case the Province) much of the financial risk associated with the debt to NLH, thus permitting it to operate with a higher debt ratio than a stand-alone utility. Assumes a stand-alone capital structure (i.e. no debt guarantee) of 60/40 in determining ROE. (Pre-filed Evidence, pgs. 14/1-9; 21/15)	- Capital structure risk of NLH continues to be very high but with Provincial guarantee the financial risk is limited to Provincial credit level. Deemed capital structure of 60/40 used to calculate ROE. (Pre-filed Evidence, pg. 13/6-13)	- NLH does not have common stock equity investors and does not face the risk with these investors borne by IOUs. (Pre-filed Evidence, pg. 9/24-29) - Other factors that tend to lower the costs and risks for NLH include the debt guarantee, tax-exempt status and Crown corporation (Pre filed Evidence, pgs. 11/16-25; 12/1-6)
<b>Total Risk</b>	- Total risk of NLH comparable to NP. (Transcript Dec. 3, 2003, pg. 124/1-6)	- Overall risk of NLH comparable to average utility and below NP. (Pre-filed Evidence, pg. 13/11-13)	- Debt investors in NLH bear less risk than common shareholders in IOUs meaning that WACC which utilizes an IOU proxy group's costs of common equity for NLH's retained earnings would result in rates for NLH's customers that contain capital charges in excess of NLH's costs. (Pre-filed Evidence, pg. 12/7-12)
<b>Debt Guarantee Fee</b>	- Total compensation to the debt guarantor should be no greater than if NLH was financed on a stand-alone basis. (Pre-filed Evidence, pg. 21/6-7)	- The guarantee fee of the Province is not excessive if recognition is given to the fact that a portion of the fee is providing compensation for the implicit equity investment. (Pre-filed Evidence, pg. 16/11-13)	- 1% guarantee fee can be recognized either as an interest expense (preferred by Dr. Waverman) or part of the opportunity cost of capital but not both. (Pre-filed Evidence, pg. 15/16-23; Transcript, Jan. 16, 2004, pgs. 179/1-25; 180/1-19)
<b>Shareholder's Equity</b>	- The equity funds reinvested in NLH by the Province have an opportunity cost. The Province (and taxpayers as shareholders) should expect to earn a return on the equity funds reinvested in NLH equivalent to the return they could have earned on an alternative investment of comparable risk. (Pre-filed Evidence, pg. 24/21-25)	- Given a deemed 40% equity, the Province is entitled to earn an ROE similar to that of other companies of similar risk. (Pre-filed Evidence, pg. 14/8-10)	- NLH, a Crown corporation, has no common stock equity and the Province's citizens are its ultimate "owners". Compensating these owners simply means raising through regulated rates funds sufficient to maintain operations and satisfy: (1) the interest obligations on the outstanding guaranteed debt; and (2) the opportunity cost of the Province's citizens (as represented by the marginal cost of the Provincial guaranteed debt) for the shareholder's equity portion of the capital structure. (Pre-filed Evidence, pg. 5/13-21)
<b>ROE Methodology</b>	- 3 standard regulatory tests: 1) Equity Risk Premium 2) Discounted Cash Flow 3) Comparable Earnings. (Pre-filed Evidence, pg. 25/1-7)	- 3 standard regulatory tests: 1) risk premium method; 2) adjusted comparable earnings 3) discounted cash flow (Pre-filed Evidence, pg. 18/7-12)	- Focus on cost standard where comparison of NLH and IOU capital costs are irrelevant. (Pre-filed Evidence, pgs. 7/28-29; 8/1-2) - Uses existing capital structure reflecting actual balance of debt to retained earnings (Pre-filed Evidence, pg. 8/23-25) - ROE equals embedded cost of NLH's outstanding provincial guaranteed debt (if not allowed as interest expense) plus the opportunity cost of shareholder's equity (retained earnings) at the marginal cost of new provincially guaranteed debt. (Pre-filed Evidence, pg. 3/6-15)
<b>Recommended ROE</b>	- <b>11.0 to 11.25%</b> (Transcript, Dec. 3, 2003, pg. 45/2-3)	- <b>8.5 to 9.0%</b> (Transcript, Dec. 4, 2003, pgs. 8-9)	- Long-term opportunity cost of new debt to NLH. Dr. Kalymon indicated as <b>5.83%</b> ; accepted by Dr. Waverman. (Transcript, Dec. 4, 2003, pgs. 3/18-19; 58/14-21)

NLH explained that its request for a 3% ROE in its 2001 general rate hearing was intended to apply only for a limited time to address what was thought to be a temporary issue of adjusting base rates to reflect higher fuel costs. NLH indicated it cannot compromise the utility's financial integrity by continuing at a rate of return that was recognized by all to be well below market and well below what NLH is entitled to earn under current legislative provisions. (Final Argument, NLH, pg. 47/13-20) NLH argued that following a review of the relevant risks, NLH faces no less business risk than the typical investor owned utility in Canada, and noted Dr. Kalymon reached a similar conclusion. NLH again reiterated Ms. McShane's evidence that, in light of the sensitivity of the ROE to the capital structure, the debt cost and the guarantee fee, the equity return for NLH should be set at a level no less than that applicable to an average risk Canadian utility. In order to expedite resolution of ROE in this application, NLH requested a return on common equity of 9.75%, the same as recently allowed by the Board in Order No. P. U. 19(2003) for NP, an investor owned utility.

While not taking issue with Government's policy to subsidize rural rates, the CA argued that Government, as shareholder of NLH, should not receive a 9.75% (\$19,000,000) ROE at the same time as ratepayers are expected to pay for the \$41,000,000 rural deficit. The CA submitted that Section 3(a)(iii) of the *EPCA* creates a redundancy in allowing a utility to charge electricity rates sufficient to enable it to earn a return for the purpose of maintaining a sound credit rating when, in actual fact, NLH's sound credit rating is established by other means, namely the Government guarantee and NLH's consolidated financial parameters. The CA also submitted that when assessing NLH's appropriate range of ROE the Board should consider the fact that NLH's shareholder, Government, is entitled to collect a 1% guarantee fee amounting in the 2004 test year to \$14,500,000. The CA noted this combination of the revenue required for the guarantee fee of \$14,500,000 plus the 9.75% ROE of \$19,000,000 equals an estimated \$34,000,000, or 16% of NLH's total equity of \$206,000,000. While not the total return per se, the CA claimed it provides some perspective on the level of return being received by the shareholder. The CA concluded there is no justification in the evidence for the Board to increase NLH's 3% ROE allowed in Order No. P. U. 7(2002-2003). Alternatively, the CA indicated if the Board decides NLH should be treated as an investor owned utility, then Dr. Waverman's approach should be accepted or, if not, Dr. Kalymon's evidence is preferred over that of Ms. McShane. (Final Submission, CA, pgs. 9-16)

NP submitted NLH maintains a sound credit rating and has appropriate interest coverage for its capital borrowing requirements. NP observed the Board should consider the degree to which it is appropriate to reduce NLH's ROE below normal returns in order to incent NLH to develop and implement a sound financial plan in the long term interests of the consumers of the province. NP suggested NLH will have time to develop a sound financial plan before its next general rate application. NP argued the Board will have to exercise its judgement in setting an appropriate ROE, taking into consideration the financial return to Government from the guarantee fee and the social policy benefits directed by Government through NLH's operations. NP concluded this is not simply a matter that can be determined on a mathematical basis from the evidence. (Brief of Argument, NP, pgs. C-18 to C-19)

The IC argued it is inappropriate for the Board to grant NLH a rate of return comparable to an investor owned utility. The IC submitted the intent of the legislation is served by allowing

sufficient interest coverage to ensure NLH's debt is self-supporting and that is the appropriate test to apply to a government owned utility which does not operate like an investor owned utility. The IC explained that NLH rationalized the 3% rate of return requested in 2001 in terms of limiting rate shock arising from increases in the range of 17% and suggested a similar finding is justified today when increases range from 22-29% for the IC. The IC observed the only real market the Board need consider relative to NLH's credit rating is the debt market since NLH issues no equity. Given that NLH's debt continues to be self-supporting and access to the capital markets is ensured through the provincial guarantee, the IC concluded it is difficult to justify anything more than the existing 3% ROE, particularly in light of the legislative directive to seek lowest cost electricity. The IC recommended the 3% ROE remain in place. Should the Board decide to evaluate a "*market risk*" for NLH as if it were a traded company, the IC maintained NLH's relative operating risks are minimal and manageable since NLH is a non-taxable entity and is afforded various protections through the RSP. The IC further indicated NLH's financial risk is essentially non-existent given the Government guarantee and the lack of competition. The IC concluded that appropriate adjustments to ROE should be made to reflect, among other things, NLH's lower risks and the non-taxability of the shareholder. (Written Argument, IC, pgs. 7-11)

In summarizing the evidence Board Hearing Counsel noted all three experts agreed that setting a fair return was a question of determining NLH's cost of capital. Board Hearing Counsel observed that while all three experts agreed that NLH should be compensated for its interest obligations on embedded debt and the opportunity cost of its retained earnings, there was a difference in opinion concerning how to measure the opportunity cost of those retained earnings. Board Hearing Counsel noted Ms. McShane and Dr. Kalymon both submitted the opportunity cost of the retained earnings should equal what a common stock investor would earn in a similar risk enterprise, while Dr. Waverman suggested it equals the cost to NLH of issuing new debt. Board Hearing Counsel commented that the methodology used to determine NLH's cost of capital must ultimately have a rational basis and, to this end, the Board must be satisfied that the approach as suggested by an expert is based on accepted and conceptually correct principles of financial theory and utility rate making. Board Hearing Counsel concluded that if the Board finds it is not appropriate to treat NLH as an investor owned utility, it may wish to consider employing Dr. Waverman's approach as a suitable interim measure for determining the cost of capital. Board Hearing Counsel further concluded this methodology can be revisited if and when NLH demonstrates to the satisfaction of the Board it can be treated as an investor owned utility. (Final Submission, Board Hearing Counsel, pgs. 5/4-5; 6/12-23; 7/1-6)

None of the options presented by the cost of capital experts were the recommended first choice of any of the parties. While NLH essentially adopted Ms. McShane's methodology into evidence, its proposal of 9.75% was considerably below the 11-11.25% recommended by Ms. McShane. For purposes of expediting the decision in this Application, NLH proposed an ROE equivalent to that recently approved for NP in Order No. P. U. 19(2003). Both the CA and the IC recommended no change in NLH's existing 3% ROE, with the CA arguing in favour of Dr. Waverman's approach as a preferred second choice over that of his own expert, Dr. Kalymon. NP indicated the Board should exercise its regulatory judgment in setting an appropriate ROE for NLH. Board Hearing Counsel suggested Dr. Waverman's evidence may be considered by the

Board as a possible interim determination pending NLH justifying an ROE equivalent to that of an investor owned utility.

As previously determined, NLH has not proven it should be treated as an investor owned utility and the Board finds it is not entitled to an ROE comparable to an investor owned utility. The Board does not concur it should assess ROE for NLH as an investor owned utility when it finds that other appropriate measures of an investor owned utility are not being observed by NLH. For a utility to be treated as an investor owned utility for the purposes of ROE, its operating and financial practices should be appropriately established, properly integrated and consistently applied similar to an investor owned utility. The Board does not accept as sound regulatory practice allowing a utility to invoke one investor owned measure (i.e. market driven ROE) and then allowing it to operate differently with respect to a related measure (i.e. capital structure). As noted previously, the Board believes moving to a self-supporting capital structure is in the best interest of NLH and its ratepayers in contributing to fair and stable electrical rates.

NLH further argued ROE should be determined in relation to utilities of similar capital structure and similar risks. The Board acknowledges all three cost of capital experts agreed that both NLH and NP are exposed to some of the same business risks. In addition, all three experts viewed the financial viability of NLH to be currently dependent on the Government guarantee. Assuming a 60/40 capital structure for NLH, Ms. McShane concluded the total risk of NLH was comparable to NP and Dr. Kalymon concluded that it was below that of NP. Dr. Waverman argued NLH does not have common equity stock, and other factors such as NLH's debt guarantee and tax-exempt status tended to lower financial risks for NLH compared to an investor owned utility. The IC cited some of these same reasons in arguing that NLH's operating and financial risk was nominal in comparison to an investor owned utility.

The Board agrees that NLH must operate in a financially self-supporting manner with regard to revenues and expenses so as to cover its interest costs and not impair the bond rating of the Province, thereby impairing its own bond rating. The Board also concurs with the view that NLH and NP have similar business risk but is not persuaded that NLH's total risk is comparable given NLH's reliance on the Government guarantee in sustaining its creditworthiness. The Board notes this dependence on the provincial guarantee has become even more acute since Order No. P. U. 7(2002-2003) in light of NLH's deteriorating capital structure. No specific adjustment to NP's 9.75% equivalent ROE was presented to the Board to account for diminished total risk.

Both the CA and NP referred to the need for the Board to take into account social policy benefits and the guarantee fee in considering the financial return to the shareholder, Government. Indeed the unconditional provincial guarantee and the ability of Government to direct NLH in matters of public policy were previously identified as two distinct differences between NLH and an investor owned utility. The CA observed that the \$41,000,000 rural deficit, the \$14,500,000 debt guarantee fee and the \$19,000,000 (9.75% ROE) are all revenues that arguably link to NLH's shareholder, Government, that NLH is seeking to collect from ratepayers in this Application. NP argued the guarantee fee and social policy benefits are directed by Government through NLH's operations and the Board should exercise regulatory judgment on those items in setting an appropriate ROE for NLH.

NLH observed the issue of the impact of the rural deficit on ROE was not covered by witnesses in this hearing but was referenced in its 2001 general rate hearing by various witnesses who expressed the view at that time that the rural deficit and social policy should not influence the ROE although it may impact other things such as rate design issues. NLH maintained the issue of the guarantee fee has been covered before and found by the Board to be a fee for service and should not affect ROE. (Transcript, Jan. 16, 2004, pgs. 41/17-25; 42/1-4)

The Board has already determined the guarantee fee to be a legitimate expense of NLH as requested in its Application. The Board accepts Dr. Waverman's evidence that the guarantee fee can either be recognized as an interest expense or part of the opportunity cost of capital, but not both, since it would be double counting with ratepayers paying the shareholder twice for the same risk.

NLH argued there should be no difference between a Crown owned utility and an investor owned utility of similar risk in determining a fair ROE. At the same time, NLH maintained that two of the elements, i.e. debt guarantee and social policy considerations, which make NLH distinctive from an investor owned utility should not influence ROE. The Board notes that, while the shareholders of an investor owned utility may be entitled to an ROE based on a comparison to similar risk utilities, its revenues do not normally incorporate a guarantee fee and social policy benefits. The Board agrees with NLH that there was insufficient evidence to specifically show how the Board should consider an appropriate ROE for NLH in light of the social policy benefits derived by its shareholder, Government. The Board notes Government has directed the Board under Section 5.1 of the *EPCA* regarding the rural deficit. This issue is more specifically addressed in Part II - Section VIII of this Decision and Order.

