EB-2007-0606/0615

Weather Risk for a Gas LDC

Evidence of

Laurence D. Booth

Before the

ONTARIO ENERGY BOARD

October 22 2007

1.0 INTRODUCTION

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. Laurence Booth is a professor of finance and finance area co-ordinator in the Rotman School of Management at the University of Toronto, where he holds the CIT Chair in Structured Finance. Professor Booth, either alone or with the late Professor M. K. Berkowitz, has previously filed testimony with this Board in hearings involving Ontario Hydro, Union Gas, Centra Gas Ontario and EGDI, as well as the generic hearing in 2003 to review the Board's ROE adjustment mechanism and the recent Ontario Electric Disco technical conference. A detailed resume has been filed previously with the Board. If needed, Professor Booth's current CV can be downloaded from his web site.[1]

Q. PLEASE DISCUSS HOW YOUR TESTIMONY IS ORGANISED AND THE ISSUES THAT YOU DEAL WITH.

A. The Vulnerable Energy Consumers Coalition (VECC) and the Consumers Council of Canada (CCC) have asked me to provide an independent commentary on issue #3.1 on the issues list. This is

> Issue 1.3 Should weather risk continue to be borne by the shareholders, and if so what other adjustments should be made?

I understand that this issue was placed on the Issues list for this EB-2007-0605/0615 Proceeding on Incentive Regulation for Enbridge Gas Distribution Inc. (EGDI) and Union Gas Limited (Union), by the School Energy Coalition (SEC).

Although weather risk has come up on the issues list, as far as I am aware there is no evidence sponsored by any of the utilities. Instead what information there is has come from partial reproduction by EGDI and Union Gas of information requests from other hearings. I don't

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1 http://www.rotman.utoronto.ca/~booth.

regard weather risk as an important issue, in the sense that it is a temporary and diversifiable risk, and mainly important due to covenant restrictions specific to the debt of certain utilities. However, the judgment of other regulators is that it does affect the short term business risk of a utility and the appropriate common equity ratio. Further it is EGDI's most important risk factor as indicated by the major Canadian bond rater, DBRS. For these reasons it is important that there be a full evidentiary record. This record should be lead by testimony from the gas utilities themselves; below I highlight some of the key areas that should be examined.

Q. IF AN APPLICATION WERE MADE TO TRANSFER THE WEATHER RISK TO RATEPAYERS, WHAT WOULD BE THE CONSIDERATIONS THAT THE BOARD SHOULD HAVE THE APPLICANTS ADDRESS?

A. The main considerations should be as follows:

- Is weather risk a fully diversifiable risk for utility investors or should it affect the allowed ROE?
- Does weather risk affect a utility's capital structure?
- What are the major covenants in a utility's bond indenture and how does weather risk affect a utility's financial flexibility if at all?
- How have different Canadian regulators treated the effect of weather risk? Have they adjusted the utility ROE or common equity ratio or neither?
- Is there a difference between Bond holder and shareholder interest in weather risk?

Q. WERE THESE FACTORS A CONSDERATION IN THE RECENT EB-2006-0034 APPLICATION BY EGDI?

A. In the recent EGDI application (EB-2006-0034), EGDI sought a 3% increase in its common equity ratio partly based on market access problems brought on by warmer weather. There is thus evidence that one Ontario gas utility felt that weather risk was material, so I will use information from this hearing to indicate the areas that might the Board might wish to examine. For example, in Appendix A I attach the EGDI supplementary evidence that details how weather variability affected EGDI's interest coverage ratio and its access to the medium term note (MTN) market. The critical passage is the last paragraph where EGDI states

> The Company believes that it is critical to have reasonable access to long term debt capital to manage the financial affairs of the Company. The fact that the Company is denied access to this market due to a year in which weather is warmer than normal by an amount in line with the long term average is inconsistent with the capital attraction standard necessary for a utility and clearly indicates that immediate meaningful action is necessary. Failure to do so will lead to material adverse changes in the utility's credit profile and credit ratings and increased costs for gas distribution customers. The Company's requested equity thickness of 38.0% is the minimum change that the Company believes is possible to maintain its financial integrity and generally have adequate access to capital markets in view of the Company's business and financial risk profile.

Clearly, at the time EGDI felt that the impact of warmer weather in shutting the company out of the MTN market was serious. I have seldom seen a company claim that its financial integrity was at stake and that ***immediate*** meaningful action is necessary. If EGDI's evidence is taken at face value weather risk is a serious risk confronting Ontario gas utilities. Further if this risk is as serious as EGDI claimed at the time, then removing that risk should materially lower the risk borne by EGDI's investors.

