Q: Reference: Appendix A:

With respect to NP-CA-72, please provide in respect of each of the board decisions referenced, the relevant extracts wherein the Board commented upon the evidence and recommendations of Dr. Cannon.

A: The requested board-decision and settlement excerpts are attached.

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

basis point "cushion" above their estimates of the cost of attracting capital for these utilities. Only Dr. Booth testified in the hearing but he adopted the joint prefiled evidence.

In their report, Drs. Booth and Berkowitz came to their ROE recommendation by applying two versions of the ERP test and giving equal weight to the results. Their first ERP test was the single-factor Capital Asset Pricing Model (CAPM), while their second ERP test relied on a two-factor model which differentiated between the systematic risk due to changes in the equity market and changes in security returns due to fluctuations in interest rates. 72

Their application of the CAPM model yielded an ROE in the range of 8.02% to 8.47%. This was based on their assessment that (1) the market risk premium is now 4.5% and (2) a reasonable range for the beta risk of an average-risk regulated Canadian utility is 0.45 to 0.55. 73

Applying their two-factor model, which incorporates a term premium estimate of 1.00%, produced an ROE in the range of 7.66% to 7.74%. 74

In further support of their proposed benchmark ROE of 8.5%, Drs. Booth and Berkowitz produced DCF test results, based on a sample of U.S. utilities, that pointed to an ROE in the range of 7.89 to 8.57%. 75

In testimony, Dr. Booth indicated that he did not see a need to move away from the Board's ROE Guidelines, even though their analysis suggested that the ROE Guidelines produced an ROE that was more generous than it needed to be. In their report, Drs. Booth and Berkowitz stated their belief that the 75% adjustment factor was a reasonable compromise between (a) assuming that the overall required return on the stock market is independent of long-term Government of Canada bond yields implied by a 50% adjustment coefficient, and (b) assuming that the riskiness of the long-term Government of Canada bond relative to the equity market is constant, as implied by a 100% adjustment factor. 76

Finally, Drs. Booth and Berkowitz pointed out that the market-to-book-value ratios of all Canadian utilities, save one, were well in excess of 1.0. They stated that this was a clear indication that utilities have not suffered a loss of financing flexibility since Canadian regulators moved to automatic ROE adjustment mechanisms based on long-term Government of Canada bond yields, beginning in 1994. 77

Dr. Cannon 78

Dr. Cannon was retained by the Board to provide additional evidence on the ROE issues. He prepared a report that was provided to all parties and he answered interrogatories on his evidence. He also appeared as a witness and was cross-examined by the parties. His expert opinion, as with the other expert witnesses, was provided to the Board entirely on the public record. 79

In his evidence Dr. Cannon concluded that there had been a substantial decline in the equity capital costs for the average-risk Canadian gas utility and for Ontario's major gas distributors since 1996. 80

According to Dr. Cannon, there is no evidence to suggest that the application of the Board's ROE formula methodology had resulted in allowed returns which had violated either the fair return or financial integrity standards of regulatory rate setting. 81

He also submitted that the decrease in ROE under the ROE Guidelines had been less than it would have been, applying the capital attraction standard of regulatory rate setting instead. 82

It was Dr. Cannon's view that an appropriate benchmark ROE for the average-risk Canadian energy utility now lies in the range of 7.5% to 7.9%, lower than the ROE that would currently be produced under the ROE Guidelines. Dr. Cannon's benchmark ROE recommendation is based primarily on results from using the three equity return tests that Ms. McShane used. In using those tests, he applied different judgment and reached different conclusions than Ms. McShane did. 83

Using his ERP test, Dr. Cannon concluded that an appropriate ROE would be in the range of 6.35-6.55% for the average-risk Canadian energy utility, based on a mid-June estimate of 4.00% for the yield on a truly riskless long-term Canadian asset and a corresponding "all-in ERP" in the 2.35-2.55% range. His utility ERP test findings reflected the substantial decline in the prospective market risk premium in recent years as well as the continuing low relative investment riskiness of the typical energy utility. 84

Applying the DCF test to a sample of Canadian energy utilities produced a benchmark ROE in the range of 7.9% to 8.5%. 85

The CE test, using data for Canadian industrials over the 1991-2002 period produced an ROE of 10.2% for Dr. Cannon. 86

To arrive at his final recommendation for a benchmark ROE, Dr. Cannon applied different weights to his three test results than Ms. McShane. Dr. Cannon weighted his results from the three tests as follows: ERP - 60%, DCF - 15%, and CE - 25%. 87

Dr. Cannon's ROE recommendation reflected an "all-in benchmark ERP" of 2.93% above the long-term Government of Canada bond yields prevailing in mid-June. 88

With respect to the adjustment formula, Dr. Cannon proposed that the adjustment factor applied to changes in the forecast long-term Government of Canada bond yields be reduced to 70%, from the current 75% value. He based this on his view of the sensitivity of his equity return tests to changes in the long-term Government of Canada bond yields and his weighting of the three tests. 89

Dr. Cannon concluded that, all other things being equal, the ROE numbers produced by the ROE Guidelines in recent years are likely too high. 90

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

120

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.

121

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.

122

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.

123

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.

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. 124

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. 125

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. 126

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. 127

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. 128

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 Guidelines is appropriate. 129

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.

137

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.

138

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.

139

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.

140

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.

141

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.

142

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

Paul Vlahos
Presiding Member

Appendix "D" to Rate Order
RP-1998-0001 Distribution
March 15, 1999

Paul B. Pudge

Paul B. Pudge
Board Secretary

DISTRIBUTION RATE ORDER
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3. CAPITAL STRUCTURE AND COST OF CAPITAL

In sections 10.4 and 9.3.4 of its distribution and transmission applications, respectively, the Ontario Hydro Services Company ("OHSC") identified its proposed return on equity ("ROE"). Based on a capital structure of 60% debt and 40% equity, OHSC proposed a 10.0% ROE for both its distribution and transmission business operations. OHSC did not propose any short-term debt in its capital structure, any incremental long-term financing requirements (replacement financing only), or any changes to its rate base and total capitalization between 1999 and 2000. OHSC maintained that its capital structure and proposed ROE are necessary to achieve an "A" credit rating for issuing future debentures and to maintain its financial integrity on a stand-alone basis. OHSC has indicated it has significant borrowing requirements in the near term to replace the current long-term maturing issues. OHSC anticipates issuing approximately $650 million of new debt in 1999 and $749 million in 2000.