In final argument (pg. 10) the IC referred to the tax rate of 30.58% that another investor would have to pay on dividends. Additional details on this issue were outlined in responses to IC-348 to IC-350. Given that Government, as sole shareholder of NLH, is a non-taxable entity, the IC reasoned the ROE can be reduced by an equal percentage. The Board is not persuaded to make such an adjustment based on this evidence.

In summary, the Board concludes NLH currently maintains financial characteristics inconsistent with those of an investor owned utility and, while its business risk is similar to that of NP, NLH's total risk is lower due to the role played by the provincial debt guarantee. The Board determines that NLH is not entitled to a 9.75% ROE equal to that approved in Order No. P. U. 19(2003) for NP, an investor owned utility. Furthermore, based on the evidence, the Board is not able to assess how, if at all, NLH's ROE should be impacted by social policy benefits directed by its shareholder, Government, and/or the non-taxable status of NLH and its shareholder. The Board is of the view that if intervenors wish these issues to be addressed in future then appropriate evidence be presented to allow the Board to reach a specific determination.

In denying NLH's request for a 9.75% ROE similar to NP, an investor owned utility, the Board accepts NLH's argument that the 3% ROE accepted by the Board in Order No. P. U. 7(2002-2003) for the 2002 test year was an interim proposal until NLH's next general rate

application. The Board acknowledged at the time that consideration of a more normal return would be subject to a future request by NLH. The Board does not agree with the position of the CA and the IC that there is no justification for an increased ROE. The Board finds no reasoned foundation in utility ratemaking to support the 3% ROE and believes this level would not constitute a just and reasonable return for NLH. It may also prove a disincentive for NLH to move toward an 80/20 self-supporting capital structure.

The Board finds that the appropriate ROE for NLH is greater than 3% and lower than 9.75%. The Board concurs with NP that the determination of an appropriate ROE for NLH in the circumstances is not a matter to be determined on a mathematical basis from the evidence. Hence, the Board will exercise its regulatory judgment in setting an appropriate ROE.

The Board in the first instance refers to its regulatory framework as set out earlier in this Decision. In the Stated Case (para. 144), then Mr. Justice Green concluded that the Board has discretion to choose the best approach to setting rates as long as it observes the legislation and sound utility practice. Mr. Justice Green remarked:

*“It must always be remembered that, as has been emphasized throughout this opinion, the Board is charged with balancing the competing interests of the utility and the consumers of the service it provides. Neither set of interests can be emphasized in complete disregard of the interests of the other. Thus, in choosing to exercise a particular power within the Board’s jurisdiction, the Board must always be mindful of whether, in so acting, it will be furthering the objectives and practices of the legislation and doing so in a manner that amounts to a reasonable balance between the competing interests involved.”*

In balancing the competing interests of the consumer and the utility the Board has determined that an appropriate ROE for NLH is greater than 3% and less than 9.75%. Within these parameters the Board was presented with no evidence to enable it to reach a specific determination, other than Dr. Waverman’s approach equating NLH’s ROE to its cost of issuing new debt.

Dr. Waverman concluded a fundamental tenet of utility ratemaking is that prices are based on costs (operating plus reasonable profit). Dr. Waverman submitted that NLH is a Crown corporation which raises debt capital supported by the unconditional guarantee of the Province. Given these facts Dr. Waverman noted NLH’s consideration of its optimal capital structure, provincial dividend policy and “*cost of equity*” will be different from that of an investor owned utility. As a Crown corporation, Dr. Waverman observed NLH should strive to provide efficient, safe, adequate and reliable service to its customers, while earning returns that allow NLH to be self-supporting. For purposes of this rate proceeding Dr. Waverman stated the Board should: (1) use a capital structure that reflects NLH’s balance of debt and retained earnings; (2) allow the utility to recover its embedded cost of debt; and (3) consider allowing an opportunity cost of capital on NLH’s retained earnings that is equal to NLH’s opportunity cost of debt. (Pre-filed Evidence, Dr. L. Waverman, pgs. 3/17; 8/23-27; 9/1-5; 18-21)

Dr. Waverman’s approach is premised on the evidence that NLH has no common stock equity and the Province’s citizens are its ultimate “*owners*”. For the shareholder’s equity (retained earnings) Dr. Waverman submitted NLH need only compute the opportunity cost of its



ultimate public “owners” - the people of the Province of Newfoundland and Labrador. (Pre-filed Evidence, Dr. L. Waverman, pg. 7/15/21) Ms. McShane and Dr. Kalymon on the other hand suggested the costs of NLH’s retained earnings should be comparable to an investor owned utility of similar risk. This key point of departure between the cost of capital experts involves an important regulatory question for the Board. What should customers or ratepayers of a Crown owned utility pay for electricity to compensate the utility and its public “owners” for a return on their equity investment (ROE)? This question becomes further complicated by the fact that some of the same owners, i.e. taxpayers, are being advantaged by social policy benefits for which they would otherwise have to pay outside of electrical rates. The answer lies in sharing costs appropriately among ratepayers, taxpayers, and public “owners” and deciding whether or not a government-owned utility in circumstances similar to NLH is entitled to recover all costs from ratepayers, including an ROE comparable to that of an investor owned utility of similar risk. The Board has determined that NLH has lower risk than NP and is not considered equivalent to an investor owned utility for purposes of determining ROE in this Application. In regulating NLH at this stage, the Board will concentrate on providing compensation for NLH’s debt guarantee, supporting a strengthening of NLH’s financial position and providing a fair ROE for NLH. Under these circumstances, an ROE for NLH linked to the cost of public debt may be considered a fair and reasonable return to be paid by customers and ratepayers of a Crown owned utility to compensate its public “owners” for supplying electricity.

Regarding the allowed cost for the shareholder’s equity portion of NLH’s capital structure, Dr. Waverman noted that Ms. McShane stated that the long-term opportunity cost of new debt to NLH is about 6.75%. He also suggested that a review of the yields to maturity of other electric utility Crown corporation debt in Canada with bond ratings comparable to NLH would also be useful. Dr. Kalymon also discussed the cost of debt to NLH in his pre-filed evidence (pg. 61) and, during direct testimony on December 4, 2003, updated the trading yields of long-term bonds for the Province from 6.03% as of August 14 to a current number of about 5.83%. Dr. Kalymon stated “*Given the provincial guarantee, that basically implies that that’s the effective borrowing cost for this company for long-term funds.*” (Transcript, Dec. 4, 2003, pg. 3/18-22) Dr. Waverman confirmed 5.83% as his understanding of the current marginal opportunity cost of debt. (Transcript, Dec. 4, 2003, pg. 58/14-21) Based on the evidence the Board concludes that 5.83% is the long-term marginal cost of new debt to NLH and, hence, represents a fair and reasonable return for the shareholder’s equity portion of NLH.

In examining this option from a regulatory perspective the Board notes that,

- By virtue of the Government guarantee, NLH will continue to maintain a sound credit rating and will have access to the capital markets for its borrowing, including new debt;
- An ROE of 5.83% supports regulatory principles of rate stability and predictability and moderates against rate shock; and
- An ROE of 5.83% may also provide an incentive for NLH, in concert with its shareholder, Government, to put in place the required measures to achieve NLH’s targeted goals of an 80/20 capital structure and an appropriate ROE comparable to utilities of similar risk.

Based on the foregoing considerations, the Board accepts 5.83% as an appropriate end result in determining NLH's ROE in the current circumstances. The Board is of the view that Dr. Waverman's approach will allow NLH to fully recover its costs, including a fair ROE, in the context of the finding that NLH should not be treated as an investor owned utility. In this particular Application, NLH is limited to an ROE equal to the Province's marginal cost of debt calculated using its actual capital structure. The Board believes a 5.83% ROE equal to the Province's marginal cost of debt can be used as a suitable interim measure to determine NLH's cost of capital. The Board concludes this finding is in keeping with sound cost-based ratemaking principles and is consistent with findings of the Board in this Decision and Order. The Board concludes that its finding of a 5.83% ROE for NLH is fair, just and reasonable from the perspective of both the consumer and the utility in the current circumstances. The Board confirms that any change in this determination will depend on NLH justifying to the Board in a subsequent application that it should be treated comparably to an investor owned utility or providing other suitable rationale supporting an increased ROE.

**The Board concludes that an appropriate ROE for NLH for the purposes of determining the weighted average cost of capital for the 2004 test year is 5.83%.**

**Newfoundland and Labrador Board of Commissioners of Public Utilities  
Order No. P.U. 7 (2002-2003)  
Newfoundland and Labrador Hydro**



*Newfoundland  
& Labrador*

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

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**IN THE MATTER OF AN APPLICATION BY  
NEWFOUNDLAND & LABRADOR HYDRO  
FOR A  
GENERAL RATE REVIEW**

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**DECISION AND ORDER  
OF THE BOARD**

**ORDER No. P.U. 7 (2002-2003)  
JUNE 7, 2002**

---

**BEFORE:**

**Mr. Robert Noseworthy  
Chair and Chief Executive Officer**

**Ms. Darlene Whalen, P.Eng.  
Vice-Chair**

**Mr. Don Powell, C.A.  
Commissioner**

**Mr. G. Fred Saunders  
Commissioner**

60/40 in the absence of a concrete plan. Finally, NP states there is no evidence that this target would be in the best interest of electricity consumers. (NP, Final Argument, pg. E-4)

The IC state in final argument that NLH has a sound credit rating now based on the government guarantee of its debt. The common and sensible decision is to continue to pay the fee rather than attempt to move to a stand-alone situation which could only be viable with a much different debt/equity structure. In summary the IC argued there is no pressing need to increase the equity in NLH at ratepayer's expense, and the least cost option consistent with the *EPCA* does not require the Board to address capital structure at this point. (IC, Final Argument, pgs. 93-94)

The Board notes that the longer term 60/40 capital structure proposed in the Application is pursuant to the principle of regulating NLH similar to an investor owned utility. For reasons already explained, the Board is not persuaded by the evidence to endorse this concept at this time. Neither, therefore, is the Board prepared to accept NLH's related proposal to move to a 60/40 capital structure. The evidence supports 60/40 as an appropriate target if NLH is to be operated on a stand-alone basis without a Government guarantee. As pointed out earlier, none of the witnesses are advocating the withdrawal of the Provincial guarantee. While a 60/40 capital structure appears to be an extension of NLH's argument to be treated as an investor-owned utility, there is no accompanying plan as to how or when this will be achieved or the impact a doubling of the equity base will have on customers. The Board points to a notable inconsistency in this area when IC-98 shows NLH's financial plan in 2005 projecting a capital structure of 82/18. The Board earlier concluded the build up of equity is dependent on NLH's ability to exercise control over its dividend stream into the future. This issue remains unresolved and is subject to further discussions between the shareholder and NLH.

The intervenors did not object to NLH's targets for a capital structure of 83/17 in the 2002 test year and a move toward 80/20 in the short term. This latter target (80/20) is in keeping with the recommendation of the Board's 1992 report.

**The Board accepts NLH's proposals for a debt/equity ratio in the 2002 test year of 83/17 and a target short term debt/equity ratio of 80/20. The Board concludes the evidence does not support the principle of NLH moving to a capital structure of 60/40 at the present time. If NLH is committed to move in this direction, it must formulate an appropriate long term financial plan to present to the Board.**

#### 7. Return on Equity

NLH's return on equity forecast for the test year 2002 is contained in Mr. Roberts' evidence. (Supplementary Evidence, J.C. Roberts, Schedule 1A) Adjusting for non-regulated earnings, NLH's regulated return on common equity is shown in GT's 2001 General Rate Hearing Report (pg. 12) as follows:

	1998	1999	2000	2001(F)	2002(F)
<b>Regulated Return on Common Equity (%)</b>	8.76	4.34	2.10	5.11	3.00

F - forecast

NLH explained that the proposal of a 3% ROE in the 2002 Test year is a means of assisting in reducing the rate increases required for customers. (NLH, Final Argument, pg. 36/4-5).

Several witnesses submitted evidence concerning NLH's long-term ROE. In final argument, however, NLH withdrew its long-term proposal for a return on equity (ROE) of 11-11.5%. (NLH, Final Argument, pg. 35/19-23)

NLH in its final argument comments that the decision on a fair and reasonable return need not be determined in this proceeding, given NLH's request for only a 3% ROE. That decision can be made at the time of NLH's request for a full return on rate base in light of economic and capital market conditions prevailing at the time. (NLH, Final Argument, pg. 38/1-7) Similar to its proposal on capital structure, NLH feels it is essential that the Board's decision convey to the financial markets that the acceptance of 3% ROE is a temporary measure, short term in nature, to reflect current circumstances. (Transcript, Jan. 28, 2002, pg. 6/67-71)

NP states that, while the otherwise acceptable ROE for NLH at this time would be higher, NLH has chosen to seek only 3% and indicates this fact alone in the Board's Order should be sufficient to address Mr. Wells' concern of sending an appropriate message to the financial markets. (NP, Final Argument, pg. E-3)

The IC state that, given the Board has more than enough real contested issues, it need do nothing more at this point than state it is satisfied with the 3%. Furthermore, the Board can indicate it has not been requested to determine a just and reasonable rate for 2002 and will not do so until such time as an application requests approval of a market rate. (IC, Final Argument, pg. 96)

The CA submits NLH's Application requesting a 3% ROE is flawed from a number of perspectives. Section 80. (1) of the *Act* makes reference to return on rate base but does not refer to return on common equity. The Stated Case<sup>4</sup> points to the rate of return on rate base being a reasonable range as opposed to a fixed number. The absence of a cap exercises no limitation on NLH realizing excess earnings on ROE above a reasonable rate of return. Based on these conclusions, the CA feels the Board should allow NLH to earn an ROE in the range of 2.5-3.0% in the test year, while recognizing that, theoretically, but for NLH's request for a 3% ROE, NLH would be entitled to 8.5-9.0% for the test year (CA, Final Argument, pgs. 4,7, 52).

The Board does acknowledge a 3% ROE is well below market and recognizes NLH's entitlement to earn a just and reasonable ROE in concert with the legislation. As suggested by NLH, a determination on full return on rate base can be made based on a future request and in light of economic and capital market conditions prevailing at the time. This position was generally accepted by all parties.

<sup>4</sup> Stated Case refers to Newfoundland (Board of Commissioners of Public Utilities) 164 Nfld. and P.E.I.R. 60 (NF CA)

The Board is not persuaded by the arguments of the CA and feels a 3% ROE is sufficiently limiting to prevent excess earnings. Consideration of ROE simply sets the equity dimension of the cost of capital and does not compromise the ability of the Board to determine a just and reasonable return on rate base as set out in the legislation. Finally, setting a reasonable range of return would serve to either undercut the acknowledged conservative ROE requested by NLH or increase the ROE above that requested. Either scenario is not deemed prudent by the Board.