Q. DO YOU BELIEVE THAT WEATHER RISK IS A SERIOUS BUSINESS/FINANCIAL RISK?

A. Not directly. Weather risk has two important dimensions in terms of the financial integrity of a gas distribution utility. The first is that some utilities are held accountable for the volume variances caused by weather. This is the case for both Union Gas and EGDI. It is not the case for two other large gas LDCs in Canada, since both Gaz Metro and Terasen Gas Inc. (TGI) have comprehensive deferral accounts that pass both the price, as well as volume variances, onto consumers.

It is important that the forecast weather on which the utility's rates are based is accurate. At Appendix B is an excerpt from evidence in EB-2006-0034, where EGDI points out that warmer weather has reduced EGDI's EBIT by $107 million since 1993. I have no expertise in assessing whether this statement is true or not, but it indicates the importance of correctly forecasting "normal" weather. If the true "normal" weather is warmer than that used to set rates, then EGDI, Union Gas or any other gas distribution utility will under-earn, since volumes will consistently be below forecast. However, volume forecasts are based on many other variables than weather.

Of more importance to my evidence is the second impact of weather on utility risk.

In Appendix B is EGDI's evidence that the average absolute impact of weather variances on EBIT has been $35 million with annual swings of up to +/- $70 million. These are large annual variances and the question is whether or not EGDI should be rewarded for bearing this risk and conversely if this risk is transferred to ratepayers should any reduction in risk to EGDI, or Union Gas, result in a material loss of ROE premium or reduction in the allowed common equity ratio.

Q. DO YOU BELIEVE THAT BEARING WEATHER RISK DESERVES A PREMIUM TO THE ROE?

A. No. I have repeatedly stated for as long as I can remember that weather risk is the ultimate example of a fully diversifiable risk. Harry Markowitz won the Nobel prize for developing the principles behind modern portfolio theory (MPT). MPT looks at risk from the point of an investor holding a diversified portfolio of securities and has become the major paradigm in finance as institutions, like mutual funds, pension funds etc, have come to dominate the capital market. Risk is then measured as the contribution of any security to a diversified portfolio and this risk is measured by the beta coefficient, where what is critical is the correlation between the security's return and the market.

That part of a security's return variability that is correlated with the general market movement is called systematic risk and can not be removed by forming a diversified portfolio. Consequently the investor demands a risk premium for bearing this type of risk. Conversely that part of a security's return variability that is uncorrelated with general market movements is called unsystematic risk and can be completely removed by holding a diversified portfolio. Since unsystematic risk can be completely removed the investor does not require a risk premium for bearing this risk.

Weather risk is a prime example of diversifiable risk, since weather fluctuations across the country show little correlation with general economic activity or stock market behaviour, while weather fluctuations in Ontario are extremely unlikely to be correlated with any diversified global or North American portfolio. Over the last twenty years various "factor models" have been advanced as competitors to the Capital Asset Pricing model (CAPM), which comes out of MPT. Common factors are size, momentum, price to book etc, but I have yet to ever see anyone suggest weather as a risk factor. For this reason I have consistently argued that no gas utility deserves a premium to the ROE for bearing weather risk.

Further in looking at the adjustment mechanisms that have been used for setting the allowed ROE for different utilities across Canada, I see no evidence that the BCUC, for example, has set a lower allowed ROE for Terasen Gas Inc (TGI) due to the existence of its comprehensive weather deferral account.

Q. DOES WEATHER AFFECT THE UTILITY'S CAPITAL STRUCTURE?

A. Not necessarily or generally, it is very much a utility specific factor. In EGDI's case the impact of weather was a significant factor in their request to increase their common equity ratio from 35% to 38%, so EGDI's evidence in EB-2006-0034 indicates that EGDI felt it was a significant factor in determining their capital structure. As the excerpt from EB-2006-0034 in Appendix B indicates EGDI justified its requested capital structure change in part on the need for a 0.20 cushion over the 2.0 interest coverage ratio (ICR) included in its bond indenture. Given the variability of up to $70 million caused by weather fluctuations, EGDI argued that a higher ICR was needed in order to allow the company to access the MTN market, otherwise its financial integrity was imperilled and all sorts of bad things would happen, such as bond downgrades etc.

The basic argument is a straightforward one. The ICR is determined as the company's earnings before interest and tax or EBIT divided by its interest or

$$ICR = \frac{EBIT}{I}$$

If the utility has to have an ICR of 2.0 to issue debt, then the more variability in EBIT the greater the probability that random weather fluctuation will cause the EBIT to drop far enough so that the ICR is below 2.0 and the utility is shut out of the bond market. Ipso facto the greater the weather variability, or risk, the higher the required cushion in the ICR needed over the "critical" value of 2.0.