Given its assumed need for a single "A" credit rating, OHSC assessed itself against the qualitative and quantitative factors that credit agencies consider in making their rating assessments. In its assessment, OHSC cited positive qualitative factors that include the size and diversity of the service area, the underlying strength and diversity of the Ontario economy, and the nature of the service provided. Offsetting negative qualitative factors include low customer load density associated with the OHSC system, frequent exposure to adverse weather, age and condition of OHSC assets, potential for self-generation by large customers, regulatory uncertainty, and OHSC's lack of a track record, operating as an independent entity. OHSC maintained that overall the risks faced by OHSC are viewed as being average or slightly higher than average for the typical utility.

In terms of quantitative factors, OHSC reviewed rating agency guidelines for financial ratios. OHSC noted that its 60% debt ratio is aggressive compared to rating agency guidelines. Further, OHSC noted that its EBIT interest coverage of 2.6x is within some rating agency guidelines for an "A" rating, but below others. Overall, OHSC noted that with the proposed capital structure and 10% ROE its ratios are within published ranges and are marginally weaker than benchmark standards.

In support of its proposal, OHSC retained Ms. Kathleen McShane, an independent consultant. Ms. McShane submitted an opinion letter that was included in Appendices 7 and U of OHSC's distribution and transmission applications, respectively. In addition, during the technical conference, Ms. McShane submitted a report entitled "Capital Structure and Fair Rate of Return on Common Equity for Ontario Hydro Services Company".

Reed Consulting Group and Dr. William T. Cannon (the "Consultants") were retained by Board staff to review and comment on the proposed return on equity contained in both the transmission and distribution rate applications. Upon review of the limited information initially provided by OHSC, the Board staff requested that the Consultants prepare a cost of equity study based on first principles. The Consultants submitted a report titled, "The Appropriate Return on Equity for the Transco and Disco Business Operations of the Ontario Hydro Services Company." The study was premised on OHSC's proposed 60:40 debt/equity capital structure and OHSC's goal of achieving an "A" credit.

SUMMARY OF MS. MCSHANE'S REPORT

Ms. McShane discussed OHSC's prospective business risks and its proposed capital structure in light of these business risks, OHSC's targeted "solid A" debt rating, and its need for assured access to North American capital markets to refinance maturing debt issues. Ms. McShane viewed OHSC's combined business and financial risk exposure as equivalent to an average-risk utility, and indicated that a fair return of 10.75% was appropriate in the current financial market environment. In support of her 10.75% recommendation, Ms. McShane provided the results of several analytical tests.

Ms. McShane identified rate design, PBR, asset condition, proposals put forth by the Market Design Committee ("MDC"), regulatory "newness", and a large refinancing schedule over the next five years, as specific contributors to OHSC's prospective business risk. Furthermore, it was her view that, from the perspective of an investor with a long-term horizon, the risks specific to 1999/2000 would be over-shadowed by the operating/regulatory environment that will accompany open access (post-2000). Ms. McShane also identified the physical condition of OHSC's assets and the need for a significant refurbishment program as a source of elevated business risk for the Company.

Ms. McShane suggested that PBR programs subject a utility to greater risk than cost-of-service regulation. With respect to rate design, Ms. McShane noted that OHSC's transmission rates are proposed to be a demand charge using forecast peak load. She did not believe the MDC's proposals regarding transmission charges for self-generation and postage stamp rates will be upheld, and this would adversely impact OHSC if they are not accepted by the government.

In addition, she indicated that the IMO will be given significant control over system reliability, so that OHSC's control over transmission operations and maintenance ("O&M") expenditures and capital expenditures and additions is reduced. These factors may create a risk, such that the Company may not achieve the proposed productivity factors that lie at the heart of the proposed transmission PBR program.

Ms. McShane commented on what she saw as OHSC's significant regulatory risk. She argued that OHSC's business risk is elevated in part because "the proposed institutional/regulatory setting is untested". Ms. McShane identified OHSC's large debt refinancing requirements over the next five to seven years as a major risk facing OHSC.

Ms. McShane noted that the above risk factors must be given "considerable weight" and they will be considered by bond rating agencies. She noted that "On balance, to a prospective investor, the business risk of OHSC's regulated operations would be viewed as "average" in comparison to the typical Canadian investor-owned gas/electricity utility". Ms. McShane's assessment appeared to apply to OHSC in its entirety with no distinction between the transmission and distribution operations.

Ms. McShane, employed two types of analytical tests to estimate OHSC's fair return: three Equity Risk Premium ("ERP") tests and a Comparable Earnings ("CE") test. The first ERP test calculated the required utility ERP by first estimating the required risk premium for the market as a whole, and subsequently making a downward adjustment to reflect the relatively lower risk of OHSC. The second ERP test measured the utility risk premium directly from utility data. The third ERP test was a discounted cash flow ("DCF") - based test using data from a sample of U.S. gas distributors. Ms McShane gave primary weight to the ERP tests, but concluded that the Board should also give weight to the CE test.