**The Board accepts NLH's request for a 3% ROE in the 2002 test year. The Board acknowledges this level of ROE is below normal market returns because of NLH's position taken in this Application to lessen the rate impact on its customers. Consideration of a more normal return will be subject to a future request by NLH.**

**Telecom Decision CRTC 2007-5**  
**Northwestel Inc.**





## Telecom Decision CRTC 2007-5

Ottawa, 2 February 2007

### Price cap regulation for Northwestel Inc.

Reference: [8663-C12-200600066](#)

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306. As discussed previously, the Commission considers that the company should be provided with sufficient pricing flexibility should it wish to price its business services at a minimum at Phase II costs plus a 25 percent mark-up. The interim increases noted above are a step towards achieving this policy. Accordingly, the Commission approves on a final basis the monthly business rate increases of \$5.00, effective 1 January 2007.

*Long distance calling plans*

307. Given that the Commission is forbearing from regulating Northwestel's toll services, the Commission considers that it is unnecessary to dispose of the company's current proposals related to toll services.

*Toll-free services, digital services, wireless access services, and the settlement transport rate*

308. The Commission considers that Northwestel's proposal to increase the monthly rate for Toll-Free Dedicated Access Line service to match the Individual-Line Business PES rate is reasonable as these line access services are the same. Further, this will allow Northwestel to recover its costs associated with this Toll-Free Dedicated Access Line service.
309. Northwestel also proposed to remove the monthly Toll-Free Non-dedicated Access rate and decrease the Toll-Free Usage Rate, the Digital Private Line service rates, the Settlement Transport rate, the Teleconferencing Service rates, and the Wireless Service Provider – Network Access rates. The Commission notes that as a result of its determinations in this Decision, the level of subsidy available to Northwestel will be significantly reduced from the level proposed by the company. The Commission considers that it would not be appropriate to increase contribution from the NCF in order to allow Northwestel to reduce its rates for these services.
310. The Commission notes that the company may choose to propose such rate changes during the price cap regime. The Commission also notes that the transport rate is negotiated with other carriers, and that Northwestel could choose to renegotiate this rate.
311. In light of the above, the Commission approves effective 1 January 2007 the increase to the monthly rate for Toll-Free Dedicated Access Line service and denies the proposed rate reductions to the Toll-Free Non-dedicated Access rate, the Toll-Free Usage Rate, the Digital Private Line service rates, the Settlement Transport rate, the Teleconferencing Service rates, and the Wireless Service Provider – Network Access rates.

*Other rate issues*

312. As noted earlier, in Order [2006-332](#), the Commission made all of Northwestel's tariffed service rates interim effective 1 January 2007. The Commission gives final approval, effective 1 January 2007, to the rates made interim as a result of Order [2006-332](#), as modified by this Decision. The status of tariffs granted interim approval in other Commission decisions or orders is not affected by the above determination. Such tariffs are to continue in effect on an interim basis until the Commission issues final determinations with respect to them.

**Going-in return on equity**

313. Northwestel proposed that its going-in revenue requirement be assessed using a 10.5 percent ROE, the midpoint of its currently approved ROE range.<sup>12</sup>
314. The UCG argued that Northwestel should continue to be regulated under a rate base/rate of return regime, using an ROE of 9.5 to 10 percent. The UCG considered this range to be at par with that approved for Canadian regulated electric monopolies in recent decisions.
315. TCC noted that Northwestel was requesting approval of an ROE of 10.5 percent, even though the company filed the prepared testimony of Kathleen McShane that supported an ROE at the upper end of a range from 11.25 to 11.75 percent. TCC considered that Ms. McShane's observations about the business and financial risk faced by the company may not have taken into account changes to the company's risk profile associated with its proposal to increase the amount it draws from public funds.

316. The Consumer Groups considered that the increased level of explicit funding under Northwestel's proposed framework would significantly reduce Northwestel's level of business risk, since these funds would be guaranteed to the company. The Consumer Groups also submitted that the risk-free rate, one of the key components in determining the appropriate ROE using the equity risk premium approach, had changed since the last full review of the company's approved ROE. The Consumer Groups noted that the risk-free rate, measured as the yield on a long-term Canada bond, was 6.2 percent in 2000, and that the rate for Government of Canada long-term bonds as of 30 June 2006 was 4.6 percent, a decrease of 1.6 percent. The Consumer Groups were of the view that the ROE used to establish Northwestel's revenue requirement in the current proceeding should be reduced by at least 1.6 percent to reflect this decline in the risk-free rate.
317. Northwestel replied that the Consumer Groups' assertion that the risk-free rate of return had decreased by 1.6 percent (or 160 basis points) was incorrect. The company noted that the 6.2 percent indicated in Decision [2000-746](#) would have been a forecast rate for long-term Canada bond yields, and that the comparable forecast rate provided on the record of this proceeding was 5.25 percent. Northwestel noted that this reflected a 95 basis point decline since 2000, and not the 160 basis point change in yield claimed by the Consumer Groups. Further, Northwestel submitted that the Consumer Groups' recommendation to adjust the company's ROE on the basis of a single element was fundamentally flawed, and that it was also not valid to presume that all other considerations had remained static for six years.
318. In response to the suggestion by TCC and the Consumer Groups that Northwestel's business risk would decline under the company's proposal to replace its implicit subsidization with an equal level of explicit subsidization, Northwestel confirmed that its proposed explicit subsidies were taken into account in Ms. McShane's risk analysis.

#### ***Commission's analysis and determinations***

319. The Commission notes that the UCG provided no details in support of its statement that 10.5 percent is at par with that approved for regulated Canadian electric monopolies, nor did the UCG provide any comparisons of key financial and business indicators which would impact the ROE levels for different companies.
320. With regard to the Consumer Groups' submission that Government of Canada long-term bond rates have declined and that this decrease should be reflected as an equivalent basis point reduction to the company's ROE level, the Commission concurs with Northwestel's view that adjusting the ROE on the basis of a single consideration in isolation would not be appropriate.
321. The Commission considers that since 2000 there have been offsetting factors in the determinants usually considered in assessing the reasonableness of an ROE level. As an example, decreases in long-term interest rates would normally be offset to some extent by associated increases in a regulated company's risk premium.
322. Having considered the factors discussed above, the Commission finds no compelling evidence to support changes to the company's currently approved ROE level. Accordingly, the Commission has calculated Northwestel's going-in revenue requirement using an ROE of 10.5 percent.

#### **Calculation of the going-in revenue requirement**

323. Northwestel proposed that its total annual subsidy from the NCF should be \$43.2 million. As a result of its determinations in this Decision, the Commission concludes that the annual subsidy from the NCF is \$18.9 million. The Commission estimates the going-in revenue requirement to be approximately \$19.2 million, which results in a shortfall of \$0.3 million. A detailed schedule of the company's proposed going-in revenue requirement, along with the Commission's approved going-in revenue requirement, are summarized in Appendix 2.
324. The Commission considers that this shortfall of \$0.3 million qualifies as an exogenous factor based on the criteria set out in this Decision. Consequently, the company may propose an exogenous adjustment to the Business Services and/or the Other Capped Services baskets, as appropriate, in its 31 March 2007 price cap filing to recover this amount.

**CRTC 2000-746  
Northwestel Inc.**



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## CRTC 2000-746

Ottawa, 30 November 2000

### Long-distance competition and improved service for Northwestel customers

Reference: Tariff Notice [TN 737](#) and [8622-N1-04/99](#)

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78. CAC/NAPO, the only other party that filed technical evidence on this topic, proposed an ROE range of 8.25 percent to 10.25 percent with a midpoint of 9.25 percent. It also proposed retaining the existing excess earning sharing mechanism. The party also stated that it should be symmetric in order to ensure fairness to all participants. In addition, CAC/NAPO proposed that the company move to a common equity ratio of 55 percent.

### **Cost of equity**

79. In establishing the cost of common equity, the Commission has considered both quantitative technical evidence and the qualitative risk analysis. In the past, the Commission has considered the use of three techniques in assessing the cost of equity:
- a) equity risk premium;
  - b) discounted cash flow; and
  - c) comparable earnings.
80. In light of the weight given the equity risk premium by both the company and CAC/NAPO in this proceeding, the Commission is satisfied that the equity risk premium test, together with the underlying qualitative risk analysis, will be sufficient to establish a reasonable estimate of the cost of equity.
81. The equity risk premium test consists of both the risk-free rate and the equity risk premium. The latter has two elements – the market risk premium (MRP) and the beta. This "bare-bones" cost of equity is then subjected to a flotation cost adjustment.
82. The risk-free rate was measured as the yield on a 30-year, long-term Canada bond (LTC). The Commission finds that an LTC yield of approximately 6.2 percent based on the supporting evidence is reasonable.
83. Northwestel and CAC/NAPO filed MRP estimates in this proceeding. The main differences between the estimates of their respective experts relate to the time period over which the risk premium is measured, the differences in the holding periods, and whether or not an adjustment for U.S. influence in the markets is included. The Commission finds that an MRP of 5 percent to 5.5 percent is appropriate based on a geometric holding period, a timeframe of post-World War II, and an adjustment for the integration of capital markets.
84. The beta serves to adjust the MRP to reflect the risk of a benchmark telephone company relative to the market. Consistent with past decisions, the Commission finds that the use of the data from the TSE 300 Telco index is appropriate and concludes that a beta of between 0.7 and 0.79 is reasonable.
85. The Commission reinforces the fact that regulated firms are entitled to recover legitimate flotation costs that are a necessary cost of doing business and concludes an adjustment of 15 to 25 basis points for this factor is appropriate.

86. The level of risk is a major consideration in determining the cost of equity. The Commission considers that any increase in Northwestel's overall risk is offset by both the use of a deferral account to capture any over- or under-estimation of toll revenue and by supplemental funding.
87. Decision 93-20 allowed Northwestel "to move towards a more conservative capital structure (i.e., a common equity of 55 percent) in order to mitigate any potential increase in its business risk over the long term." Northwestel expects that it will get to the 55 percent level of common equity by the year 2001, although this is contingent on the extent of supplemental funding and the level of toll competition. The Commission finds that the company should be allowed to move to a common equity ratio of 55 percent, primarily to mitigate any increases in business risk.
88. Taking into consideration all of the determinations made above, the Commission finds that a lower estimate of 10.5 percent for the cost of equity is more appropriate for Northwestel. This ROE reduction results in a revenue requirement reduction of \$4.1 million.

### **Excess earning sharing mechanism**

89. The Commission considers the continuation of both the ROE range of 200 basis points and the excess earning sharing mechanism to be inappropriate, given the benefits associated with the supplemental funding and the implementation of the deferral account associated with forecasting the variance of toll revenue. The Commission directs that the ROE range be reduced to 100 basis points, 50 basis points on either side of the midpoint of 10.5 percent, and finds that the sharing mechanism for excess earnings over the top of the approved ROE range be eliminated. It also considers that the company's earnings should be monitored and any need for such a sharing mechanism should be reviewed at a later date.

### **Accounting matters**

#### **Employee benefit transitional asset**

90. Effective 1 January 2000, Canadian companies are required to comply with a new accounting standard and recognize gains and losses resulting from the difference between the market value of the employees' benefit plan assets and the actuarial present value of the employee benefit obligation. That difference is either a transitional asset or obligation and may be accounted for on a retroactive or prospective basis.
91. Compliance with the new accounting standard resulted in a transitional asset, which Northwestel proposed to account for on a retroactive basis. The result would be an increase to its average common equity of \$6.3 million.
92. Under Northwestel's proposal, its shareholders would receive the benefit of the transitional asset. Although the company submitted that the pension plan surplus results from the performance of the employee benefit plan assets, the Commission is of the view that the employee benefit plan surplus may also be a result of past contributions being higher than necessary. The Commission considers that the employee benefits are necessary costs for the provision of service that are normally included in the determination of a company's revenue requirement.

**Nova Scotia Utility and Review Board  
Application by Nova Scotia Power Inc.  
for Approval of certain Revisions to its Rates,  
Charges and Regulations  
Decision NSUARB-NSPI-P-875  
2002 NSUARB 59**



**NOVA SCOTIA UTILITY AND REVIEW BOARD**

**IN THE MATTER OF THE PUBLIC UTILITIES ACT**

- and -

**IN THE MATTER OF AN APPLICATION** by **Nova Scotia Power Incorporated** for approval of certain Revisions to its Rates, Charges and Regulations

**BEFORE:**

John A. Morash, C.A., Chair  
Margaret A. M. Shears, Vice-Chair  
John L. Harris, Q.C., Member

**COUNSEL:**

**NOVA SCOTIA POWER INCORPORATED**

Peter W. Gurnham, Q.C.  
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**ANNAPOLIS GROUP et al.**

Robert G. Grant, Q.C.  
Nancy G. Rubin

**DALHOUSIE LEGAL AID SERVICE**

Claire McNeil

**ELECTRICITY CONSUMERS ALLIANCE  
OF NOVA SCOTIA**

John Woods, P. Eng.

**HALIFAX REGIONAL MUNICIPALITY**

Mary Ellen Donovan

**MUNICIPAL ELECTRIC UTILITIES  
OF NOVA SCOTIA CO-OPERATIVE**

Donald Regan  
Albert Dominie

**PROVINCE OF NOVA SCOTIA**

Jeannine Lagassé

no overall benefit accruing from an increase in the common equity level of NSPI. As noted above, Emera's common equity ratio at December 31, 2001, was 35.6%.

[156] The Board has seen no evidence to indicate that Emera is prepared to make a similar increase in its common equity ratio. Accordingly, the Board directs that the common equity level of NSPI remain at 35% for rate-making purposes. This will reduce the revenue requirement by \$3.3 million. The Board would indicate that it has no objection to NSPI increasing its actual equity ratio in the future to 40%. However, at any future rate hearing, the Board will determine what equity ratio is appropriate for rate-making purposes. At that time, among other things, the Board would consider the level of equity in Emera.

## **5.2 Rate of Return on Equity**

### **5.2.1 Submission - NSPI**

[157] Based on the recommendation of its expert witness, Ms. McShane, NSPI requests that the Board approve a return on common equity of 11.0% for the purpose of setting rates, with the ability to earn up to 12.0%. This represents an increase from the current allowed return range of 10.50% - 11.00% approved by the Board in its 1996 rate decision and an increase in the earnings band to 100 basis points. Rates were set in 1996 on the basis of a return on common equity of 10.75%.

[158] In her direct evidence, Ms. McShane said that:

a 100 basis point range better recognizes the potential volatility of returns from year-to-year and creates a more symmetric potential to earn above and below the allowed return.  
(Exhibit N-1, McShane, Direct Evidence, p. 77)

[159] She submitted that:

NSPI should have the same opportunities as other utilities to earn returns above the allowed return. Most utilities in Canada subject to traditional rate of return regulation are not required to refund earnings above the allowed return.

(Exhibit N-1, McShane, Direct Evidence, p.78)

[160] The impact on revenue of the proposed changes to the allowed rate of return on equity was set out in NSPI's response to MEUNSC IR-25 and Undertaking U-12, and can be summarized as follows:

- Increasing the rate of return on equity from 10.75% to 11.0% results in an increase in the required revenue of \$2.0 million.
- Increasing the rate of return on equity from 11.0% to 12.0% results in an increase in the required revenue of \$14.0 million.