This cushion in the ICR can then be created either by a higher allowed ROE or higher common equity ratio. In the past EGDI and its forerunner companies have argued for a higher ROE and a higher common equity ratio to compensate for this weather risk. However, since no financial expert that I am aware of is willing to argue that weather risk deserves a premium to the ROE, all that is left is a higher common equity ratio, as requested by EGDI in EB-2006-0034. Hence weather risk can affect the capital structure of some utilities depending on their covenant provisions in their debt and their need for financial flexibility.

Q. DO YOU COMPLETELY ACCEPT THIS ARGUMENT?

A. Not completely**.** As I pointed out in EB-2006-0034 the effects of weather fluctuation and declining interest rates[2] are both temporary phenomena. In the case of weather, unless the normalisation is inaccurate, the utility can finance its operations with short term debt until the warmer weather passes and we are back to normal; that is warmer weather should be as likely to be followed by colder weather and vice versa. It is striking that in EB-2006-0034 the EGDI evidence was not supported by expert financial opinion, simply evidence by the company. Further DBRS also did not accept EGDI's evidence, as the following passage indicates,[3]

RATING UPDATE

DBRS has confirmed the ratings of Enbridge Gas Distribution Inc. (EGD or the Company), as listed above, all with Stable trends. The confirmation reflects EGD's reasonable financial profile and a continually constructive regulatory environment that underpins the ratings.

The Company's credit metrics have weakened gradually over the past few years as a result of lower approved return on equity (ROE), warmer than normal weather, high dividend payouts and increased debt levels. However, EGD's financial metrics still remain reasonable and consistent with the current rating category. The Company's financial results and liquidity are exposed to changes in weather conditions. EGD's liquidity requirement is mainly managed through a $1 billion commercial paper program and internal cash flows. DBRS notes that EGD was not in compliance of an interest coverage test at December 2006 for additional debt issuance as specified in the Trust Indenture, largely due to warmer weather. However, this did not cause a credit issue due to EGD's financial flexibility. The Company was in compliance as of March 31, 2007.

Free cash flow deficits are expected to continue as a result of EGD's large capital expenditure program for ongoing system maintenance and an accelerated plan to replace the existing aged cast iron mains over the medium term. DBRS believes that cash flow deficits could further pressure the Company's credit ratios. The rating confirmation is based on the assumption that EGD will manage its external financings and dividends prudently in order to prevent further erosion of its credit metrics. (Continued on page 2)

It is clear that as far as the bond rater, is concerned EGDI's financial "metrics" remained consistent with its current "A" rating and that the technical issue of market access did not affect

[2] Declining interest rates also squeeze the ICR due to the slow rollover of embedded debt costs.
[3] DBRS bond rating July 2007.

the credit worthiness or financial integrity of EGDI. Further the MTN market access problem evident at the time of EB-2206-0034 in December 2006 disappeared by March 2007.

However, this is not to say that weather risk is not important, it is. As DBRS also points out on page 2 of the same report.

> **Challenges**
>
> - Weather remains the most significant risk, as forecast volumes, which are based on the normalized weather, are built into the Company's base rates while actual usage varies with weather. The sales volume, to a lesser degree, is also exposed to economic conditions in the service areas and prices of alternative energy sources and customer usage. The Company has asked the OEB to take into account the warmer weather in the forecast.

If a utility has extensive exposure to weather risk then it can repeatedly be shut out of the bond market forcing it to rely on short term bank debt or other sources of finance. That is, what weather can do is reduce the financial flexibility of the utility and deny it the opportunity of financing with its preferred instruments. To this extent weather risk can affect a utility in reducing its financial flexibility. Conversely, removing this source of risk allows the utility to finance with more debt, since it removes the need for this “cushion” of the 2.0 ICR needed to access the MTN market. As the ratepayers bear the weather risk through variance or deferral accounts, the utility can use more debt and lower the cost of capital resulting in marginally lower rates.

The BCUC has accepted this line of reasoning for Terasen Gas Inc (TGI), which is allowed a comprehensive revenue stabilizing adjustment mechanism (RSAM), where all weather related risks are folded into a deferral account and passed on to rate payers. Until recently the BCUC then only allowed TGI a 33% common equity ratio despite TGI being generally regarded as slightly riskier than EGDI and similar to Union Gas, both at the time allowed 35% common equity with a premium ROE allowed for Union.

At Appendix C are my full IR answers to EGDI information requests one of which is referred to in answer to SEC IR #24 in this hearing. The BCUC decided that TGI deserved a 35-38% common equity ratio and allowed the lower end as a result of TGI's comprehensive weather deferral account that passes weather risk on to ratepayers. As the IR answer goes on to show the BCUC viewed the use of the deferral account "to be a short term business risk mitigant, which is not available to TGI's comparators." The comparators of course were primarily Union Gas and EGDI as are referenced elsewhere in the IR answer.