For her first ERP test, Ms. McShane estimated the market risk premium ("MRP"), defined as the difference between market equity returns and long-term government bond yields, from both historical and forward-looking data. Ms. McShane estimated the required MRP at 6.5% to 6.75% at a forecast long Canada yield of 5.5% to 5.75%. Ms. McShane drew her Canadian data for the MRP from the 1947-1997 period. As part of the same MRP-based ERP test, Ms. McShane calculated a DCF-based 9.0% to 9.25% "forward-looking" Canadian MRP based on the Institutional Brokers Estimate System ("BES") consensus five-year normalized earnings growth rates for a selective group of Canadian firms. Ms. McShane's MRP-based ERP test was also based on adjusted betas for gas/electric utilities. Betas are measures of company risk and measure volatility of company returns relative to market returns. Adjusted betas are essentially the "raw" betas weighted such that they are closer to one. Ms. McShane's justification for such weighting was the notion that betas tend to regress toward one over time. Finally, Ms. McShane's provided an estimate of the MRP based on U.S. historical and forward-looking MRP data.

Ms. McShane's second ERP test relied exclusively on an analysis of achieved historical utility stock market returns in Canada and the United States and the risk premium estimates she calculated from these. Over the 1956-1997 period, average annual returns on the TSE Gas/Electric Index exceeded those for the entire, much riskier TSE 300 Index by 1.0% to 1.8%.

For her third ERP test, Ms. McShane estimated a forward-looking risk premium for U.S. gas distributors. She relied on U.S. gas distributors because she was unable to gather suitable data on investor growth expectations for Canadian gas and electric utilities. She calculated the risk premium as the difference between a DCF estimate of cost of equity, similar to that employed in her first ERP test, and a corresponding long-term government bond yield.

Ms. McShane also employed the CE test using both a sample of low-risk Canadian industrial companies and a supplemental sample of low-risk U.S. industrials. Her results indicate a return for a sample of low-risk Canadian industrials of 11.3% to 11.8% over a complete business cycle (1989-1997). After adjustment for the lower risk of OHSC, Ms. McShane estimated an equity retum requirement at 11.0%. A supplemental sample of U.S. low-risk industrials indicated a tax- and risk -adjusted return requirement of 12.25%. Ms. McShane gave primary weight to the Canadian results and suggested the CE test indicates a return requirement of 11.0% to 11.5%.

Summary of The Consultant's Report

As part of the analysis, the Consultants evaluated the company-specific business and financial risks of Transco and Disco. The Consultants noted that investors must be compensated for long-run and short-run risks. The Consultants identified long-run risks related to a sustained decline in energy consumption brought on by deteriorating economic conditions and/or demographics, which the Consultants noted was not expected.

The Consultants cited volatility in earnings as a primary source of short-term risk. They identified that only variations in O&M expenses are relevant for Transco and Disco. The

Consultants noted that OHSC's aggressive capital plan will serve ultimately to dampen O&M expenses, and that the forecast increase in O&M expense over 1998 levels is significant (i.e., it may provide some protection to OHSC from O&M cost pressures).

With regard to the short-run risk that Transco's and Disco's actual revenues will deviate from their revenue requirement, the Consultants distinguished two periods. In the pre-2001 period, the Consultants noted that Transco and Disco will be guaranteed their revenue requirement until a subsequent Board-approved adjustment. In the post-2001 period, the more traditional considerations for revenue forecast errors will apply - such as fluctuating weather and economic conditions and changes in customer additions and customer mix. The Consultants contended that forecasting errors in these areas are less consequential to Transco and Disco by virtue of the entities' sizes and the diversity of their customer bases.

For the purpose of recommending a return on equity, the Consultants chose to focus on the ERP test methodology: in recognition of the Board's recently expressed preference for ERP-based ROE evidence; to be consistent with the Board's recently promulgated formulaic approach to regulating Ontario gas utilities allowed ROEs; and to promote symmetry of regulatory treatment between the gas and electricity distribution industries, to the extent possible. The Consultants specified their tests using comparative Canadian risk, return, and market valuation data in order to promote the consistency of OHSC's regulatory treatment with Ontario's major gas LDCs and other gas and electric utilities across Canada. The Consultants did not employ a CE test noting that in their view the CE approach does not provide a cost of attracting equity capital and is not consistent. They also noted that the OEB has discounted the usefulness of the CE method in recent years for non-publicly traded investor-owned utilities, and moved away from reliance on its results.

The Consultant's <u>first ERP test</u> focused on estimating gas/electric utility ERPs using utility-return and utility-cost-of-equity-capital data involving historical data from a sample of six publicly traded Canadian gas and electric utilities. This test relies on the fundamental relationships among:

(a) a gas/electric utility's allowed return on common equity ("ROCE");
(b) its actually-achieved ROCE;
(c) its cost of equity capital;
(d) its investor-determined market-value-to-book-value ("MV/BV") ratio; and
(e) average industrial MV/BV ratios.

The above inputs were used to estimate utility costs of equity capital over the 1983-1998 period. The Consultants used regression analyses to assess the validity of the historical relationships of both utility-average costs of equity and ERPs, on the one hand, and long Canada bond yields and utility investment riskiness, on the other. The Consultants found that the bare-bones risk premium for its first ERP test, ranges from 2.51- 2.77%. The specific risk premium was based on the Canadian bond yield forecast but generally applied to a range of Canadian bond yields of 5.0-6.0%.

The Consultants concluded that the business risk of OHSC is less than all companies in the sample for a variety of reasons (e.g. sample utilities owned riskier generation assets or were exposed to greater stranded asset risks). The Consultants found that the business risks of the monopoly wires businesses of OHSC were less than those of the companies in their sample, warranting a 25-30 basis points downward adjustment from their sample-average ERPs for the purpose of establishing an equitable, risk-adjusted ERP for OHSC.

The Consultants noted that OHSC's proposed 40% common equity ratio ("CER") will be six percentage points higher than the average of their gas/electric sample. The Consultants indicated that as a general rule in recent Canadian regulatory proceedings, expert witnesses have estimated that there is a lowering of utility equity capital costs in the range of six to ten basis points for every one percentage point increase in the utility's CER, when such adjustments take place in the neighborhood of CERs of 33% to 40%. By applying this relationship between ROEs and allowed CERs to OHSC's proposed 40% CER, the Consultants incorporated a further downward "bare-bones" ERP adjustment of 36 to 60 basis points, to recognize OHSC's lower financial risk relative to the sample from which the Consultants' initial ERP estimates were determined.