[161] Ms. McShane used three tests to arrive at her recommended range: the equity risk premium method, the discounted cash flow method (DCF) and the comparable earnings method. In applying the risk premium method, she estimated the risk-free rate at 6% for the 2002 test year. Using three separate risk premium approaches, she concluded that the risk premium analysis indicated a risk premium of 4.25%, for a cost of equity of 10.25% before any adjustment for financing flexibility. Using the constant growth model, she applied the DCF test to a sample of U.S. electric utilities and derived a cost of equity of 11.1% to 11.3%. She added a 50 basis point financing flexibility adjustment to provide compensation for flotation costs. She applied the comparable earnings test to samples of Canadian and U.S. low risk industrials and concluded that the fair return based on the comparable earnings tests is in the range of 12.0% to 13.0%. After considering the results of these three approaches, Ms. McShane recommended a rate of return on equity of 11% to 12%.

[162] In its post-hearing brief, NSPI addressed the following points concerning the testimony of Drs. Roberts and Kryzanowski:

The CAPM results are subject to considerable variation, depending on the periods chosen for estimation of the risk premium. It is submitted that Drs. Kryzanowski and Roberts were selective with respect in their choice of time period to measure historic risk premiums. For purposes of their evidence they concentrated on the 1957 to 2001 data because data prior to 1957 is not available for the TSE index.

(NSPI, Post-Hearing Brief, p. 33)

They do acknowledge that data for the Canadian equity market is available prior to 1957 and at page 69 of their testimony calculate an equity risk premium of 5.5% for the period 1948 to 2001. However, they lower the risk premium they calculate by excluding the first 3 or 4 years after the war, claiming that period was unusual.

NSPI believes the recommendation of these witnesses is unreasonable on its face and should be disregarded. A return of just over 8% is equal to a risk premium of less than 1% over NSPI's cost of debt.

(NSPI, Post-Hearing Brief, p. 34)

NSPI would also reiterate the point made earlier that the Province's witnesses did no kind of evaluation to see if their recommendations were compatible with maintaining the company's financial integrity. Their recommendations would allow NSPI to achieve interest coverage consistent with debt ratings in the junk bond category. In NSPI's submission, acceptance of these witnesses' recommendations would be financially disastrous to the Company, its bondholders and equity shareholders.

(NSPI, Post-Hearing Brief, pp. 35-36)

### **5.2.2 Submissions - Intervenors**

[163] In their opening statement, Drs. Roberts and Kryzanowski recommended a rate of return on common equity of 8.20% as opposed to the 8.02% they originally recommended in their pre-filed evidence. Their recommendation is based upon their application of the equity risk premium test. Drs. Roberts and Kryzanowski did not use the DCF method used by Mr. Rothschild and Ms. McShane, or the comparable earnings test used by Ms. McShane.

[164] In his cross-examination of Drs. Roberts and Kryzanowski, Board Counsel asked why they did not use the DCF method. They stated that, in their view, the DCF method has two problems, that of circularity and obtaining an accurate growth forecast.

[165] In his opening statement, Mr. Rothschild summarized his recommendation that, assuming a 35% equity ratio, an appropriate rate of return on equity would be 10.15%. He further stated that if NSPI's equity ratio were to increase to 40%, his recommended rate of return would drop to 9.95%. A further increase in the equity component would result in a further lowering of the rate of return on equity. His recommended level of 10.15% was based on a recommended equity cost of 9.75% and a capital structure risk adjustment of 0.40%.

[166] Mr. Rothschild did not use the comparable earnings approach and he stated that this approach is not valid since it does not address the cost of equity. Instead, it simply considers the returns on book equity that were achieved without testing whether these returns were higher or lower than necessary.

[167] In his direct evidence Mr. Rothschild also addresses the methodology used by Ms. McShane in her DCF analysis:

Summarizing, the major problem with Ms. McShane's Discounted Cash Flow (DCF) cost of equity computation is that she applies the DCF Method as if investors not only expect short-term analyst forecasts to be accurate in the short-term, but also somehow applicable in the long-term. Ms. McShane's analysis implies that investors believe the average return on book equity (ROE) for her selected group of comparative electric companies will keep increasing forever. Ignoring her inappropriate stretching of short-term forecasts to the horizon, her DCF method is mathematically invalid because it is not indicative of the expected growth in dividends, stock price, or book value even over the next five years. This large mathematical error is repeated in the portion of Ms. McShane's risk premium based methods that rely upon her DCF method. (Exhibit N-73, p.8)

[168] Under cross-examination, Mr. Rothschild indicated that the DCF method is the most common method used in the United States for calculating return on common equity:

Q. Would you agree -- even if others don't, but would you agree that the discounted cash flow method is a method favoured in the United States in calculating return on common equity?

A. That is very easy. Yes. (Transcript, May 15/02, p.2414)

[169] In responding to a question from the Board, Mr. Rothschild further discussed the difference between his approach and that of Drs. Roberts and Kryzanowski:

Q. Okay. I think based on the evidence that we have an understanding why -- or first of all, I guess I should say you're in the middle. Your recommendations are in the middle between the Province's experts and Ms. McShane for the company. And I think we have an idea why your recommendations are lower than Ms. McShane's. I wonder if you could just summarize why your recommendations are higher than the experts for the Province.

A. Yes, I can do that. I give primary weight to the DCF method. And that's not because I haven't given significant weight to risk premiums in the past. My concern is that right now, a risk premium method is understating the cost -- or let me say a properly applied risk premium method. I've seen people even today who find ways to have the risk premium approach come up with too high results by doing things like using the arithmetic average. But a properly applied risk premium will understate the cost of equity because of the flight to quality that is prevalent today with the combined fears of heightened world tensions both relating to the terrorism and the ongoing problems in the Middle East, and always uncertainty when there's a recession. Things are starting to look better in terms of hopeful -- a recovery from recession, but those things tend to create a flight to quality, and when that happens, you can get a temporary distortion in risk premiums. When you implement a risk premium method the way most people do it, and I believe the way all of the witnesses in this case have done it, you're looking to historic relationships so that you can add a risk premium to today's cost of debt, which is great and very helpful, but only work so long as today is reasonably representative of what was the historic situation. And I think it's just hopefully temporarily out of balance.

(Transcript, May 16/02, p.2553)

### **5.2.3 Findings - Rate of Return on Equity**

[170] The Board has considered the evidence of Ms. McShane, Drs. Roberts and Kryzanowski and Mr. Rothschild. The Board believes that the rate of return on equity should be set at a rate which fairly reflects the risk associated with an investment in NSPI. In the Board's view, the rate of return of 10.15%, as recommended by Mr. Rothschild, most fairly meets that test.

[171] The Board believes that the rate of return advocated by Drs. Roberts and Kryzanowski is too low given the financial and business risks faced by NSPI and the current economic environment. On the other hand, the level of return suggested by Ms. McShane is more generous than warranted given the present economic environment.

[172] Accordingly, the Board sets the rate of return on equity at 10.15% for purposes of setting rates. The Board continues to consider that it is useful to establish an earnings range, which the Board sets at 9.90% to 10.40%. Setting the rate of return on equity at 10.15%, has the effect of reducing NSPI's revenue requirement by \$8,500,000.

## **5.3 Return on Rate Base**

### **5.3.1 Findings**

[173] In Exhibit N-1, NSPI included Table 3.5 which sets out the calculation of its rate base and rate of return on rate base. It shows a projected rate of return on average rate base of 10.25% for the 2002 test year. The rate of return on rate base is derived from the financial forecast and for the test year assumes a rate of return on equity of 11.0% and

**Pacific Northern Gas Ltd.  
2002 Revenue Requirements Application  
Decision  
July 31, 2002**





IN THE MATTER OF

# **PACIFIC NORTHERN GAS LTD.**

## **2002 REVENUE REQUIREMENTS APPLICATION**

### **DECISION**

**July 31, 2002**

**Before:**

**Peter Ostergaard, Chair  
Nadine F. Nicholls, Commissioner  
Paul G. Bradley, Commissioner**

In its 2002 Revenue Requirements Application, PNG (N.E.) also applied for Commission approval to revise an existing \$8 million long-term loan from PNG to PNG (N.E.). The request to revise the existing loan was denied by Commission Order No. G-57-02 and Reasons for Decision. The Commission has determined that the owners of PNG(N.E.) have an obligation to honour the loan which had been made by the previous owner. The incremental cost is not to be borne by PNG ratepayers.

**The Commission accepts the long-term debt as forecast for 2002.**

### **8.3 Common Equity Component and Return on Common Equity**

The thickness of the common equity component and the required return on common equity are interrelated issues, and are considered together in this section. PNG applied to increase the deemed common equity component from 36 to 45 percent and to increase the risk premium over the return on common equity (“ROE”) of a low risk benchmark utility from 75 to 150 basis points (0.75 to 1.5 percent) based on the recommendation of its consultant, K. McShane of Foster Associates (Exhibit 1). Based on the low risk benchmark utility ROE for 2002 of 9.13 percent, the risk premium applied for by PNG would generate a ROE of 10.63 percent. In the Revised Application, the request for an increase to the risk premium was reduced to 100 basis points as a result of the new agreement with Methanex (Exhibit 2B, p. 74; Exhibit 1C), which would reduce the ROE to 10.13 percent.

The circumstances underpinning PNG’s request for a changed equity structure or ROE are uncertainty around the continuing viability of PNG’s two largest customers: Methanex’s Kitimat plant and Skeena Cellulose. During her testimony, Ms. McShane stated that the primary issue cited by Canadian Bond Rating Service (“CBRS”) in downgrading PNG’s ratings from triple B to double B was the uncertainty surrounding PNG’s industrial customers (T4: 503). After filing the MOA, PNG stated that the future risk of insufficient competitive room to recover all of its costs is the primary reason underlying PNG’s application to increase its common equity component to 45 percent. (Exhibit 2B, BCUC IR 3, p. 67). PNG’s current actual equity component is over 45 percent and will be 50 percent by the end of the test year (T4: 518).

Ms. McShane’s analysis indicates a differential in the required equity return between PNG and the benchmark utility, assuming the same capital structure, of 250-300 basis points (Exhibit 1, Tab 5, p. 16). She stated that this differential could be recognized through (1) similar capital structures for PNG and the benchmark utility and a ROE 250-300 basis points above that of the benchmark utility; (2) a capital structure for PNG that effectively offsets its higher risk relative to the benchmark; or (3) a combination of a stronger capital structure and a higher risk premium. She recommends the third option (Exhibit 1, Tab 5, pp. 16-17).

In support of her conclusions, Ms. McShane pointed to PNG's market/book ratio of 50 percent, based on a share price of \$10.00, and a price/earnings ratio of 5.7. Both the market/book and price/earnings ratios, in her view, supported a much higher risk premium than 75 basis points. Ms. McShane also supports her conclusion by reference to PNG's double B debt rating and comparing yields on double B rated corporate bonds and A-rated utility bonds. She estimates that the difference is in the range of 150-300 basis points "...with a focus on 200-250 basis points." (Exhibit 1, Tab 5, p. 13).

Ms. McShane also estimates that PNG's business risk beta would be in the approximate range of 0.50 to 0.55 leading to a levered beta estimate of 1.1-1.2 and a market risk premium of 250-300 basis points (Exhibit 1, Tab 5, p. 16). Based on all of the above, Ms. McShane recommended an equity risk premium relative to the benchmark utility of 1.5 percent to compensate for PNG's higher risk, based on a capital structure containing 45 percent common equity.

During her testimony, Ms. McShane acknowledged that, based on revised data, including a more recent share price of \$14.10, the market/book ratio would be 0.67 rather than 0.5, and the cost of capital calculated in her evidence (at pp. 9 -10) would be 12.5 percent (T4: 565) rather than 15.3 percent (Exhibit 1, Tab 5, p. 10). Ms. McShane further acknowledged that the range of .50 to .55 for PNG's business risk beta was based on her judgement considering several factors including the Methanex volume reductions and Skeena uncertainty as well as the general economic and physical risks that PNG faces. She also stated that the estimate of business risk is imprecise (T4: 572-3). Ms. McShane agrees that the risks facing PNG are not systematic risks but are company specific risks and the pure Capital Asset Pricing Model suggests investors should not be compensated for those risks "...although the market reality says otherwise" (T4: 579).

Subsequent to Ms. McShane's testimony, PNG filed the Revised Application to take into account its MOA with Methanex, and reduced its equity risk premium request to 1 percent (100 basis points) (Exhibit 1C). PNG states that Ms. McShane had concluded that the impact of the new agreement with Methanex was to reduce the required risk premium by 50 basis points to 100 basis points (Exhibit 2B, BCUC IR 3, Q. 26.1.2, pp. 74-75; T5: 720-21).

PNG concedes that the MOA reduces the risk that the Methanex load will be lost, but states that there is also an increase in risk due to the transfer of some margin from Methanex to the core market leaving much less room to shift further margin to the core market. Further, PNG argues that the level of business risk it faces is higher than the last time its capital structure and return were reviewed because the agreement is for only seven years and has no provincial backstop, the future of Skeena remains in doubt, and the agreement

does not guarantee that Methanex will remain in the longer term. PNG also states that, if the Commission decided at some time that PNG's rates needed to be lower just for competitive reasons creating a forecast unrecoverable revenue deficiency, PNG would probably seek approval to have that deficiency recorded in a deferral account for recovery in the future when rates became competitive again (T5: 707).

Intervenors generally opposed the requested increase. Alcan and the Forest Companies submitted that any increases to the risk premium or the capital structure should be denied. CAC (BC) *et al.* argues that if the Commission approved that higher return and thicker equity requested by PNG, this would result in a direct transfer from ratepayers to shareholders. Methanex also opposed the proposed additional equity and increased ROE and argues that rate increases arising from a higher return on equity will only lead to greater uncertainty regarding PNG's long-term economic viability (Reply Argument, p. 9).

### **Commission Findings**

PNG and its witness, Ms. McShane, have gone to significant effort to attempt to demonstrate that the currently allowed equity component and return on equity are insufficient to provide fair and reasonable compensation for its service. The paradox facing the Commission is that some of the additional risk that PNG cites to justify an increased risk premium or equity thickness is its potential inability to recover its return on investment due to the competitive prices of alternative fuels. As Methanex points out, rate increases from a higher return on equity would only lead to greater uncertainty regarding PNG's long-term viability. PNG notes that, irrespective of the factors leading to a cost increase, customers tend to focus on the total gas bill (T5: 704-05). A July 6, 2001 report on PNG by Dominion Bond Rating Service ("DBRS") states that "...current rates are already high, and further upward adjustments could have a significant negative impact on demand, and thus, on the Company's financial profile and ability to meet its debt obligations." The DBRS report goes on to state that if the Commission "...does not approve rate adjustments to cover cost of service and earn the approved ROE on deemed equity, or if the rate adjustments are so high (given the already high rates in existence) that demand is significantly negatively affected, the company's EBIT and net income beyond 2002 will be very weak." (Exhibit 2, Q. 10.1.1, pp. 1 and 4). The Commission accepts the argument of Methanex and others that any increase in the delivered cost of gas to customers leads to greater uncertainty for PNG.