From this it is clear that both EGDI and the BCUC have viewed weather risk as affecting the appropriate common equity ratio. In EGDI's view, recent warmer weather has in part justified their requested increase in the common equity ratio, whereas for the BCUC it has justified their setting TGI's allowed common equity ratio 0-3% lower than it would otherwise have been. On this basis the allowed common equity ratio for Union Gas and EGDI should be reduced by at least 0-3% if the weather risk is transferred to ratepayers. I say at least, since at the time of the BCUC decision both Union Gas and EGDI were allowed 35% common equity, since then these have both increased to 36%. In the case of Union Gas this was as the result of a negotiated settlement, whereas for EGDI it may have been in part due to the EGDI claim that weather was imperilling its financial integrity. Either way using the BCUC judgment as a guide would indicate allowed common equity ratios of 32-35%, should weather risk be transferred to ratepayers as a result of more comprehensive deferral accounts.

Q. SO DOES THE REMOVAL OF WEATHER RISK ALLOW THE FIRM TO CARRY MORE DEBT?

A. Not always; it depends on the type of debt the firm issues. EGDI has a very specific indenture provision that means that it has to have an ICR of 2.0 before it can issue unsecured MTNs. In contrast other utilities with other types of debt outstanding have different indenture provisions. As a result, the effect of the transfer of weather risk to ratepayers depends on the structure of the particular bond indenture and the type of debt issued by the utility.

Consider, for example, the problem individuals face in financing a house purchase. Normally we go to the bank or other institution and sign a mortgage, where the bank has first claim on our house should we fail to make any principal and interest payments. In this way the risk to the bank is reduced and they will allow us to borrow up to 75% on a standard mortgage or 95% on a high ratio mortgage. However, suppose the same individual went to the bank and refused to sign a mortgage, but instead wanted the same amount of money as an unsecured "signature" loan. Clearly from the bank's perspective this is a riskier loan and the bank would probably still make a loan, but tighten its credit standards and impose other conditions.

Loan markets for companies work in the same way with the qualification that their assets are generally more specific and less easily resold than residential homes. In Appendix D is some brief covenant information on the debt issues of Union Gas, EGDI and Gaz Metro. Three features are important: Gaz Metro indirectly finances with mortgage bonds, which as the prospectus indicates have looser covenants allowing Gaz Metro more financial flexibility; Union Gas finances with unsecured MTNs but indicates that the ICR covenant will not apply after July 2006 to new debt allowing Union Gas more flexibility; EGDI still has the ability to finance with first mortgage bonds, but ***chooses*** to finance with MTNs that continue to have this 2.0 ICR covenant restriction.

Clearly the transfer of weather risk has a different impact on the financial flexibility of these three utilities since the covenant restrictions are different. I have long argued that using MTNs has restricted the financial flexibility of gas LDCs simply because of the 2.0 ICR. This restriction does not affect mortgage bond financing and is not in the indenture provisions of many other utilities, such as Hydro One and TransCanada Pipelines. In essence utilities like EGDI have voluntarily switched to a form of financing where the covenant restrictions are higher and then tried to use these tighter covenants to justify higher allowed ROEs or common equity ratios.

Q. WHAT ARE YOUR RECOMMENDATIONS?

A. Since other regulatory commissions have viewed the transfer of weather risk to ratepayers as a reduction in risk to the utility, requiring a decrease in the common equity ratio, in my judgment the utilities should be required to lead comprehensive evidence on this, so that there is a complete evidentiary record for the Board to fully consider the matter.

Appendix A: EGDI Evidence on Equity Thickness

Filed: 2006-12-15
EB-2006-0034
Exhibit E2
Tab 1
Schedule 3
Page 1 of 3

UTILITY EQUITY THICKNESS FINANCIAL RISK UPDATE

1. The purpose of this evidence is to update the Company's financial risk position in light of the reduction in the allowed ROE for 2007 from 8.74% as originally filed by the Company to 8.39% based on the October 2006 Consensus Forecast, as well as the impact of actual results for 2006 which will cause Enbridge Gas Distribution to fail to meet its Trust Indenture financial covenant effective January 1, 2007 for the first time in the Company's history.

2. The Company's Trust Indenture prohibits the issuance of new term debt if Enbridge Gas Distribution Inc.'s actual legal entity EBIT interest coverage ratio (as defined in the Trust Indenture and accounting for the interest on the new debt) for any twelve consecutive months out of the last twenty-three months does not exceed 2.0 times. While there are some slight differences between the Trust Indenture definition of interest coverage ratio and the annual average utility figures, the impact is not significant.