The Consultants also incorporated a 50 basis point upward adjustment to their risk-adjusted, "bare-bones" ERP values to provide a return cushion to reflect OHSC's need to preserve financing flexibility with respect to its future debt and equity issues. This is the same adjustment applied by Ms. McShane. Based on all three adjustments just discussed, a net downward adjustment range of 0.1% to 0.4%, the Consultants found that the all-in ERP for its first ERP test ranged from 2.67-2.11%. The specific risk premium depended on the long-term Canada bond yield forecast but generally applies to long-term Canada bond yields ranging from 5.0-6.0%.

The Consultants' <u>second ERP test</u> was based on risk-adjusting the MRP. The test used three sources of data:

(a) the prospective MRP, relative to the long-term Canada bond yield;

(b) the investment riskiness of the typical Canadian gas/electric utility relative to the typical firm in the TSE 300 Index; and

(c) adjustments to reflect OHSC's relative business and financial riskiness, as well as flotation costs and financing flexibility considerations, resulting in a downward adjustment in the range of 0.1% to 0.4%.

The Consultants estimated the prospective MRP (relative to long-Canada yields) to be in the range of 4.0% to 4.4% based on:

(a) their estimate of the current "maturity risk premium" incorporated in long-Canada yields;

(b) historical data for the realized ERP on the TSE 300 index over the 1958-1997 period;

(c) a consideration of other historical Canadian and U.S. market return and MRP data;

(d) a forward-looking perspective based on the assessed degree of investor enthusiasm in current North American stock markets; and

(e) an analysis of the secular rise in the relative volatility riskiness of long-Canada bond returns versus TSE 300 stock returns.

The Consultants stated that the forward-looking ERP range of 4.0% to 4.4% is 70 to 130 basis points higher than that which would be indicated by relying purely on the historical 40-year average TSE 300 returns of 2.7% to 3.7% by virtue of the Consultants' consideration of factors (c), (d), and (e) above.

The Consultants judged the relative investment riskiness of their gas/electric utility sample to be no more than 50% of that of the typical TSE 300 company (i.e. adjusted risk premium reduced to 2.0% to 2.2%), based on their findings that the average true or unadjusted beta of their sample was 53% of that of the typical TSE 300 firm, while the average standard deviation of investment returns for their gas/electric utilities was only 35% of that of the typical TSE 300 company.

As with their first ERP test, the Consultants made adjustments to the sample-average ERP results in their second ERP test to reflect OHSC's relatively lower business and financial risks, and to recognize flotation-cost and financing-flexibility considerations. The resulting prospective "all-in" ERP range for OHSC indicated by using their risk-adjusted-MRP-based approach to ERP estimation was 1.60% to 2.10%.

The Consultants <u>Capital Asset Pricing Model</u> consisted of three components including the risk-free rate, a beta coefficient, and a market equity risk premium. For the risk-free return, the average yield earned on 10- and 30-year Canadian bonds for the latest 12 months was employed. The beta for the equation was selected with reference to those of U.S. electric utilities. The Canadian equity risk premium was calculated as the difference between the total return to common stock and the income return on long-term government bonds over the last 47 years. The resulting cost of equity of 7.62% is the sum of a 5.39% long-term Canadian bond average and a 2.25% electric utility risk premium appropriate for OHSC.

The Consultants recommended an ROE in the range of 8.00% to 8.25% to reflect the fact that OHSC is a new entity from the perspective of investors. They pointed out, however, that this "newness" is a transitory consideration that will really be relevant only when and if the Ontario Government begins to reduce its stake in OHSC, by which time OHSC will have a "track record" for investors to examine.

As a check on the reasonableness of their recommended ROE range, the Consultants looked at the most recent allowed ROEs for Enbridge Consumers Gas Limited and Union Gas Limited -both "A" rated Ontario gas utilities-in light of the differences in the business and financial risks of these gas LDCs, as compared with OHSC, and the changes in the financial market environment since the time of the gas company rate hearings. The Consultants explained that the difference between: (a) the most recent gas utility LDC ROEs; and (b) their corresponding recommendation for OHSC can be traced to, and fully justified by, the sum of three separate factors, namely:

(1) OHSC's lower overall business risk relative to these two gas LDCs in both the short run and long run;
(2) OHSC's proposed CER of 40%, which is five percentage points higher than the CER allowed to either of these gas LDCs; and
(3) the fact that long-term government interest rates have been trending downward since the time that the gas company ROEs were established and prospective long Canada rates are now lower than those which formed the basis for the gas company ROE awards.

The Consultants then investigated whether allowed ROEs in the neighborhood of 8.00%, in combination with a deemed and actual CER of 40%, would pose a significant threat to the financial integrity of OHSC's Transco and Disco business units or undermine their chances of being accorded "A" ratings on their future debt issues. Based on discussions with the utility analysts at the DBRS and CBRS rating agencies concerning electric distribution utilities in various risk classes, the Consultants concluded that, considering OHSC's large size, its low business risk, its more-than-ample 40% common equity ratio, and its interest coverage ratio ("ICR") at an 8.0% ROE, OHSC's financial integrity on a stand-alone basis, and an "A" rating or better for its debt would be assured if the Board were to allow OHSC's regulated transmission and distribution businesses to earn ROEs in the 8.00% to 8.25% range.

POSITIONS OF THE PARTIES

OHSC was concerned with the business risk analysis presented by the Consultants and their resulting conclusions regarding both: a) the comparative business risk associated with electricity and gas utilities; and b) the degree of business risk currently faced by OHSC compared to other electric utilities. OHSC also had concerns about the tests employed and the external confirmations cited by the Consultants regarding whether OHSC could readily receive an "A" rating.

OHSC felt the Consultants understated O&M and capital risks attributable to electric utilities relative to gas and erred in concluding that gas LDCs are exposed to greater revenue forecasting risk. OHSC stated that the threat from self-generation is real and that while open access will improve the competitiveness of electricity, it will also increase uncertainty.