PNG has stated that there is sufficient room, although not much room, for it to raise its rates sufficiently to recover all of its costs, including a higher ROE and thicker equity structure (Exhibit 2B, Q. 22.1, p. 66). PNG however agreed that there is little, if any, room for PNG to extract further rate increases from its residential customers (T5: 596-97). Under at least one scenario discussed during the hearing, the efficiency-adjusted cost of residential gas heat could exceed the cost of heating with electricity by 18

percent (Exhibit 37; T5: 588-91). PNG suggested that the loss of that competitive room as a result of the new agreement with Methanex was one of the reasons for PNG's higher risk (Exhibit 2B, BCUC IR 3, Q. 26.1.1, p. 74). Had the Methanex plant closed the loss of competitive room would have been much greater.

PNG states that the rates agreed to in the MOA provide it with the opportunity to become more financially stable over the long-term (Exhibit 1B, p. 5). The MOA between Methanex and PNG has reduced or eliminated a substantial risk that Methanex would close its Kitimat plant following the expiry of its largest contract in November 2002 and leave the system with little or no compensation to PNG.

**Based on the available evidence, the Commission concludes that there is insufficient evidence to support the case that, with the MOA between PNG and Methanex in place, the risk to PNG has increased since the last review of its capital structure and return on equity. The MOA, the ICDDA and recovery of Skeena bad debt all limit risks to PNG. Therefore, the Commission denies PNG's Application for an equity component of 45 percent and a ROE risk premium of 100 basis points.**

## **9.0 2002 REVENUE REQUIREMENTS**

### **9.1 Allocation of the Overall Revenue Deficiency Among Customer Classes**

For several years prior to the current application, PNG has allocated the revenue deficiency on the basis of the gross margin for each customer class (PNG Argument, p. 16). The gross margin is based on 2002 test year sales that include some deficiency volumes that do not attract the full margin. Therefore, PNG proposed in its November 30, 2001 application to allocate the revenue deficiency to customers based on the full normalized gross margin attributable to each customer class (Exhibit 1, Tab Application, p. 15). The share of the revenue deficiency to each customer class would be based on the proportion of the normalized gross margin for the customer class to total normalized gross margin times the revenue deficiency. The allocated revenue deficiency divided by the forecast deliveries equals the proposed rate change (Exhibit 1, Tab Rates, p. 4).

In its February 25, 2001 amendment (Exhibit 1A), PNG revised its proposal with respect to Methanex. PNG stated that the original proposal failed to recognize that all deliveries during the January to October period above the 80 percent minimum take-or-pay obligation would be the make-up of deficiency volumes incurred during the methanol plant shutdown from July 2000 to June 2001 (Exhibit 1A, p. 5). Consequently PNG proposed that for Methanex the allocated deficiencies would be spread over firm and interruptible deliveries attracting full margin (i.e. excluding deliveries of make-up deficiency volumes)

**Telecom Decision CRTC 2002-43**  
**Telebec and Telus Quebec**



## Telecom Decision CRTC 2002-43

Ottawa, 31 July 2002

### Implementation of price regulation for Télébec and TELUS Québec

Reference: [8678-C12-10/01](#)

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452. Accordingly, Commission has accepted TELUS Québec's proposed going-in depreciation expense reduction of \$12.3 million.

### **Capital Structure and Return on Equity**

#### **Introduction**

453. In order to determine the going-in revenue requirement of Télébec and TELUS Québec, it is necessary to establish the appropriate capital structure for the Companies (i.e., proportion of common equity and debt capital), as well as the appropriate ROE for the Utility Segments of the Companies.
454. In Decision [98-2](#), the Commission decided that the going-in revenue requirement for the other large ILECs should generally be determined using a capital structure with a maximum common equity of 55% and a Utility Segment ROE of 11%.
455. In PN [2001-36](#), the Commission sought comments as to why the going-in revenue requirement for Télébec and TELUS Québec should not reflect the same capital structure and Utility Segment ROE as were used in Decision [98-2](#).

#### **Capital Structure**

456. In Decision [97-21](#), the Commission determined that for regulatory purposes the Companies' capital structure would be deemed not to exceed 55%.
457. Télébec submitted that the capital structure used by the Commission in Decision [98-2](#) would be appropriate for determining its going-in revenue requirement in the present proceeding. Télébec's capital structure in 2001 was approximately 54% common equity.
458. In the present proceeding, TELUS Québec forecast that its actual consolidated common equity ratio would be 55.8%, approximately the same capital structure as was used by the Commission in Decision [98-2](#). TELUS Québec submitted that there was no reason to conclude that it faced a materially different level of business risk than the other large ILECs so as to justify a different capital structure. Consequently, the company supported the use of the Decision [98-2](#) capital structure for the purpose of setting its going-in revenue requirement.
459. No party who filed comments objected to the capital structure proposed by the Commission in PN [2001-36](#).
460. In light of the above, the Commission has used a capital structure with a maximum common equity of 55% for the purposes of determining the going-in revenue requirements of Télébec and TELUS Québec.

#### **Return on Equity**

##### *Background*

461. For the past several years, Télébec and TELUS Québec have been subject to rate base/rate of return regulation with ROEs approved by the Commission in Decision [97-21](#). In that Decision, Télébec was granted a Utility Segment ROE range of 10.4% to 12.4% while TELUS Québec was granted a Utility Segment ROE range of 10.3% to 12.3%. For the purposes of calculating the contribution requirement, the Commission used the midpoints of the Utility Segment ROE ranges (i.e., 11.4% and 11.3% for Télébec and TELUS Québec, respectively).



*Positions of parties*

462. Télébec agreed with the Commission's proposal that its going-in revenue requirement be set using a Utility Segment ROE of 11.0%. Télébec submitted that this rate reflected the company's historical average over the last four years and indicated that the company was seeking an ROE that would be competitive in the market and in line with what the other large ILECs earned during their initial price cap period. It further submitted that its proposal was fair and would lead to the proper balance amongst all stakeholders.
463. TELUS Québec did not agree with the Commission's proposal to use 11%, but instead proposed to use an ROE of 12% for setting its going-in revenue requirement. The company filed expert evidence, prepared by Ms. McShane, proposing that the company's going-in Utility Segment ROE be set to reflect the operating environment and regulatory framework that would be implemented in 2002. It submitted that the use of the equity risk premium method combined with the analysis of business and financial risk indicated a cost of equity range of 12.0% to 12.5%. This range was derived using a forecast of long-term Canada bonds at 6.0%, "bare-bones" equity risk premium of 5.5% to 6.0% (made up of a Market Risk Premium (MRP) of 6.5% to 7.5% and a beta of 0.8 to 0.85) and an adjustment for financing flexibility of 50 basis points.
464. ARC et al. submitted that the target ROE should be set so that Télébec and TELUS Québec could expect to earn a normal return on equity taking into account all of the benefits of the pricing flexibility that would be permitted under a price cap plan. ARC et al. also submitted that the use of an alternate methodology, such as the formula employed by the National Energy Board (NEB), would result in lower cost of equity than proposed by the Commission or the Companies (i.e., 10.25%).
465. In its final argument, ARC et al. stated that it had re-calculated TELUS Québec's proposed Utility Segment ROE using a 6.0% long-term Canada bond rate, a beta of 0.60 and an MRP of 3.5% on a forward looking basis and 5.0% on a historical Canadian estimate basis. ARC et al. submitted that the resulting cost of equity was less than 10% and, therefore, a rate lower than the 12% proposed by TELUS Québec or the 11% proposed by the Commission was appropriate.

*Analysis of the technical evidence*

466. The Commission has traditionally employed three tests to estimate the cost of equity: equity risk premium, discounted cash flow (DCF) and comparable earnings. Increasingly, however, the Commission has relied upon equity risk premium evidence. The NEB formula has not previously been used by the Commission.

*1) National Energy Board formula*

467. Under the NEB formula, the risk premium increases 0.25% for every 1.0% decline in the long-term Canada bond yield forecast. For example, if the long-term Canada bond yield were 7.0%, then the associated cost of equity would be 11.0% (assuming a risk premium of 4%, as was the case in Decision 98-2). Using the NEB formula, if the bond yield were reduced to 6.0%, the decrease of 1.0% would result in an increase of 0.25% in the risk premium, resulting in a cost of equity of 10.25% (i.e., 6% plus 4.25%).

468. ARC et al. submitted that the Ontario Energy Board, the British Columbia Utilities Commission and the Public Utilities Board of Manitoba all use a formula similar to that of the NEB. In response, TELUS Québec submitted that a number of the companies subject to this approach were dissatisfied with the results and had requested that the approach be reviewed.
469. Although the Commission considers that the NEB formula has merit, it is concerned that this approach assumes that business and financial risk is relatively constant across an industry. The Commission concludes that it should continue to rely on the equity risk premium supplemented by an analysis of the business and financial risks faced by the regulated company. In the Commission's view, this approach is more comprehensive in nature as it takes into account both general industry factors, as well as each company's individual circumstances. The Commission also notes that retaining this approach has the benefit of promoting regulatory consistency, as it has been used by the Commission in several previous decisions.

*2) Equity risk premium methodology*

470. TELUS Québec proposed to calculate the cost of equity using the equity risk premium method, noting that this approach was consistent with previous Commission determinations. TELUS Québec also submitted that this approach should be supplemented by an analysis of the company-specific business and financial risks.
471. The equity risk premium method is based on the concept that there is a direct relationship between the level of risk assumed and the return required. Since an investor in common equity takes greater risk than an investor in bonds, the former requires a premium above bond yields in compensation for that greater risk.
472. The equity risk premium method consists of two basic components: the risk-free rate and the equity risk premium. This latter component has two elements – the MRP and the beta. The sections that follow examine these basic components. Together, these components provide a "bare-bones" cost of equity which may then be adjusted by a flotation charge to ensure that the regulated company can raise additional equity without diluting the book value of existing equity.
473. The equity risk premium method to calculate the cost of equity is:

$$R = R_f + B \times (R_m - R_f) + \text{Fltn Cost}$$

Where R is the cost of equity  
 R<sub>f</sub> is the risk free rate  
 R<sub>m</sub> is the market return  
 B is the beta  
 R<sub>m</sub>-R<sub>f</sub> is the market risk premium  
 Fltn Cost is the flotation cost

474. The "bare-bones" equity risk premium proposed by TELUS Québec was calculated based on Canadian and international market data, using historical and forward-looking estimates, over a post-World War II timeframe using an average of compound and arithmetic holding periods. TELUS Québec then adjusted this figure, referred to as the MRP, by the beta, which measures risk as the volatility of an individual stock or portfolio of stocks relative to the volatility of the market. Finally, the company added a flotation adjustment for financial flexibility.

*a) Risk-free rate*

475. TELUS Québec used a risk-free rate of 6.0% in its measure of equity risk premium. In arriving at the 6.0% figure, TELUS Québec used a combination of consensus economic forecasts 3-months forward and 12-months forward of 10-year long-term Canada (LTC) bond yields, longer term forecasts of these bonds from 2002 to 2006, and forecasts of the 30-year U.S. treasury bond. TELUS Québec then compared its results to the rate used by the Commission in Decision [98-2](#) to ensure consistency over time.
476. ARC et al. also used a risk-free rate of 6.0% in its calculation of the equity risk premium.
477. The Commission notes that both parties that addressed this issue used a 6.0% LTC bond rate. The Commission considers this to be an appropriate measure of the long term risk-free rate.

*b) Market risk premium*

478. The primary approach to estimating the required risk premium involves measuring the risk premium for the entire stock market derived from an analysis of achieved market risk premiums. Those market risk premiums are then adjusted to reflect the risk of the benchmark company relative to the market as a whole. This is accomplished through the use of a beta factor. The elements of this approach are discussed in the following sections on holding periods, U.S. data and use of historical and forward-looking data.

*i) Holding periods*

479. TELUS Québec provided data on both a compound and arithmetic holding period basis, using a combination of both in arriving at its proposed estimate. It submitted that consideration of the arithmetic average was appropriate as it recognized market uncertainty, whereas the compound average tended to smooth out any uncertainty over time.
480. The Commission notes that in previous decisions it has not used the arithmetic average on the grounds that it could give undue emphasis to short term variations in the market. The Commission has held that it was appropriate to take a longer term perspective when establishing the equity risk premium. In the Commission's view, TELUS Québec did not justify any modification to this approach. Accordingly, the Commission continues to consider it appropriate to rely on the compound average when calculating the equity risk premium.

*ii) U.S. data*

481. TELUS Québec submitted that the historical risk premiums should not be limited to the Canadian experience but should include an international weighting to reflect the increasing globalization of capital markets. TELUS Québec also submitted that Canadian and international markets should both be utilized as Canadian investors were increasingly concerned with the mediocre performance of the Canadian equity market. TELUS Québec used a weighting of 70% for Canadian and 30% for U.S. data based on the fact that investment in registered retirement savings plans (RRSPs) was limited to 30% foreign content.

482. TELUS Québec submitted evidence indicating that Canadians were increasing their foreign investment, and that there were factors specific to the historical Canadian risk premiums which cast doubt on the premise that historical data was a proxy for investor expectations. In TELUS Québec's submission, these factors included the increasing recognition of the under-performance of the Canadian market, the fact that the market had undergone significant structural changes and the fact that the Canadian market remained significantly less diversified than the U.S. market.
483. ARC et al. submitted that international data might be of use, but that the Commission should not place too much reliance on it as the United States had different monetary and tax policies, both of which affected rates of return.
484. The Commission agrees that markets are becoming global in nature, and that a level of reliance on international data is appropriate. The Commission has used a methodology based on the concept of foreign content within RRSPs in previous decisions, and considers that a split of 70% Canadian and 30% U.S. is appropriate.

*iii) Use of historical and forward-looking data*

485. In developing the MRP, TELUS Québec used measures of both historical and forward-looking risk premiums. In TELUS Québec's submission, consideration of both measures was required to ensure that the resulting estimate would be compatible with current market expectations.
486. ARC et al. submitted that TELUS Québec had used only one source of historical data instead of the three sources that were used in the evidence filed in Decision [98-2](#). ARC et al. argued that this had increased the value of the historical MRP estimates, as compared to the evidence filed in Decision [98-2](#), given that the source used by TELUS Québec contained the largest risk premium estimates of the three possible sources.
487. In defence of its approach, TELUS Québec indicated that the other two sources of data had not been updated since Decision [98-2](#).
488. With respect to the forward-looking measure, TELUS Québec indicated that this was used primarily as a check on historical estimates. TELUS Québec submitted that investment analysts' forecasts had been optimistic, were not sustainable over the longer term, and that these forward-looking risk premiums confirmed that historical averages were likely to understate current investor expectations. TELUS Québec calculated the MRP using these estimates at 8.5% and acknowledged that the estimates were optimistic. Nonetheless, TELUS Québec did not consider it appropriate to adjust them downward.
489. ARC et al. submitted that TELUS Québec's forward-looking estimates were in the magnitude of 6.0% too high and suggested that the Commission disregard these as they were optimistic.
490. The Commission concludes that TELUS Québec's forward-looking data was based on estimates that were optimistic and, therefore, the Commission has placed minimal reliance on

this data.