3. Effective January 1, 2007, the Company will lose the ability to include the full year 2005 period for purposes of the new issue covenant test. The impact of the lower allowed ROE in 2006 combined with actual results for January 2006 - March 2006, which were lower than the corresponding periods in 2005 due in part to warmer than normal weather, cause the actual interest coverage ratio for the new issue test to decline significantly. The new issue interest coverage ratio effective January 2007 will be about 1.85 times to 1.95 times depending on the specific twelve month period used over the preceding twenty-three months for an indicative $100 million MTN issuance. The Company's ability to meet the covenant throughout 2007 and beyond will depend on the allowed equity thickness in this case and actual operating results for 2007, including any weather variances.

Witness: B. W. Boyle

4. As noted in the pre-filed evidence at Exhibit E2, Tab 1, Schedule 1, the steady decline in allowed ROE from 1993 to 2005 without any compensating change to the equity thickness has squeezed the Company's <u>normalized</u> EBIT Interest Coverage Ratio from 2.38 times to 2.19 times. In 2006, this was further reduced to 2.10 times, and will decline again to 2.07 times in 2007 without any change to the allowed equity thickness. The table below is an update of Table 6 previously filed at Exhibit E2-1-1 page 26 of 31, to reflect the change in allowed ROE from 8.74% to 8.39%:

TABLE 1

Item No.	Approved Equity Thickness	Capital Contribution ($MM)	Amount of MTN Issuance ($MM)	EBIT Interest Coverage Ratio (times)	EBIT Margin Above 2 Times Coverage ($MM)	Change in Requested Deficiency ($MM)
1 – Company Requested	**38%**	**110**	**0**	**2.20**	**33.5**	**$0.0**
2 – Scenario A	37%	75	35	2.16	26.5	($3.6)
3 – Scenario B	36%	40	70	2.12	19.6	($5.9)
4 – Scenario C	35%	0	110	2.07	12.7	($9.5)

5. Enbridge Gas Distribution has issued a $175 million MTN on the terms shown below to complete its 2006 financing plan.

Item No.	Amount ($MM)	Issue Closing Date	Term (Yrs)	Canada Yield	Corporate Spread	Effective Coupon	Amortized Issue Costs	Effective Cost
1	175	Dec 19/06	15	4.54%(a)	0.73%	5.27%	0.05%	5.32%

(a) Comprised of 4.04% GOC bond yield plus 0.50% of hedge costs

Witness: B. W. Boyle

6. The Company believes that it is critical to have reasonable access to long term debt capital to manage the financial affairs of the Company. The fact that the Company is denied access to this market due to a year in which weather is warmer than normal by an amount in line with the long term average is inconsistent with the capital attraction standard necessary for a utility and clearly indicates that immediate meaningful action is necessary. Failure to do so will lead to material adverse changes in the utility's credit profile and credit ratings and increased costs for gas distribution customers. The Company's requested equity thickness of 38.0% is the minimum change that the Company believes is possible to maintain its financial integrity and generally have adequate access to capital markets in view of the Company's business and financial risk profile.

Appendix B: EGDI Evidence on Effect of Weather on EBIT

TABLE 5

Col. 1	Col. 2	Col. 3	Col. 4
	Test Year	Impact of Actual vs Forecast Weather on Utility Earnings Before Interest Expense and Income Taxes* ($ Millions)	Absolute Value of Weather Impact on EBIT ($ Millions)
1.	1993	10.6	10.6
2.	1994	30.1	30.1
3.	1995	(30.1)	30.1
4.	1996	29.6	29.6
5.	1997	2.3	2.3
6.	1998	(70.0)	70.0
7.	1999	(55.0)	55.0
8.	2000	(38.9)	38.9
9.	2001	8.5	8.5
10.	2002	(47.3)	47.3
11.	2003	72.0	72.0
12.	2004	37.5	37.5
13.	2005	0.0	0.0
14.	2006 Q1	(57.7)	57.7
15.	Total	(107.4)	
16.	Average	(7.7)	35.0

* A positive number indicates colder than forecast weather and higher than forecast earnings and a negative number (bracketed and bolded) indicates warmer than forecast weather and lower than forecast earnings.

52. Since 1993, the average annual impact of weather on the utility's EBIT on an absolute value basis has been $35.0 million, significantly higher than the $16.8 million error margin reflected in the 2006 rates. Also of note is the fact that while there has been a roughly equal number of "colder than forecast" and "warmer

Witnesses: B. Boyle
J. Denomy

than forecast" years, the cumulative impact of weather since 1993 has been a reduction of over $107 million in utility EBIT due to actual weather being warmer than forecast weather.