With respect to OHSC's business risk relative to that of other electric utilities and the sample of gas/electric utilities employed by the Consultants in their analysis, OHSC contended that the Consultants misinterpreted MDC's recommendations, failed to acknowledge regulatory risks associated with OHSC's future, inappropriately focused on the near term and Government ownership of OHSC, and misread the status and overall purpose of OHSC's asset condition assessments and work plans. In addition, OHSC observed apparent inconsistencies in the derivation of the Consultants' conclusions.

While acknowledging that OHSC's capital structure and target credit rating were mandated, Energy Probe believed some sensitivity analysis should be conducted to determine, from a ratepayer's perspective, the optimal capital structure, resulting credit rating, and cost of debt and equity. With respect to ROE, Energy Probe noted that in reference to a peer group of regulated utilities, OHSC's proposal results in a higher rate of return than can be justified by first principles. Energy Probe suggested that, given OHSC's low debt to equity ratio relative to Ontario gas utilities, which implies a reduced overall risk, OHSC's ROE should be 9%.

AMPCO recommended that the return for OHSC not exceed 8.0% and found the information submitted by the Board Staff's Consultants to be more "persuasive" than that submitted by Ms. McShane. AMPCO noted that the quantitative results are sensitive to the data chosen. AMPCO found that the Consultants' selection of analytical models to be more methodical and relevant. AMPCO disputed OHSC's suggestion that it faces long-run business risk and suggested that this is an attempt to exaggerate the risk premium included in the ROE. AMPCO also believed OHSC's arguments regarding asset impairment were ill-founded. With respect to PBR, AMPCO did not believe it created additional risk and instead would be favorable for regulated entities. Finally, AMPCO did not attribute risk to uncertainty in the MDC proposals.

PWU suggested OHSC's ROE is reasonable and indicated that in its view the Consultants misapplied the "stand-alone" principle in that the "newness" of OHSC was not considered as a risk factor for investors. In particular, PWU stated that the Consultants discounted the "newness" factor in that they did not foresee any imminent sale of equity interest, and, at such time, they believed such newness issues would be resolved, and, as such, investors would not face uncertainty. PWU believed the Consultants' approach is flawed because PWU believed OHSC took into account the identity of the owner of the regulated enterprise. PWU disagreed with the Consultants' suggestion that OHSC's business risk associated with bypass is no greater than that for natural gas LDCs. PWU stated the economic incentive for bypass by self generation has arisen due to the relative cost advantage of natural gas over electricity. PWU also considered that the Consultants' proposal would make OHSC an "outlier" among Canadian utilities. PWU noted that, if accepted, the Consultants' recommendation would place OHSC's return as the lowest return of any electrical utility in Canada, and below that approved for Canadian gas utilities.

OAPPA noted that OHSC's expert, Ms. McShane, has consistently recommended a rate of return for Canadian utilities that has exceeded that allowed by the regulator. OAPPA calculated that Ms. McShane's recommendations have, on average, exceeded the return allowed by the regulator by 1.09%. OAPPA also disagreed with OHSC's assessment that its risk profile warranted a 10.0% rate of return. Specifically, OAPPA disagreed that OHSC's risk is heightened because it is a new company with no operating or financial history. OAPPA noted that the roots of OHSC go back into the institutional nature of the old Ontario Hydro. OAPPA considered the creation of OHSC as simply a reorganization of Ontario Hydro. OAPPA submitted that OHSC's rate of return on equity should be the proposed rate of return (10.0%) less the average differential calculated for Ms. McShane's previous recommended and allowed returns (1.09%). This yields a rate of return on common equity of 8.91%. OAPPA also submitted that OHSC's proposed common equity ratio of 40% is "excessive" and should be 35%, which is comparable to the two major natural gas utilities in the province.

Board Findings

CAPITAL STRUCTURE AND COST OF DEBT

The Board accepts a capital structure target of 60% debt and 40% equity and the dual requirements of achieving an "A" credit rating and maintaining its financial integrity on a stand-alone basis. The Board accepts the embedded long-term debt rate and the amount of long-debt proposed by OHSC for inclusion in its capital structure. The Board has adjusted the long-term debt component to balance total capital with rate base. The Board has attributed OHSC's forecast incremental long-term debt refinancing costs to the long-term debt adjustment component, as these funds may conceivably reduce OHSC's capital requirements. Based on OHSC's forecast, the Board has used a rate of 6.3% for 1999 and 6.1% for 2000.

ROE ANALYSIS METHODOLOGY

With regard to the analytical models used to determine the appropriate ROE, OHSC has stated that the Board should set an initial ROE using a broad-based approach, by reference to multiple tests. Moreover, OHSC submitted that it is not necessary that each test employed to set a benchmark return be one that can be used in some subsequent formulaic return methodology. The Board considers it unlikely, due to cost and workload considerations, that a broad-based approach using multiple tests will be used to establish the ROE for each of Ontario's electric distribution utilities in the future. The Board is of the view that other electric distribution utilities should be afforded similar regulatory treatment as OHSC, to the extent practical, to level the playing field. Therefore, the Board does see merit in applying analytical tests that produce results consistent with formulaic methodologies, such as the ERP test. In addition, as regulatory symmetry between gas and electric utilities is desirable, it follows that consistency and symmetry between the analytical techniques used to establish OHSC's and Ontario gas utilities' allowed returns is also desirable. The Board's formulaic rate of return methodology is based on an ERP approach, without any consideration of a comparable eamings test. As a result the Board has not formally addressed the results of the CE test in its comments.

THE RISK PREMIUM

The Board is aware that the determination of an equity risk premium can be made using a number of different methods, and professional judgment must be applied to the various inputs/factors incorporated into any method. While the Board acknowledges there are potential differences in the determination of an equity risk premium, it nonetheless has some concerns related to the analytical tests and data employed by Ms. McShane.