*iv) Conclusions regarding the Market Risk Premium*

491. By way of summary, TELUS Québec calculated its proposed MRP using an average of compound and arithmetic holding periods, weighted 70% to 30% for Canadian and U.S. data, based on historical returns for the timeframe from 1947 to 2000. The result of this calculation was then compared to the calculation using forward-looking data for reasonableness. In the end, TELUS Québec proposed an MRP of 6.5% to 7.5%.
492. ARC et al. submitted that an MRP of 3.5% would be appropriate on a forward-looking basis and that a 5.0% MRP would be appropriate on a historical basis.
493. In accordance with the conclusions set out above, the Commission is of the view that the MRP should be calculated using a compound average holding period, based predominantly on historical data using a 70/30 split between the Canadian and U.S. experience. The Commission has made adjustments to the calculations submitted by both ARC et al. and TELUS Québec to reflect this approach. On the basis of these adjustments, the Commission concludes that an appropriate range for the MRP would be 6.0% to 6.5%.

*c) Beta*

494. The beta serves to adjust the MRP to reflect the risk of a benchmark company relative to the market. It indicates the change in the rate of return on a stock associated with a one percentage point change in the rate of return on the market.
495. The beta is measured in two ways – raw or adjusted. The raw (or unadjusted) beta represents the calculated beta using market data, without adjustment. The adjusted beta effectively gives a two-thirds weighting to the raw beta and a one-third weighting to the market beta of 1.0.
496. TELUS Québec proposed that the relative risk recognize total market risk as measured by the adjusted beta. TELUS Québec submitted that this was the most appropriate measure of beta as it was more consistent with relative standard deviations of market returns and the explicit consideration of telephone company (telco) common equity shares' interest rate sensitivity.
497. TELUS Québec proposed an adjusted beta of 0.80 to 0.85 which equates to a raw beta of 0.75 to 0.80. TELUS Québec indicated that its beta was based on Canadian telephone company betas for three five-year periods ending in 1998, 1999 and 2000.
498. ARC et al. submitted that the higher beta estimates provided by TELUS Québec should be disregarded as they were calculated using data which reflected BCE Inc.'s ownership of Nortel Networks Corporation (Nortel) and, hence, did not properly capture the relative risk of telecommunications carriers. ARC et al. also submitted that the beta estimate used by TELUS Québec was too high as it took into consideration the period in which there was vigorous long distance competition and limited local competition. In the view of ARC et al., the period prior to the one used by TELUS Québec would be more appropriate, resulting in a lower beta of 0.60.

499. The Commission has ruled in previous decisions, including Decision [98-2](#), that raw betas are appropriate given that, in the Commission's view, there is no basis in theory for the use of an adjusted beta. In the present proceeding, TELUS Québec has provided no new evidence or arguments that would justify using an adjusted beta. The Commission therefore concludes that, consistent with its previous decisions, it is appropriate to use the raw beta.
500. The Commission notes that betas measured using the Toronto Stock Exchange (TSE) Telco Index have been used in past decisions. The Commission agrees with ARC et al. that the use of the Telco Index, including BCE Inc., is not appropriate as it would skew the results due to the impact of the ownership of Nortel. The Commission is of the view that the Telco Index (less BCE Inc.) is the best basis for determining the beta. The Commission is also of the view that a five-year average (1996 to 2000) is an appropriate measure as it encompasses a period that is long enough to smooth out any distortions in the data that may occur. Using this data results in a beta of 0.72 to 0.76.

*d) Flotation costs*

501. TELUS Québec submitted that an adjustment for financing flexibility was required to permit a company to recover all costs that would be incurred to issue additional stock, if necessary, without harming its existing shareholders. TELUS Québec also submitted that its proposed adjustment of 50 to 75 basis points would compensate for flotation costs plus two additional considerations – a margin for unanticipated capital market conditions and a recognition that regulation continued to be a surrogate for competition.
502. Other parties did not comment on this issue.
503. The Commission is of the view that firms should only be able to recover legitimate flotation costs that are a necessary cost of doing business. In past decisions, the Commission allowed a flotation cost adjustment of between 20 to 30 basis points to recognize these costs. The Commission considers that this level of recovery is still appropriate and, consequently, does not accept TELUS Québec's proposed higher range.

*3) Direct estimates of risk premium*

504. An alternative approach used to estimate the equity risk premium develops the risk premium for a particular stock or industry directly, either by reference to the stock's or the industry's market performance or by reference to a series of DCF studies. DCF-based estimates of the equity risk premium rely on the projected dividend yield plus investor expectations of long-term growth.
505. TELUS Québec calculated direct estimates using both of the methods described in the previous paragraph.
506. First, TELUS Québec estimated the equity risk premium by using a direct measure of telco risk premium. This was accomplished by measuring the historical risk premium using (1) the TSE 300 Telco Index (2) the TSE 300 Utility Index and (3) the TSE 300 Gas and Electric Index. TELUS Québec submitted that the results obtained through this measure of risk premium were in line with its proposed amount.
507. Second, TELUS Québec provided a DCF estimate that consisted of the forecast dividend yield plus expected growth. TELUS Québec submitted that the results of this method further

supported its proposal.

508. With respect to TELUS Québec's DCF estimate, ARC et al. submitted that TELUS Québec had based its dividend yield on an inappropriate timeframe and that the dividend yield should have been 2.0%, not the 5.4% that TELUS Québec used. ARC et al. argued that this correction would result in a cost of equity for the market as a whole of 9.0% (made up of a dividend yield of 2.0% and a growth rate of 7.0%).
509. The Commission is of the view that TELUS Québec's direct measure of the telco risk premium should be discounted as it relied predominantly on stock market indices of other industries whose overall risk exposure would be different from that of the incumbent telephone companies. The Commission also notes that TELUS Québec's DCF estimate was put forward solely to support or confirm the results of other tests. Accordingly, the Commission has placed minimal reliance on this direct approach to estimate the company's equity risk premium.

#### *4) Risk assessment*

510. Business risk encompasses the basic operating characteristics of a firm which can lead to variations in operating income or affect the ability of the firm to recover and obtain a return on capital investment. Financial risk is the additional risk exposure resulting from the use of leverage, which to the common shareholder includes both preferred stock and debt. Business and financial risk are factors which are generally considered when assessing the cost of equity.
511. TELUS Québec submitted that the business risk of its Utility Segment was not materially different from the total risk faced by the other large ILECs. The company based this conclusion on a large number of factors.
512. According to TELUS Québec, its Utility Segment had a lesser ability to expand demand than either toll or full service providers. At the same time, it had greater capital intensity and operating leverage than toll networks, but less ability to offset market share loss than toll providers. TELUS Québec also argued that its Utility Segment faced a high risk of obsolescence and a lack of risk-reducing benefits as among technologies and services compared to a larger, more integrated telephone company. In TELUS Québec's view, it faced strong potential competitors in the new converged market for services.
513. On the question of financial risk, TELUS Québec submitted that its financial risk had been similar to that of Aliant Telecom, Bell Canada and TELUS over the last five years. In arriving at this conclusion, TELUS Québec indicated that its debt rating was investment grade, its capital structure was forecast for 2001 at 55.8% common equity (approximately at the level of 55.0% deemed by the Commission to be acceptable for the other large ILECs), and its interest coverage ratios were within an acceptable range.
514. None of the other parties to this proceeding commented on the risk evidence filed by TELUS Québec.
515. The Commission agrees with TELUS Québec's assessment of the business and financial risks faced by the company.

#### *Conclusion on cost of equity for TELUS Québec*

516. In light of the foregoing, the Commission concludes that a going-in Utility Segment ROE of 11.0% is appropriate for TELUS Québec. This ROE is based on a risk-free rate of 6.0%, an MRP of 6.0%-6.5%, a beta of 0.72 to 0.76 and a flotation adjustment of 20 to 30 basis points. The Commission has also determined that no adjustment to this ROE is required as a result of the risk assessment set out above.

#### **Risk differentials between the Companies**

517. The final issue considered by the Commission relating to the cost of equity was whether Télébec and TELUS Québec faced different risks and, hence, should have different costs of equity.
518. In Decision [97-21](#), the Commission set the current ROE ranges for Télébec and TELUS Québec. These were based on the same risk-free premium and the same business risk premium for each company. The overall range for Télébec was slightly higher due to a higher financial risk premium for this company.
519. In PN [2001-36](#), the Commission proposed to use the same Utility Segment ROE for both Télébec and TELUS Québec, namely the 11% ROE used for the other large ILECs in Decision [98-2](#).
520. In the present proceeding, Télébec submitted that the going-in Utility Segment ROE of 11% proposed by the Commission would be appropriate. The Commission has determined above that the going-in Utility Segment ROE for TELUS Québec should be 11%. Accordingly, the Commission concludes that there is no basis for setting different going-in ROEs for Télébec and TELUS Québec.

#### **Conclusions on cost of equity**

521. In light of the above, the Commission determines that the going-in Utility Segment ROE for both Télébec and TELUS Québec should be 11.0%. The Commission has calculated the Companies' going-in revenue requirement on this basis.

#### **Net annualized revenue impacts of pending and planned tariff items**

522. As discussed above, in PN [2001-36](#) the Commission directed Télébec and TELUS Québec, when calculating their going-in revenue requirements, to include the net annualized revenue impacts of any pending and planned tariff items as one of the required incremental adjustments to their final 2001 contribution requirements.
523. Télébec and TELUS Québec have included \$0.6 million and \$1.1 million, respectively, in the calculation of their going-in revenue requirements to reflect the net annualized revenue impacts of any pending and planned tariff items.
524. Other parties to this proceeding did not comment on this issue.
525. In the Commission's view, Télébec and TELUS Québec have properly included the net annualized revenues arising from any pending and planned tariff filings as part of their going-in revenue requirement calculations.
526. Accordingly, in setting the Companies' going-in revenue requirements, the Commission has accepted Télébec's and TELUS Québec's proposed net annualized revenue impacts of pending and planned tariff items of \$0.6 million and \$1.1 million, respectively.



**Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc.  
Application to Determine the Appropriate Return on Equity  
and Capital Structure and to Review and Revise the  
Automatic Adjustment Mechanism  
Decision  
March 2, 2006**



**IN THE MATTER OF**

**TERASEN GAS INC. AND  
TERASEN GAS (VANCOUVER ISLAND) INC.  
APPLICATION TO DETERMINE THE APPROPRIATE  
RETURN ON EQUITY AND CAPITAL STRUCTURE  
AND TO REVIEW AND REVISE THE  
AUTOMATIC ADJUSTMENT MECHANISM**

**DECISION**

**MARCH 2, 2006**

**Before:**

**R.H. Hobbs, Panel Chair  
R.J. Milbourne, Commissioner  
A.J. Pullman, Commissioner**

## 6.0 RETURN ON EQUITY

### 6.1 The Applicants' Methodology

This Section considers the appropriate return on equity for a benchmark low-risk utility, and applies its determination in that regard to the return on equity for TGI and TGVI.

The Applicants introduce the evidence of Kathleen McShane (Exhibit B-1, Tab 2). Ms. McShane says that a fair return is one that provides a utility with the opportunity to:

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

According to Ms. McShane these criteria give rise to two separate standards, the capital attraction standard and the comparable returns, or comparable earnings, standard. Ms. McShane states that the two standards require the use of three tests used to develop her recommended fair return on equity for a benchmark low-risk utility:

- *Equity Risk Premium (ERP)* test, which is a generic term for a methodology that estimates the cost of equity as the sum of a directly observable yield on a security such as a government or corporate bond and a premium to compensate for the additional equity risk assumed by the investor;
- *Discounted Cash Flow (DCF)* test, which measures the equity investors' expected return as the dividend yield on a stock or group of stocks plus the expected growth in dividends in the long term; and
- *Comparable Earnings (CE)* test, which measures the experienced returns on book equity of firms that are of similar risk to the utility for which the regulator is setting the fair return (Exhibit B-1, Tab 2, lines 720-734).

#### 6.1.1 ERP Test

Ms. McShane uses three methodologies to derive her equity risk premium as follows:

- Risk-Adjusted Equity Market
- Historic Utility
- DCF based

### Risk-Adjusted Equity Market

Ms. McShane uses the period 1947-2004 to examine the average risk premium experienced in the Canadian, US and UK markets as follows (Exhibit B-1, Tab 2, Schedule 8):

	<b>Stock Return</b>	<b>Bond Return</b>	<b>Risk Premium</b>
Canada	12.1	6.9	5.3
United States	13.2	6.3	7.0
United Kingdom	14.9	8.9	6.0

Ms. McShane uses the arithmetic average that is the sum of each year's return divided by the number of years in the study. Ms. McShane addresses the issue of high bond returns in recent years by substituting her estimate of current long bond yields (5.25 percent) rather than historic average returns. From this she develops an indicated Canadian equity market risk of 6.75 percent, being the mid-point of a range of 6.25 percent to 7.25 percent. Ms. McShane applies a relative risk adjustment factor (beta) of 0.65, which she derives by developing "raw" betas from Canadian data which exclude Nortel. She then adjusts her "raw" beta using a formula used by major commercial suppliers of betas, which gives two-thirds weight to a stock's own beta and one-third weight to the market mean beta of 1.0. Thus, she arrives at a benchmark utility equity risk premium of 4.0 percent (Exhibit B-1, Tab 2, lines 1577-1968).

### Historic Utility Equity Risk Premium

In Schedule 16 of her evidence, Ms. McShane observes actual utility equity (arithmetic average) risk premiums as follows:

1956-2004	Canada – gas and electric	4.4%
1947-2004	US – gas	6.0%
1947-2004	US – electric	5.0%

From which she determines that an appropriate historic utility equity risk premium for a benchmark low-risk utility to be in the range of 4.25-5.0 percent or approximately 4.75 percent (Exhibit B-1, Tab 2: lines 1985-2000).

### DCF-Based Equity Risk Premium Test

Ms. McShane compares the estimated DCF cost of equity of seven US gas utilities over the corresponding 30-year U.S. Treasury yield on a monthly basis for the years 1993-2004 (Exhibit B-1, Tab 2, Schedule 18). This test indicates an average risk premium over the period of 4.2 percent. Since the corresponding bond return is 6.0 percent, Ms. McShane increases the observed premium to 4.7 percent to reflect her forecast yield on a 30-year (Canadian) government bond of 5.25 percent. At the same time, she tests the relationship between the spreads between U.S. long-term A-rated utility and 30-year U.S. Treasury yields and determines a utility risk premium of 4.3 percent. Ms. McShane settles on a mid-point of 4.5 percent for her DCF-based ERP test (Exhibit B-1, Tab 2, line 2140).

### Financing Flexibility Allowance

To each of the three risk premiums developed by her tests, Ms. McShane adds a Financing Flexibility Allowance of 50 basis points. This allowance is intended to cover three aspects:

- flotation costs;
- a cushion for unanticipated capital market conditions; and
- a recognition of the fairness principle.