Requested Equity Thickness

53. Based on:
    a) the increased business and financial risks that have developed for Enbridge Gas Distribution over the last 10 to15 years described in this evidence and at Exhibit E2, Tab 1, Schedule 2,
    b) the foreseeable challenge to issuing new long term debt; and
    c) the looming risk of a credit rating downgrade, the Company believes that the utility's capital structure must be adjusted to increase the deemed equity ratio from 35.0% to 38.0%.

54. The justification for the 38.0% level is the utility's critical need to maintain a capital attraction standard that provides access to term debt markets at all stages of an economic cycle, in order to ensure that the utility's customers have the capital needed for the projects they require, at the best possible cost.

55. In order to continue to benefit from this open access, the utility must maintain its "A" credit rating and must be able to meet its new issue trust indenture covenant. At a 35.0% deemed equity ratio and current interest rates, Enbridge Gas Distribution does not have an adequate "margin of error" in actual versus forecast earnings to have reasonable confidence in meeting its new issue test covenant and is at risk for further credit rating downgrades.

56. Enbridge Gas Distribution believes that in the current business risk and financial market environment, it must have an EBIT interest coverage of at least 2.2 times to provide adequate room for weather and normal business volatility and be able to

Witnesses: B. Boyle
J. Denomy

Appendix C: EB-2006-0034 IR Responses of Dr Booth

Exhibit I
Tab 28
Schedules 1- 17
Page 1 of 24

ENBRIDGE GAS DISTRIBUTION INC. ("Enbridge")
INTERROGATORIES OF DR. BOOTH

INTERROGATORY #1

Reference: Page 2, lines 11-13

Issue Number: 4.3
Issue: Is the proposal to change the equity component of the deemed capital structure from 35% to 38% appropriate?

a) Would Dr. Booth agree that in the BCUC decision setting Terasen Gas' common equity ratio to 35%, the BCUC provided a range of 35% - 38% common equity ratios that the BCUC considered appropriate for Terasen Gas, and that the BCUC determined that given the effect of Terasen Gas' unique deferral accounts that protect Terasen Gas from commodity price risk, weather risk, and margin risk for residential and commercial customers, the BCUC determined that the 35% equity ratio was appropriate?

b) Would Dr. Booth agree that Enbridge Gas Distribution's earnings are subject to significantly greater volatility than Terasen's earnings since Enbridge Gas Distribution does not have the weather variance mitigation or residential and commercial margin mitigation that Terasen Gas is permitted?

a) The BCUC stated (Decision March 2006, page 40) as follows:

> The Commission Panel concludes that the appropriate capital structure range for consideration of TGI is in the range of 35 percent to 38 percent and that given the effect of deferral accounts in reducing the risk of TGI, the appropriate equity component for TGI is 35 percent. Given the preferred shares in the capital structure of all other Canadian gas distribution utilities, the equity component of TGI will remain the lowest in Canada for gas distribution utilities.

Note that Enbridge does have a preferred share component.

b) Yes but weather risk should not be a factor in setting the firm's financial parameters as the Company's expert Dr. Carpenter pointed out it is a diversifiable risk. Also as Dr. Booth pointed out to the BCUC the absence of a full RSAM allows EGDI and Union to over earn to a greater degree than TGI. Risk is the probability of incurring harm and increased volatility that does not harm the company but instead allows it to earn more is not a risk. In the BCUC Decision it was also noted

Although Dr. Booth recommends 35 percent for a typical local gas distribution company, he recommends 33 percent for TGI because of more comprehensive deferral accounts. The Commission Panel accepts that the TGI's earnings are less volatile than the earnings of Enbridge and Union, and such reduced volatility can be attributed, in part, to weather normalization. The Commission Panel also notes Dr. Booth's testimony that "I think they (sc Enbridge and Union) are probably happier not having weather normalization. Otherwise they would have proposed it" (T5: 639). The Applicant submits that the existence of the RSAM account is not a factor that should play a role in the determination of its allowed return on equity or its capital structure. Dr. Booth confirmed in his opening statement that weather risk should not affect the return on equity (TGI/TGVI Submissions, p. 14, para. 46 and 47).

Notably TGI did not think that the RSAM should affect its capital structure or allowed ROE. The BCUC went on to state (page 22)

The RSAM acts as a weather normalization account. In this regard, TGI is similar to a number of utilities in North America (including Gaz Metro and Newfoundland Power Inc., in Canada) that can defer the effects of temperature when and where it differs from a long-term norm used to set rates. The Commission Panel agrees with Dr. Booth and Ms. McShane that weather is a symmetrical risk, with equal odds of over and underachieving, that should not be taken into account when establishing the ROE for a benchmark low-risk utility.