With respect to the first test used by Ms. McShane, the Board is concerned that:

1) the time period chosen is not consistent with that chosen for her second ERP test;
2) there may be an upwards bias in the "forward looking" DCF-based Canadian MRP based on Institutional Brokers Estimate System ("IBES")) consensus five-year normalized eamings growth rates.
3) the use of adjusted betas, as opposed to raw betas, for gas/electric utilities may overstate risk and thus the implied risk premium.

With respect to Ms. McShane's second ERP test, the Board notes that it appears counter intuitive that the TSE Gas/Electric Index would exceed the entire TSE Index over the time period used by Ms. McShane. As Ms. McShane's third test also relied on IBES five year earnings growth expectations, the Board is, again, concerned that these growth expectations are upwardly biased. For the above reasons, the Board is of the view that the minimum 450 basis points "bare bones" equity risk premium proposed by Ms. McShane is excessive.

The Board has considered OHSC's criticisms of the ERP analysis submitted by the Consultants, namely that the Consultants looked only at historical TSE 300 returns; gave no weight to globalization of capital markets; and should have been based on adjusted betas. The evidence appears to indicate that these factors were considered by the Consultants and either incorporated into the analysis (resulting in an upwards adjustment to the risk premium for U.S. and forward looking data) or consciously not included (adjusted betas not used as historical Canadian experience did not support an adjustment). The Board appreciates that the formal application of the factors cited by OHSC in the determination of the equity risk premium is a matter of professional judgment.

The Board had a choice of using as a starting point either Ms. McShane's or the Consultants' equity risk premium model results for establishing a risk premium; the end result would have been the same. The Board chose to use the Consultants' model results.

The Consultants have recommended an overall return on equity of between 8.0-8.25% based on long Canadian bond rates of 5.0-6.0%. The long-term debt rate for February, 1999 based on the Board's equity risk premium formula is 5.37%. Thus, the implied risk premium is between 263-288 basis points. This premium reflects a reduction for lower business risk as compared to the Consultants' sample of utilities, and a reduction for a higher Common equity ratio, as well as an upward financing flexibility adjustment.

The Board appreciates that a significant amount of professional judgment is involved in many aspects of the risk premium determination, including the time period used to acquire data, utility specific relative risk adjustments, impacts of varying common equity ratios, use of various market measures, etc. The Board, while having identified concerns with some of the elements of Ms. McShane's risk models, recognizes that generally the other elements of the model were reasonable. In recognition of this consideration, the Board is prepared to make an upward adjustment to achieve a risk premium for OHSC in the range of 300-325 basis points before considering relative risk.

ASPECTS OF UTILITY-SPECIFIC RISK

The Board has reviewed the data, information, and discussions put forth by Ms. McShane and the Consultants regarding the various utility-specific risk factors that should be acknowledged in the course of the ROE determination for OHSC. The Board has also reviewed the submissions of OHSC and other interested parties regarding risk assessment.

The risk factors in dispute include:

1) capital and O&M risks attributable to facilities;
2) revenue forecasting risk;
3) long-term versus short-term outlook;
4) Government ownership in relation to a "stand-alone" ROE determination;
5) the implications of the asset condition assessments and current work plans;
6) conclusions with respect to the MDC recommendations and the treatment of by-pass;
7) the assessment of regulatory risk; and
8) the impact of OHSC's status as a new entity.

The Board has carefully reviewed the positions of all parties regarding the impact of the above risk factors on OHSC. The Board finds merit in many of the arguments but also that many are of questionable basis. On balance, the Board finds that there is a reasonable doubt and uncertainty related to the relative business risk of OHSC as compared to other electric utilities and the two major gas utilities in Ontario. There are numerous factors that increase the business risk of OHSC, and, a similar number of offsetting factors. The Board notes that it is difficult to assess many of the factors given that OHSC does not have a track record. Indeed, absent such a track record it is difficult to draw definitive conclusions regarding OHSC's business risk or that of its separate business units. The Board finds that until OHSC has a track record, it is prudent to assess OHSC's basic business risk as being approximately equivalent to other major Canadian electric utilities, major gas pipelines, and Ontario gas utilities. Accordingly, the Board finds that the downward adjustment that has been reflected in the Consultants' ERP should be removed. While the available evidence with respect to the magnitude of this adjustment is open to debate, the Board estimates the amount to be approximately 50 basis points. Therefore, the Board concludes that an appropriate "all-in" ERP at a forecast long-term debt rate of 5.37% is 350-375 basis points. Thus, adding the risk premium to the forecasted bond rate yields an ROE for OHSC of between 8.87-9.12%. For purposes of determining the revenue requirement for OHSC, the Board will use a ROE of 9.0%.

The Board's guidelines on the determination of the rate of return on common equity stipulate the method by which such allowed return is adjusted to reflect changes in long term interest rates. For 2000, the rate of return on common equity shall be adjusted using the method stipulated in the Board's guidelines and December 1999 interest rate data.

The Board believes its findings are consistent with the goal of achieving an "A" credit rating. The Board notes that, based on purely quantitative data in OHSC's application, the Consultants concluded that an "A" credit rating would be achieved. In addition, the Board notes that OHSC's coverage ratio is significantly higher than that for the Ontario natural gas utilities, which have coverage ratios below 2.5. The Board agrees with OHSC that rating agencies do not evaluate bond ratings by "raw" numbers alone but also employ qualitative factors. The Board's upward adjustments and overall finding should provide a sufficient cushion to address the qualitative concerns of credit rating agencies.

The Board also compared its finding relative to returns allowed for gas utilities in Ontario. Currently, rates for Ontario's gas utilities are slightly higher than those recommended by the Board for OHSC. Specifically, the rate for Enbridge Consumers Gas and Union Gas is 9.51% (effective October 1, 1998) and 9.61% (effective January 1, 1999), respectively. These rates of return on common equity are subject to adjustment to reflect changes in the forecast debt rate data prevailing at the time the Board issues its decision regarding rate applications made by these utilities. Enbridge Consumers Gas has an application before the Board for new rates effective October 1, 1999, and Union Gas has an application before the Board for new rates effective January 1, 2000.