Ms. McShane's ERP test results are summarized as below (Exhibit B-1, Tab 2, p. 83):

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

#### 6.1.2 DCF Test

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

Due to the dearth of quoted utility companies in Canada and analysts' forecasts thereof, Ms. McShane applies her test to a sample of 14 relatively low-risk U.S. gas and electricity utilities that were included to serve as a proxy for a Canadian low-risk benchmark utility (Exhibit B-1, Tab 2, Appendix C). To determine investors' growth expectations, Ms. McShane uses both Value Line (an independent research firm) forecasts of earnings growth as well as I/B/E/S (the major data base that provides long term consensus forecasts) consensus forecasts of utility equity analysts. Ms. McShane found no evidence of upward bias in the I/B/E/S consensus forecasts; indeed, she cites studies which find that investment analysts' forecasts serve as a better surrogate for investors' expectations than historic growth rates.

In her first application of the DCF model, Ms. McShane applies a constant growth DCF model to her sample which results in a DCF cost of equity of 8.8 percent (Exhibit B-1, Tab 2, Schedule 20). Her second application of the DCF model uses analysts' forecasts for five years and a normal growth in the U.S. economy of 5.5 percent per annum thereafter, which gives a result of 9.7 percent (Exhibit B-1, Tab 2, Schedule 22). Ms. McShane estimates an indicated "bare-bones" required return on equity in the range of 8.8-9.7 percent or approximately 9.25 percent. To her "bare bones" required return Ms. McShane adds 50 basis points. This is the same amount as that added to her ERP test, but arises for different reasons. Ms. McShane finds a "disconnect" between the DCF return investors expect to earn on the current market value of their common equity investments and what they expect the utility to earn on the book value of their investments. To mitigate this problem, she augments her DCF result by 50 basis points (Exhibit B-1, Tab 2, line 2393).

### 6.1.3 Comparable Earnings Test ("CE")

Ms. McShane describes the CE as "arising from the notion that capital should not be committed to a venture unless it can earn a return commensurate with that available prospectively in alternative ventures of comparable risk. Since regulation is a surrogate for competition, the opportunity cost principle entails permitting utilities the opportunity to earn a return commensurate with the levels achievable by competitive firms facing similar risk."

To select a sample of Canadian companies of reasonably comparable investment risk to a benchmark low-risk utility, Ms. McShane takes all 432 companies on the Toronto Stock Exchange ("TSX") in Global Industry Classification Standard sectors 20-30 (being Industrials, Consumer Discretionary and Consumer Staples). From this list she removes companies which, in the period 1993-2003 had i) missing or negative common equity (368 companies); ii) paid no dividend in any year (21 companies); and iii) thinly traded companies, companies with betas > 1.0, companies with returns with a standard deviation of +/- -1 from average, ranked high risk or speculative, or unrated (17 companies) to arrive at her sample of 17 low-risk Canadian industrials

(Exhibit B-1, Tab 2, Appendix D).

Ms. McShane chooses the period 1993-2004 on the grounds that it covers an entire business cycle and should be representative of a future normal cycle. Ms. McShane assesses the possible need to adjust the results of her CE tests based on a review of the 17 companies' bond ratings, stock ratings and adjusted betas. Accordingly she adjusts the results of her CE tests which had indicated average levels of returns on book equity in the 13 to 13.5 percent range, down to "no less than 13 percent" (Exhibit B-1, Tab 2, line 2540).

#### 6.1.4 Summary

To arrive at her indicated return on equity for a benchmark low-risk utility Ms. McShane applies an "indicative" weighting of 75 percent to her market based tests (ERP and DCF) and 25 percent to CE. As Ms. McShane points out "the answer is not going to come out to four places. Cost of equity doesn't lend itself to that level of precision" (T4: 506). Her indicated return on equity for a benchmark low-risk utility is 10.5 percent, or a premium of 5.25 percent over her estimate of a long Canada bond of 5.25 percent (Exhibit B-1, Tab 2, line 2573).

Ms. McShane addresses the ROE for TGVI as follows:

"In my opinion, to equate TGVI to the benchmark low risk utility, an allowed common equity ratio of no less than 45-50% would be required (compared to the range of 35-40% for Terasen Gas). Terasen Gas is proposing a 40% common equity ratio for TGVI. I view the proposal as reasonable; however, the difference between the proposed 40% and the indicated range of 45-50% (mid-point of 47.5%) requires an incremental equity risk premium relative to the benchmark low risk utility return. Applying the same approach as detailed in Schedule 29 for Terasen Gas, the difference between the proposed 40% common equity ratio and a 47.5% common equity ratio warrants an incremental equity risk premium for TGVI relative to the benchmark low risk utility of 60-120 basis points (mid-point of 90 basis points). Thus, the 75 basis point incremental equity risk premium proposed for TGVI is reasonable" (Exhibit B-1, Tab 2, pp. 21-2).

## **6.2 The Intervenors' Methodology**

The Intervenors filed the evidence of Dr. Booth, CIT Chair in Structured Finance and Professor of Finance at the Joseph L. Rotman School of Management at the University of Toronto (Exhibit C2-6). Dr. Booth uses the Capital Asset Pricing Model ("CAPM") to derive his estimate of the MRP, and tests the result with a DCF test of U.S. utilities followed by Standard & Poors.

### 6.2.1 MRP Test

Dr. Booth uses the period 1956-2004 to determine that the Canadian market risk premium of equities over long-term bonds has averaged (on an arithmetic basis) 2.70 percent. Extending the period examined back to 1924 produces a Canadian market risk premium of 5.21 percent. Dr. Booth estimates the current market risk premium to be 4.5 percent.

Dr. Booth examines the betas for utilities based in Canada for a number of five-year periods ending 1984 to 2004, but finds the data distorted by a number of factors, including the market crash of 1987 and the technology boom and bust of 2000 and 2001. Accordingly, for beta he estimates a reasonable range for normal market conditions going forward to be 0.45 to 0.55, which would imply a risk premium in the 2.025 percent to 2.475 percent range, which he adds to his long Canada bond yield forecast of 5 percent to produce an estimate in a range of 7.0 to 7.5 percent.

In addition to his “Classic CAPM” estimate, Dr. Booth uses a two factor CAPM model, which adjusts for estimation problems in the CAPM by directly incorporating the risk of long Canada bonds through a term or interest rate risk premium. The result of this second test produces an estimation of the fair return of 7.25 percent. Dr. Booth places equal weight on both CAPM estimates and took the average (7.25 percent) as being a reasonable estimate. To this estimate he adds a 50 basis point flotation cost allowance to produce a best estimate of 7.75 percent for a 275 basis point utility risk premium (Exhibit C2-6, p. 60).

### 6.2.2 Other Tests

Dr. Booth did not perform any other test to determine a fair return on equity. He did however, examine the DCF estimates for U.S. utilities covered by Standard & Poors for the period 1978-2004 from which he estimates an average return on equity of 10.17 percent from which he deducts the average U.S. Treasury of yield of 7.97 percent to determine a 220 basis point U.S. utility risk premium (Exhibit C2-6, Appendix C).

## **6.3 Discussion**

Considerable evidence was before the Commission Panel as to the most suitable methodology to determine a fair return on equity for a benchmark low-risk Canadian utility. Much of the evidence comprises detailing the shortcomings of each of the methodologies in general and of the witness’s applications of the concepts in particular.



The evidence is that up to the 1960s the principal methodology to determine fair rates of return was CE, as, according to Dr. Booth, the DCF method and the ERP method which was derived from the CAPM, were developed in the 1960s. By the 1980s all three methodologies were in use in Canada. In the early 1990s capital markets in Canada fell into considerable turmoil, causing DCF and CE to give unreliable results, which resulted in the ERP becoming the main, if not the sole, methodology used by regulatory bodies in Canada to establish fair rates of return. The concept became embedded in Canadian regulatory methodology with the adoption by many regulatory bodies of the AAM whereby an individual utility's return on equity could be adjusted each year by reference to the change in the Risk Free cost of capital (namely the forecast long Canada bond yield). The DCF and CE methods have never managed to restore themselves to favour in regulatory bodies' eyes with the result that in Canada's most recent generic cost of capital hearing, neither method was accorded any weight by the AEUB in its determination of a generic return on equity. In the United States the DCF and CAPM methods got their start in the 1970s and have survived nearly unchanged as the primary rate of return methods, with the DCF the virtual default method in practically all U.S. regulatory jurisdictions [Exhibit B-3E (Vol. 4), Appendix 74.1].

In the words of Ms. McShane: "I believe that ... none of the tests is so superior (sic) to the others that it should be discarded in favour of just using one or two tests ... Each test should be viewed as providing some perspective on what a fair return is" (T3: 377).

The Applicants in their submission argue that "A fair and reasonable return is not an arithmetic exercise; no approach is the determination of a fair and reasonable return is perfect. Although the use of a simple test may be appealing in its simplicity, it must be realized that the concept of a fair return is not that simple ... TGI and TGVI submit that the Commission should consider all three approaches and give weight to each ..."

(TGI/TGVI Submissions, p. 35, para. 119).

### 6.3.1 ERP

Conceptually, the ERP methodology has a great deal of appeal to a regulator. It is derived from the CAPM, which was described in Exhibit B-21 being Chapter 7 of *Financial Theory and Corporate Policy* by Copeland and Weston. It requires the derivation of a risk free rate; an observed risk premium, being the difference between returns on common stocks and government bonds; and a factor known as beta, which is the coefficient of a portfolio or stock's volatility compared to the market as a whole. The Applicants outline the following shortcomings of the CAPM as it is applied to the derivation of an ERP:

### Risk-Free Rate

The theoretical CAPM assumes that the risk-free rate is uncorrelated with the return on the market. However, the application of the model typically assumes that the return on the market is highly correlated with the risk-free rate, that is, that the equity market return and the risk-free rate move in tandem.

Similarly, an ROE formula that is predicated on a close tracking between the allowed return and the risk-free rate assumes the risk-free rate and the return on the market are highly correlated. The theoretical CAPM calls for using a risk-free rate, whereas the typical application of the model in the regulatory context employs a long-term government bond yield as a proxy for the risk-free rate. Long-term government bond yields may reflect various factors that render them problematic as an estimate of the “true” risk-free rate, including:

- the yield on long-term government bonds reflects the impact of monetary and fiscal policy;
- yields on long-term government bonds may reflect shifting degrees of investors’ risk aversion; and
- long-term government bond yields are not risk-free; they are subject to interest rate risk (Exhibit B-1, Tab 2, Appendix A, p. 2).

### Equity Market Risk Premium

The equity market risk premium is typically measured largely by reference to historic data. There are a wide range of views on what constitutes an appropriate period for estimating the historic risk premium, on what constitutes the appropriate averaging technique, and on whether various time-specific or country-specific outcomes diminish the reliability of history as a predictor of the future risk premium (Exhibit B-1, Tab 2, Appendix A, p. 3).

A decade by decade review of Canadian historic risk premiums shows a wide range of realized risk premiums, which would indicate the desirability of using longer rather than shorter periods to measure the premiums, as follows:

<b>Time Period</b>	<b>Stock Returns</b>	<b>Bond Returns</b>	<b>Risk Premiums</b>
1940s	10.0%	3.9%	6.0%
1950s	17.0%	0.4%	16.5%
1960s	10.8%	2.9%	7.9%
1970s	12.1%	6.1%	6.0%
1980s	13.1%	13.7%	-0.6%
1990s	11.6%	11.8%	-0.2%
1995-2004	11.2%	10.9%	0.2%
1947-2004 i)	12.0%	6.9%	5.3%
1956-2004 ii)	10.7%	8.0%	2.7%

i) used by Ms McShane

ii) used by Dr Booth (Schedule 1)

In addition, certain problems exist in Canada but not in the United States when it comes to measuring historic risk premium data. The achieved equity market risk premiums in Canada have been reduced by the performance of the government bond market. The change in Canada's fiscal performance over the past decade, leading to the recent low levels of interest rates, indicates that the historic returns on long-term Government of Canada bonds overstate likely future bond returns, and therefore understates the future equity risk premium (Exhibit B-1, Tab 2, Appendix A, p. 4).

The Canadian equity market is less liquid, less diverse and less populous than the U.S. equity market. The performance of the Canadian equity market as the "market portfolio" has been unduly influenced by a small number of companies (Exhibit B-1, Tab 2, Appendix A, p. 4).

Canadian equity data were "backcast" in 1976 upon the creation of the TSE 300 back to 1956. Accordingly, data prior to 1956, and to a lesser extent data between 1956 and 1976, may be less consistent (T6: 926).

### Beta

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

- the assumption that all risk for which investors require compensation can be captured and expressed in a single variable;
- the only risk for which investors expect compensation is non-diversifiable equity market risk; no other risk is considered (and priced) by investors; and

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

Use of beta as the relative risk adjustment allows for the conclusion that the cost of equity capital for a firm can be lower than the risk-free rate, since stocks that have moved counter to the rest of the equity market could be expected to have betas that are negative (Exhibit B-1, Tab 2, Appendix A, p. 5).

### 6.3.2 DCF

Dr. Booth points out the shortcomings of the DCF methodology. At page 58 of his testimony he states "It is generally accepted that analysts' earnings forecasts are biased high...This conflict of interest has been most evident in the Internet and Technology fiascos of the late 1990s, when prominent analysts issued strong buy recommendations on the way up and kept them in place on the way down and got sued in the process" (Exhibit C2-6, p. 58).

### 6.3.3 CE

In Appendix B of his evidence, Dr. Booth identifies five basic problems with the earned rate of return, namely:

- It is an accounting rate of return.
- It is an average not a marginal rate of return.
- It is earned on historic accounting book equity that does not reflect what can be earned on investments today.
- It is based on non-inflation adjusted numbers.
- It varies with the firms selected in the "comparable earnings" sample (Exhibit C2-6, Appendix B).

## 6.4 **Commission Determinations**

### 6.4.1 Two Standards

The Commission Panel accepts the relevance of two separate standards namely the capital attraction standard and the comparable returns standard in establishing a fair return on equity for a benchmark low-risk utility. One standard does not trump the other, neither is one subsumed by the other. Accordingly, the Commission Panel will seek to give weight to each of the three methods placed before it in determining a suitable return for a benchmark low-risk utility.

#### 6.4.2 Relevance of Other Board Decisions

All parties refer in their evidence and their submissions to decisions of other regulatory boards in Canada concerning fair returns. The JIESC warns of the danger of circularity resulting from a regulatory board “relying on what other boards have done.” The JIESC continues:

“On the other hand, one cannot totally ignore the immense amount of effort that has gone into determining fair returns by the NEB, in its generic ROE proceeding, and the AEUB, in its recent generic ROE and capital structure hearing.

The AEUB hearing is the most recent and largest generic ROE hearing ever held in Canada. It went for 33 hearing days, involved 11 utilities, and heard from six expert witness panels.

The AEUB and the NEB decisions should not be applied blindly by this Commission. However, they should be considered carefully, as should evidence of market acceptance of the allowed returns, and the acceptability of their awards to investors.” (JIESC Submission, pp. 7-8)

At the November 2005 consensus risk free rate for 2006 of 4.79 percent the returns allowed for 2006 under current mechanisms are as follows:

BCUC – Terasen Gas Inc.	8.29%
NEB – Generic	8.89%
AEUB – Generic	8.93%
Ontario*	8.71%
Newfoundland	8.77%

\* October 2005 Consensus  
Source: Exhibit B-26

The Commission Panel’s view is that it holds generic hearings into a fair return on such an infrequent basis, that there is little danger of circularity should it consider the returns allowed in other jurisdictions to ensure that the return it allows for 2006 is in line with returns allowed to benchmark low risk utilities in other jurisdictions.