The second function of the RSAM is to enable TGI to defer margin variances arising from residential and commercial customers consuming more or less gas than forecast. The Commission Panel considers this aspect of the RSAM to be a short-term business risk mitigant, which is not available to TGI's comparators. By "short-term", the Commission Panel means that it agrees with the Applicants that "the RSAM does not provide for recovery of the return on, or of, capital in the longer-term."

INTERROGATORY #13

Reference: L-27, Evidence of Dr. Booth, page 2, lines 11 to 13

Issue Number 4.3
Issue: Is the proposal to change the equity component of the deemed capital structure from 35% to 38% appropriate?

"In particular the BC Utilities Commission has just set Terasen Gas's common equity ratio to 35% and I would regard EGDI as marginally of lower risk."

Request:

a) In Dr. Booth's opinion, all else equal, does the use of deferral accounts lower a utility's business risk?

b) If the answer to a) is "No", then please reconcile this answer with Dr. Booth's answer to Interrogatory 13 in Exhibit C2-7 from Terasen's Return on Equity proceeding before the BCUC:

> The BCUC regulates Terasen Gas and the allowed common equity ratio reflects the business risk, deferral accounts etc of the company. It would
>
> be inconceivable to Professor Booth that the BCUC did not recognize the interaction of these factors in regulating the company. In Professor Booth's judgment the deferral accounts have lowered TGI's risk and
>
> allowed the company to operate with 33% common equity, so there are no basis point adjustments in terms of ROE they are in terms of common equity.

c) Please confirm that EGDI does not does not have a deferral account like Terasen Gas's Revenue Stabilization Adjustment Mechanism (RSAM), which compensates for differences between forecast and actual residential and commercial customer usage.

d) Please indicate whether, in Dr. Booth's opinion, a deferral account comparable to Terasen Gas's RSAM is likely to be implemented by the Board as part of EDGI's PBR framework.

a) It depends on the deferral account. Some deferral accounts reduce risk, while others may have no material impact on the overall business risk of the utility.

b) In the case of TGI's RSAM, which the IR refers to, Dr. Booth continues to believe that, all else constant, it reduces the variability in TGI's earnings and allows it to operate with a lower common equity ratio. However, as he has stated many times since 1992 (?), the first time he testified before this board, weather is a diversifiable risk that does not affect the investor's required rate of return and should not affect the allowed ROE.

c) Confirmed. EGD has a purchase gas variance account which is narrower in scope than the RSAM of TGI, in that EGD is held accountable for weather induced changes in demand.

d) Dr. Booth does not anticipate board decisions, but notes that the Board's Report on Natural Gas Regulation following the Natural Gas Forum in 2005 advised against such earnings sharing mechanisms. Also both Union and EGDI have requested that a declining average use/customer adjustment be included in the X factor for the PBR plan under development by OEB staff.

Appendix D EXTRACTS FROM COVENANT PROVISIONS OF GAS UTILITY DEBT ISSUES

Gaz Metro July 5, 2006

Additional Funded Debt

GMLP will not issue, assume or guarantee any Funded Debt (other than Funded Debt secured by Purchase Money Hypothecs and Funded Debt issued as an extension, retirement, renewal or replacement of Debt which was Funded Debt at the time of original issuance, assumption or guarantee without increasing the principal amount thereof) unless Earnings Available for Payment of Interest Charges during any period of 12 successive calendar months selected by GMLP out of the 18 months preceding the date of the proposed issuance, assumption or guarantee of the new Funded Debt shall have been not less than one and one-half times the sum of (a) annualized interest charges on all Funded Debt of or guaranteed by GMLP outstanding at the date of such proposed issuance, assumption or guarantee (except Funded Debt guaranteed by GMLP if the proceeds thereof are reloaned to GMLP, Funded Debt held in any purchase, sinking, amortization or analogous fund and Funded Debt to be retired by the Funded Debt proposed to be issued or to be retired by Funded Debt issued since the beginning of such 12-month period) plus (b) annualized interest charges on the Funded Debt proposed to be issued, assumed or guaranteed. Notwithstanding the foregoing, if GMi or GMLP enters into or has entered into a contract or contracts in respect of Funded Debt the effect of which is that the actual interest costs in respect thereof are different from the interest charges stated in respect thereof, the calculations of interest charges in (a) and (b) above shall be made on the basis of such actual interest costs.