At the time the ROEs for the gas utilities were set, the long Canadian bond rates were 5.73% and 5.66% for Enbridge Consumers Gas and Union Gas, respectively. Thus, the effective risk premium applied to these two major gas utilities was 378 and 395 basis points, respectively. Using the 5.37% forecast long Canada bond yield, application of the Board's guidelines would produce an effective premium of 387 basis points for Enbridge Consumers Gas and 402 basis points for Union Gas. The effective risk premium recommended for OHSC of 363 basis points lies slightly below the levels of Enbridge Consumers Gas and Union Gas. However, both major gas utilities have capital structures with 35% CERs while that for OHSC is 40%, which justifies a lower risk premium to account for differences in financial risk.

In addition to comparing the Board's finding with the allowed returns of Ontario gas utilities, one can make a broader comparison with natural gas pipelines in Canada. Specifically, the all-in risk premium for OHSC is comparable to that applied to natural gas pipelines in Canada. In its March 5, 1995 Reason for Decision (RH-2-94) the National Energy Board ("NEB") found that an all-inclusive risk premium of 300 basis points as appropriate, based on a long-term Canadian bond yield of 9.25%, for TransCanada Pipelines Limited, Westcoast Energy Inc., Foothills Pipe Lines Ltd., Alberta Natural Gas Ltd., Trans Quebec & Maritimes Pipeline Inc., Interprovincial Pipe Line Inc., Trans Mountain Pipe Line Company Ltd., and Trans-Northern Pipeline Inc. Moreover, with the exception of one pipeline (Trans Mountain Pipe Line Company), the NEB found capital structures ranging from 30-35% common equity to be appropriate. The NEB, however, provided for an adjustment mechanism to reflect changing bond rates. The ROE would change by 75 basis points for every 100 basis points change in the long term bond rates. Thus, if adjusted to reflect today's long term bond yield contained in the Board's formulaic approach, 5.37%, the risk premium would be 397 basis points. Although the ERP recommended for OHSC is somewhat lower, it is nonetheless justified given the higher CER for OHSC relative to the

NEB pipelines. Thus, the Board concludes that its risk premium finding is reasonable in comparison to the findings determined by the NEB.

Exhibit K1.1

IN CONNECTION WITH
THE APPLICATION OF

UNION GAS LIMITED

BEFORE THE
ONTARIO ENERGY BOARD

E.B.R.O. 499

PREFILED TESTIMONY

OF

DR. WILLIAM T. CANNON

SEPTEMBER 1998

Section IV embodies my tests to estimate the appropriate equity risk premium (ERP) to employ for Union during its test year in the context of the Board's formula-based approach to setting equity return awards. I employ two distinct versions of the ERP test to establish the range of appropriate, market-based "all-in" ERPs for the 1999 test year. I then use an application of the discounted cash flow (DCF) model to check the reasonableness of the results of my two ERP tests. Considering the results from these three tests together as well as the Company's financing flexibility requirements for the short and medium-term horizons, I arrive at the following recommendations for Union's "all-in" ERP for 1999, contingent on the forecasted 1999 average level of long Canada bond yields:

Forecasted Long-Canada Bond Yield For 1999	Recommended "All-In" ERP For Union Gas For 1999
6.00%	3.35%
5.50%	3.50%
5.00%	3.65%

In Section V, I suggest that the Board should consider substituting the 10-year Canada bond yield for the 30-year yield within the formula mechanism for making annual adjustments to utility allowed returns.

Finally, I offer a brief critique of the evidence filed by Ms. Kathleen McShane on behalf of Union Gas in Section VI.

E.B.R.O. 499

UNION GAS

SETTLEMENT AGREEMENT

November 16, 1998

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Union has agreed to this proposal for the determination of 1999 cost of service.

Evidence References:

1. J21.D1.8

E. COST OF CAPITAL

E.1. Capital Structure

The following parties take no position on this issue: Alliance Gas Management; CENGAS; OAPPA; Tractebel; Consumersfirst Ltd.; the "Alliance"; CEED; City of Kitchener; Consumers; GEC; HVAC; CAESCO; Comsatec; Ontario Hydro; Pollution Probe; TCPL; TCP; Northland Power.

Union's evidence filed at E1/T1, along with the expert evidence of Ms. McShane at E2/T1, recommended a capital structure consisting of a 35% common equity component and a 3.8% equity like preferred share component. Union's evidence supported these capital structure recommendations based on a recognition of the business and financial risks facing Union and the need to ensure sufficient financing flexibility over a range of interest rates.

Dr. Cannon, retained by Board Staff to express an opinion on the appropriateness of Union's proposed capital structure, accepted Union's request for a 35% common equity ratio (p. 3) and further accepted the proposed equity-like preferred share capital component (p. 34).

The Ontario Coalition Against Poverty filed evidence from Professors Booth and Berkowitz who expressed the view that, in their judgement, Union is of similar risk to Consumers' Gas and recommended a 33% common equity component for Union which was consistent with their prior views on the appropriate capital structure for Consumers' Gas (p.5). They also indicated (p. 24) that Union's proposal respecting a 3.8% preferred share capital structure component was consistent with their own views and recommendations as expressed in the past.

Union pointed out that based on the common equity ratio approved by the Board for the former Union and Centra in E.B.R.O. 493/494 of 34% and 36%, respectively, that Union's weighted average approved capital structure reflecting the merger of Union and Centra was approximately 34.5%.

The parties agree that Union's evidence on this subject should be accepted and that a 35% common equity component is justified on the basis of the business and financial risks facing Union and further by an assessment of the relative risk of Union (new) as compared to Consumers' Gas.