#### 6.4.3 Globalization

The Applicant states that since 1994 “Globalization of capital markets means that Canadian utilities are competing for capital with alternative investments world-wide. Globalization of capital markets provides Canadian investors opportunities for higher returns at similar risk levels than available in the domestic market. The returns allowed for Canadian utilities need to recognize that Canadian investors’ opportunities are not limited to domestic investments” (Exhibit B-1, Tab 2, p. 5).

Dr. Booth submitted a monograph propounding the thesis that globalization or diversification reduces risk and market risk premium in both markets (Exhibit C2-6, Appendix D).

Dr. Booth, under cross-examination, states, “I generally believe that the US estimates both for the market risk premium and the US estimates from US regulated gas and electric utilities are higher than they would be for Canada. ... I would say that they’re too high, which means that you cannot take them directly and apply them in Canada. ... I would say they’re indicative, but my personal opinion would be that they are too high” (T6: 820).

During cross-examination Ms. McShane stated “And so there are a couple of different points: one, that there are opportunities (sc for investors to commit capital globally) and two, that in measuring the risk premium, we need to look beyond Canadian data” (T4: 424).

The Commission Panel agrees with this bifurcation. On the first issue the Commission Panel agrees that while it is now possible for Canadian investors to commit their entire retirement savings capital offshore, there is no evidence that they have been in a huge hurry to do so. Canadian investors face a considerable foreign exchange risk when investing offshore and the Commission Panel does not believe that they set this risk aside on the grounds that, in a perfect world, it should be capable of being hedged or otherwise diversified away.

The Commission Panel is not convinced that the Federal Government’s relaxation of foreign content rules in retirement portfolios should be a reason to increase the equity return of a benchmark low-risk utility.

As to the second issue, the Commission Panel is prepared to accept the use of historical and forecast data of U.S. utilities when applied as a check to Canadian data; as a substitute for Canadian data when those data do not exist in significant quantity or quality; or as a supplement to Canadian data when Canadian data give unreliable results. The Commission Panel bases this view on the fact that the U.S. and Canadian economy and capital markets are closely integrated.

#### 6.4.4 Market to book ratios and acquisition premiums

In his evidence, Dr. Booth addresses the issue of market to book ratios of utility companies as follows:

“This process is akin to someone investing in a savings account where a judge has to determine the correct savings rate each period that can be withdrawn from the fund. The important implication is that if the judge (regulator) is successful then the savings will always be worth their original investment. This is the meaning of the basic result in finance that fair means that the market to book ratio equals one. The only thing different about utilities, as compared to the savings example, is that there is some very minor business risk” (Exhibit C2-6, p. 74).

In Schedule 30 of his evidence, Dr. Booth graphically tracks the market to book ratios of a number of utility holding companies in Canada over the period. In addition, he observes the premiums paid by companies to acquire utility companies or utility assets and reaches the conclusion that regulatory bodies have been overly generous in their allowed returns on equity. In particular the Intervenors point to the acquisition of the shares of TI by KMI at an estimated market to book ratio of 2.7 to 1 to demonstrate that the Commission's formulaic approach to setting returns on equity has been overly generous and demonstrates that no upward revision to the existing ROE is warranted. Indeed, they argue that the Commission Panel accept Dr. Booth's recommendation, which would lower the benchmark return on equity.

Market to book ratios are a function of a stock's price divided by the book value of a share of its common equity. A stock's price is a function of what the market will pay for it and is either expressed by analysts and investors as a multiple of earnings or in a utility's case as the yield on its dividend. In neither case has a regulatory body any degree of control over the quantum of either the multiple or the actual dividend paid (McShane, T3: 139). Evidence before the Commission Panel is that market to book ratios of utilities (especially in the U.S.) have been below parity in the past. The Commission Panel agrees with Copeland and Weston (see Section 6.3.1 above) that all investors select efficient portfolios and that the market is simply the sum of all investors' individual holdings. Accordingly, the price paid for a utility share will vary over time depending on the changes in individual risk tolerances. The proper application of the CAPM model should remove the possibility of over generous returns, but over time will not prevent the market from valuing a utility's stock at prices which are both greater than and lower than its book value.

So far as concerns acquisition premiums, the Commission Panel has addressed the Kinder Morgan acquisition elsewhere in this Decision. So far as concerns other acquisitions the Commission Panel is mindful of the AEUB Panel's decision:

“The Board agrees with the Applicants that there are a number of factors impacting market-to-book ratios of utility holding companies and that one has to be cautious making inferences regarding the regulated utilities. The Board also agrees that there may be strategic factors affecting the price that is paid to acquire a utility.

...The Board also recognizes that, in some cases, a premium might be paid for regulated assets in anticipation of significant future growth in rate base, to achieve geographic diversification or to obtain a foothold in a new market. However, parties are also aware of the constraints placed on regulated utilities with respect to affiliate transactions, particularly those with unregulated affiliates.

In the absence of such strategic factors, the Board would not expect a prudent investor to pay a significant premium unless the currently awarded returns are higher than that required by the market. The Board acknowledges the views of some parties that payment of a premium over

book value for a regulated utility indicates that the recent ROE awards may have been higher than required by the market. The Board is not aware of the strategic factors that may have affected the price paid to acquire Alberta utilities in recent years. Nevertheless, the experience regarding the market-to-book values of utilities and the experience ... in recent years gives the Board some comfort that its recent ROE awards have not been too low” (Exhibit A3-1, p. 28).

The Commission Panel agrees with the AEUB that acquisition premiums may result from a number of strategic factors which are unrelated to the establishment of a fair return for a benchmark low-risk utility. The Commission will continue its practice of allowing utilities subject to its jurisdiction, to earn a fair return on the value of their investment in property, the value of which does not include a premium on acquisition.

#### 6.4.5 ERP

It is clear the ERP methodology is the “gold standard” for Canadian regulators and the Commission Panel will give primary weight to its application and results. In doing so, however, the Commission Panel will need to apply judgment to the evidence before it.

#### CAPM Method

##### *Risk Free Rate*

For the purposes of establishing a return on equity, the Commission Panel accepts the consensus 30-year bond yield estimate for 2006, of 5.25 percent proposed by Ms. McShane. In Section 3 of the Decision, the Commission Panel discusses the methodology it should follow in effecting the transition of its present AAM to that which it now finds appropriate.

##### *Arithmetic vs. Geometric Average*

The Intervenors introduced the concept of the use of a geometric, rather than an arithmetical average to calculate the total returns on stocks and bonds (Exhibit C2-6, Appendix E, p. 1-3). The Applicant advocates the use of the arithmetic average, citing Ibbotson Associates “the expected equity risk premium should always be calculated using the arithmetic mean” (Exhibit B1, Tab 2).

The Commission Panel notes that the AEUB in its Generic Cost of Capital decision stated:

“In the Board’s view, when a forecast is based on the historic average, the arithmetic average MRP represents the best estimate of the short-term return and the geometric average represents the best estimate of the long-term return. The Board has not been persuaded that it should change its practice of using the arithmetic average. Consequently, the Board will maintain its



practice of using the arithmetic average rather than the geometric average” (Exhibit A3-1, p. 19).

Accordingly, the Commission Panel accepts the use of the arithmetic average for the purpose of determining the MRP in this hearing.

*Market Risk Premium (MRP)*

The Commission Panel observes that the evidence before it consists of the following average Market Risk Premium percentages:

		<b>Canada</b>	<b>US</b>
Applicant	1947-2004	5.3	7.0
Intervenor	1956-2004	2.70	4.65

and that both witnesses make adjustments to these results to arrive at their recommendations. In the Commission Panel’s view a MRP of 5.8 percent is appropriate, given the Canadian experienced premiums since the Second World War, adjusted upwards in part to recognize both the fact that bond returns will most likely decrease in future years, and in part to recognize U.S. returns. Dr. Booth’s two-factor model is not helpful in assisting the Commission Panel in determining an appropriate MRP.

*Beta*

The Commission Panel agrees with the evidence that the estimation of betas using actual five-year data ending December 31, 2004 (five years being the typical period for calculating betas) would give unreliable results given the technology boom followed by the bust in the years 2000 and 2001. Both witnesses were obliged to make considerable adjustments to arrive at recommended betas, Ms. McShane to her 0.60 to 0.70 and Dr. Booth to his 0.45 to 0.55. The Commission Panel believes that an appropriate estimate of beta or the relative risk factor of a benchmark low risk factor versus the overall equity market is 0.50. The Commission Panel is hopeful that such adjustments will not be necessary since the five-year data no longer include the technology boom/bust.

### Historic Utility Risk Premium Test

The Commission Panel believes that this test avoids the estimation of a beta and thus suffers from one less shortcoming than the MRP test. On the basis of Ms. McShane's evidence that utility risk premiums in Canada over the period 1956 to 2004 were 4.4 percent, the Commission Panel is prepared to give weight to this number in arriving at its ERP.

### DCF-Based Equity Risk Premium Test

The Commission Panel believes that Ms. McShane's sample of seven U.S. A-rated pure-play gas distribution companies, which indicates an average risk premium of 4.2 percent, is too small to use other than as a check on her other findings.

### Financing Flexibility Adjustment

Both Ms. McShane and Dr. Booth add a Financing Flexibility Adjustment of 50 basis points to their ERP test results. In Ms. McShane's view the adjustment is necessary to cover flotation costs; a cushion for unanticipated capital market conditions and recognition of the fairness principle (Exhibit B-1, Tab 2, line 2160). Dr. Booth added a 50 basis point flotation allowance (Exhibit C2-6, p. 50). Both witnesses agree that the ERP test produces a bare bones cost of capital which should result in a market to book ratio of one. In Ms. McShane's words, "At a minimum, the financing flexibility allowance should be adequate to allow a utility to maintain its market value, notionally, at a slight premium to book value, i.e., in the range of 1.05-1.10. At this level, a utility will be able to recover actual financing costs, as well as be in a position to raise new equity (under most market conditions) without impairing its financial integrity" (Exhibit B-1, Tab 2, p. 82).

Dr. Booth observes that flotation costs can be calculated using the constant growth model and that the allowance could vary depending on a firm's dividend payment ratio and the ability to expense certain issue costs for tax purposes. He does, however, note at page 50 of his evidence "Note that with 5% issue costs, the idea is that the stock should sell at a market to book ratio of 1.053, so that it will net out to book value on any new issue. With utility market to book ratios vastly in excess of 1.052 it is difficult to rationalize any flotation cost allowance, since it is unlikely that there will ever be any dilution" (Exhibit C2-6, Footnote 19).

He concludes "However, I normally add 50 basis points as a cushion to the direct estimates in line with this (sic) practice of many Boards" (Exhibit C2-6, p. 50).

The Commission Panel notes that this issue received some attention during the AEUB generic hearing, but that it was not enough to convince the AEUB to change the 50 basis point flotation cost allowance used in recent decisions (Exhibit A3-1, p. 29).

The Commission Panel tends to agree that it is difficult to rationalize any flotation cost allowance since there was little, if any, evidence placed before it of utilities trading at market to book ratios, which would justify a flotation cost allowance addition to their return on equity. Elsewhere in this decision the Commission Panel addresses market to book ratios and the need to establish a fair rather than lowest possible return. Accordingly, the Commission Panel will not automatically add a 50 basis point surcharge to whatever return it deems appropriate, but will exercise its judgment each time.

#### 6.4.6 DCF Test

The Commission Panel notes that the DCF test is the most widely used test by regulatory bodies in the United States. Of the three methodologies before it, the DCF test is the only one to use current and prospective data to derive its results. The major criticism of the DCF method is that it relies on analysts' forecasts, which may be biased upwards. The Commission Panel does not find Dr. Booth's comments helpful in that his observations mostly cover U.S. technology analysts and the scandal on Wall Street concerning inappropriate analyst behaviour in an investment banking milieu. The Commission Panel finds that Dr. Booth's use of DCF estimates for U.S. Utilities covered by Standard & Poors, which included "multi-utilities" and energy marketing firms, should not be used as representative of U.S. utility returns. The Commission Panel is more persuaded by Ms. McShane's evidence which compares Value Line and I/B/E/S forecasts and finds no upward bias in the latter. Accordingly, the Commission Panel will give weight to Ms. McShane's first DCF Test, which yielded an indicated return of 8.8 percent. The Commission Panel agrees that this is a "bare bones" cost of equity, to which the addition of a "pure" flotation allowance of 25 basis points is required.

#### 6.4.7 Comparable Earnings

Ms. McShane continues her practice of including in her evidence a study of the returns on book equity earned by a sample of low risk Canadian industrials in the period 1993-2004. This would suggest that low risk companies in Canada are earning an average of approximately 13 percent on their book equity.

On cross-examination, Dr. Booth agreed that some of the "problems" with the CE test also appear in the process of setting rates under regulation, notably that both use an accounting rate of return; it is an average, not a marginal, return; it is based on historic book equity; and based on non-inflation adjusted numbers. This leaves

the sample selection itself. The Commission Panel recognizes that the sample selection can lead to very different results, which is why regulatory bodies are reluctant to re-embrace Comparable Earnings.

Dr. Booth reminded the Commission Panel that the last jurisdiction in Canada to use Comparable Earnings used to adjust the results as follows:

“And Dr. Cannon tended to be the board (sc OEB) witness and he would do comparable earnings with market-to-book adjustments. And stretching my memory, but Ms. McShane I think estimated correctly that you’d look at rates of returns and try to work out what these rates of returns from non-regulated first would be if they had to have a market to book ratio of 1.5 or 1.2, which was sort of the target for regulated firm” (T6: 935).

The Commission Panel believes that there is not enough evidence before it to determine if such an adjustment is merited or how it might be accomplished. The Commission Panel is of the view that for these reasons it can give little or no weight to Ms. McShane’s CE test results. However, the Commission Panel is not convinced that the CE methodology has outlived its usefulness, and believes that it may yet play a role in future ROE hearings.

#### 6.4.8 Conclusion

In the Commission Panel’s view, the suitable return on equity for a benchmark low-risk utility is 9.145 percent, assuming a 30-year long Canada bond yield of 5.25 percent, for a premium of 3.895 percent.

### 6.5 **Impact of the Commission Panel’s Determination**

#### 6.5.1 Impact on TGI

The Commission Panel determines that TGI is the benchmark low-risk utility. For 2006 TGI’s ROE will be 8.80 percent viz 9.145 minus  $(.75 * (5.25 - 4.79))$ , on an equity component of capital structure of 35 percent, which the Commission Panel earlier determined to be appropriate. Based on Exhibit B-13, the Commission Panel believes the impact on TGI’s 2006 revenue requirement will be a net increase of \$1.9 million over TGI’s approved 2005 revenue requirements, as follows:

	<b>\$ million</b>
Increase in capital structure to 35%	4.742
Decrease in ROE to 8.80% from 9.03%	<u>(2.842)</u>
	<u>1.900</u>