GMLP will not issue, assume or guarantee any Funded Debt (other than Funded Debt secured by Purchase Money Hypothecs and Funded Debt issued as an extension, retirement, renewal or replacement of Debt which was Funded Debt at the time of original issuance, assumption or guarantee without increasing the principal amount thereof) unless all Funded Debt of or guaranteed by GMLP outstanding at the date of such proposed issuance, assumption or guarantee (except Funded Debt guaranteed by GMLP if the proceeds thereof are reloaned to GMLP and Funded Debt held in any purchase, sinking, amortization or analogous fund) shall not exceed 65% of the Aggregate Capitalization of GMLP at such date, after giving effect to such issuance, assumption or guarantee and the receipt and application of the proceeds thereof.

Union Gas July 2006 Short form Prospectus

Covenants

The Trust Indenture, as applicable to the Debentures, contains, among others, a covenant substantially to the effect that the Company will not create or suffer to exist any mortgage, pledge, charge or other encumbrance (whether fixed or floating) on any of its assets (including, without limitation, oil, natural gas and related hydrocarbons in place or in storage and rights in respect thereof) to secure any obligation unless at the same time it shall, in the opinion of counsel, secure or cause to be secured equally and rateably with such obligation all of the Debentures then outstanding by the same instrument or by other instruments in form and substance satisfactory to such counsel; provided that this covenant shall not apply to (a) First Mortgage Bonds; (b) Purchase Money Mortgages; (c) liens not related to the borrowing of money incurred or arising by operation of law in the ordinary course of business; or (d) security given (other than on fixed assets) in the ordinary course of business and for the purpose of carrying on the same, to any bank or other lender to secure any indebtedness other than Funded Obligations; for this purpose natural gas placed in underground storage in excess of the quantity thereof carried on the books of the Company as base pressure gas, shall not be deemed to be fixed assets.

Certain covenants restricting the ability of the Company and its consolidated subsidiaries to issue or incur debt obligations with a maturity of greater than 18 months based on the application of an "Available Earnings Test", which are applicable to prior series of Debentures (including medium term note debentures) issued by the Company

under the Trust Indenture, will not be included as terms of Debentures or other Debt Securities issued after the date of this short form base shelf prospectus, unless otherwise specified in the applicable prospectus supplement.

Covenants

The Corporation covenanted in the Indenture substantially to the effect that so long as any of the Notes are outstanding, it will not:

(a) except from time to time to secure First Mortgage Bonds, mortgage, pledge or charge or otherwise encumber any of its assets to secure any obligations unless at the same time it shall, in the opinion of counsel to the Corporation, secure equally and rateably with such obligations all of the Notes then outstanding by the same instrument or by other instrument in form and substance satisfactory to such counsel; provided that this shall not apply to (i) Permitted Prior Charges, (ii) Purchase Money Obligations, (iii) security given in the ordinary course of business and for the purpose of carrying on the same, to any bank or banks or others, to secure any obligation repayable on demand or maturing, including any right of extension or renewal, within 18 months of the date when such obligation is incurred provided such security is not given on fixed assets, or (iv) permitted encumbrances (as defined in the Indenture);

(b) permit any Restricted Subsidiary to create, incur or guarantee any indebtedness, except indebtedness to or of the Corporation or to a trustee in support of a guarantee of indebtedness of the Corporation; provided that this shall not apply to (i) Permitted Prior Charges, (ii) Purchase Money Obligations, or (iii) indebtedness incurred in the ordinary course of business and for the purpose of carrying on the same, to any bank or banks or others, repayable on demand or maturing, including any right of extension or renewal, within 18 months of the date when such indebtedness is incurred, provided such security is not given on fixed assets;

(c) dispose of any indebtedness of a Restricted Subsidiary held by or for the Corporation;

(d) permit any Restricted Subsidiary to issue any shares if, as a result of such issue, such Restricted Subsidiary ceases to qualify as such; or

(e) create or issue any additional notes unless the Consolidated Net Earnings of the Corporation for any period of 12 consecutive calendar months of the 23 calendar months next preceding the date of application to the Trustee for certification of such additional notes, which shall have been selected by the Corporation, shall have been at least two times the annual interest requirements in respect of all Funded Obligations of the Corporation to be outstanding after the issue of such additional notes and after any retirements of Funded Obligations to be made out of the proceeds thereof or retirement whereof has been otherwise provided for and in respect of which proof has been afforded to the Trustee satisfactory to it that adequate provision has been made assuring that such Funded Obligations will be retired within 45 days after the issue of such additional notes; provided that the provisions of this covenant (e) shall not apply to the creation and issue of additional notes for the purpose of refunding any notes previously issued provided that (except in the case of refunding all of the notes) the aggregate principal amount of the additional notes does not exceed the aggregate principal amount of the notes to be refunded.