Evidence References:

1. E1/T1 Written Direct Evidence of Messrs Bingham and Brazier
2. E2/T1 Written Direct Evidence of Ms. McShane, Fosters Associates Inc.
3. E2/T2 Written Direct Evidence of Mr. Carmichael

E.2. Cost of Equity - Application of Formula (Risk Premium)

The following parties take no position on this issue: Alliance Gas Management; CENGAS; OAPPA; Tractebel; Consumersfirst Ltd.; the "Alliance"; CEED; City of Kitchener; Consumers; GEC; HVAC; CAESCO; Comsatec; Ontario Hydro; TCPL; TCP; Northland Power.

Union's application sought a return on equity, based on a formula ROE mechanism, consisting of a 4.5% risk premium at a 6% long Canada. Union's evidence is that the merged entity is of somewhat higher business risk than the old Union because the customer mix reflects an increase in the merged entity's reliance on industrial volumes relative to the old Union Gas and because the merger adds Centra's less diverse base of industrial customers.

Union's evidence is that in the application of a formula based return, the Board should have regard to the changes in the relationship between returns on equity and bond returns which are occurring in a period of low inflation. Specifically, as investors have become increasingly confident that inflation is unlikely to reignite, the size of the purchasing power premium required by bond investors has essentially disappeared, increasing the spread between the yield on bonds and the expected return on equities.

Union's evidence also addressed the issue of interest coverage ratios. In order to be able to issue funded debt, Union's trust indenture requires that it have an interest coverage as calculated under the trust indenture in excess of 2. Moreover, Union's interest coverages, as calculated by DBRS and CBRS, is important to its investment rating, and to its ability to access capital markets. In this regard, Union drew to intervenors' attention the October 2, 1998 decision of CBRS to downgrade the investment rating of Newfoundland Power Inc. on the basis of the impact, including the impact on interest coverage ratios, of a formula based ROE mechanism which would grant Newfoundland Power a regulated ROE below industry norms (Appendix N).

Board Staff filed evidence of Dr. Cannon on the question of return on equity. Dr. Cannon expressed the view that the merger was risk neutral in relation to Union's overall business risk and that there was no net change in the relative business risks facing the regulated utility operations of Union - new and old - versus Consumers. He would expect an equity return differential of no more than 15 basis points would compensate investors for business risks which he views as "marginally greater" than Consumers. At a 6% long Canada, Dr. Cannon recommends a rate of return of 3.35%.

The Ontario Coalition Against Poverty filed evidence from Professors Booth and Berkowitz who expressed the view that full ROE testimony was not warranted in view of the Board's conclusion, as interpreted by them, that at a 7.25% long Canada, the appropriate risk premium for Union was 3.4 to 3.65%. (At a 6% long Canada this is an equity risk premium of 3.71 to 3.96%.) They also conclude that, on the basis of their analysis from first principles, the appropriate equity risk premium, assuming their recommended common equity ratio of 33%, would be 2.25%. It was clarified during the negotiations that this risk premium was consistent with the 200 basis points they recommended for Consumers' Gas in E.B.R.O. 495 at a common equity ratio of 35%.

In reply, Union filed evidence of Don Carmichael, Managing Director of Scotia Capital Markets. Amongst other things, Mr. Carmichael's evidence noted the market's perception that Union continues to be riskier than Consumers' Gas, in particular because Union's industrial exposure continues to be a significant issue from the viewpoint of both lenders and equity investors. He noted the increase in new issue spreads since Union's medium term note issue in July of 1998 and questioned any assumption that the reduction of Union's interest coverage ratio for trust indenture purposes would be a short term problem. Finally, he noted that given the 4.45% premium above long Canada's expected to be associated with cogeneration portfolio investments (whose risks are below those of Union) an equity risk premium for Union should be at least 4.5% over long Canada's.

Intervenors did not accept the extent of the equity risk differential between Consumers and Union, as outlined in Union's evidence. However, in light of that evidence, and in light of current market indicators, including that Union's credit rating according to both CBRS and DBRS is one level below that of Consumers, and that the market continues to price Union's debt at spreads in excess of those of Consumers, the parties were prepared to accept an equity risk differential between Consumers and Union of 15 basis points, which is within the range suggested by Dr. Cannon. In addition, Union noted during the negotiations that the October consensus forecast of 10 year bond yields and the 30 - 10 year spreads as reported in the Financial Post combined to produce a 30 year long Canada bond yield of 5.70%. This long Canada bond yield and the agreed to 15 basis point differential between Union and Consumers would produce an ROE using the Board's formula adjustment mechanism of 9.64% (ie.

394 basis point risk premium at a 5.70% long Canada yield) which is only 3 basis points greater than Union's 1999 embedded cost of long term debt of 9.61% (E3/T1/S1). Union noted its concerns respecting the extremely tight differential between the ROE and the embedded cost of long term debt and that Union could not support a risk premium that, at current long Canada bond yields, would produce an ROE below the embedded cost of long term debt.

All parties (other than Pollution Probe) accept that for 1999, the ROE for Union, as calculated on the basis of the Board's formula adjustment mechanism, should be 3.86% at a 6% long Canada.

The interest coverage ratios which result under Union's trust indenture are as follows:

ROE	1999	2000	2001	2002	2003
1. 9.86% (6.0 + 3.86)	2.10	2.04	2.11	2.17	2.18
2. 9.64% (5.70 + 3.94)	2.08	2.02	2.09	2.15	2.16

The parties further agree that Union's return on equity should be determined in accordance with the Board's Draft Guidelines on a Formula - Based Return on Common Equity for Regulated Utilities dated March, 1997. For Union, this will entail the determination of a 30 year long Canada bond yield calculated as the sum of the November consensus forecast average 10 year Canada bond yield and the 30 year to 10 year bond yield spreads as reported in the Financial Post for the period October 15 to November 15.

Evidence References:

1. E1/T1 Written Direct Evidence of Messrs Bingham and Brazier
2. E2/T1 Written Direct Evidence of Ms. McShane, Fosters Associates Inc.
3. E2/T2 Written Direct Evidence of Mr. Carmichael
4. K1 Evidence of Dr. Cannon
5. K22.1 Evidence of Professors Booth and Berkowitz
6. Agreement, Appendix N