



**IN THE MATTER OF**

**TERASEN GAS INC.  
TERASEN GAS (VANCOUVER ISLAND) INC.  
TERASEN GAS (WHISTLER) INC.**

**AND**

**RETURN ON EQUITY AND CAPITAL STRUCTURE**

**DECISION**

**December 16, 2009**

**BEFORE:**

**Anthony J. Pullman, Commissioner/Panel Chair  
D.A. Cote, Commissioner  
M.R. Harle, Commissioner**

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## EXECUTIVE SUMMARY

In this Decision the Commission considers an application by Terasen Gas Inc. ("TGI"), Terasen Gas (Vancouver Island) Inc. ("TGVI") and Terasen Gas (Whistler) Inc. ("TGW") (collectively, "Terasen") regarding Return on Equity and Capital Structure.

TGI requested a change in the common equity component of its capital structure from 35.01 percent to 40 percent and that the increased common equity component be included in the setting of its rates effective January 1, 2010.

The Commission considered, among other matters, its jurisdiction, the fair return standard, evidence on TGI's business risks, and credit ratings and metrics and concluded that TGI's business risk had increased since 2005 and that the appropriate equity ratio for TGI was 40 percent effective January 1, 2010.

TGI also requested an increased in its return on equity ("ROE") from the existing 8.47 percent to 11 percent for rate setting purposes, and that the new ROE for TGI be used in establishing the ROE for TGVI and TGW for rate setting at a premium of 70 basis points and 50 basis points respectively over TGI's ROE, and that the revised ROE for TGI, TGVI and TGW be effective July 1, 2009.

The Commission considered the various approaches used to determine ROE and the expert evidence called on behalf of Terasen and of the Intervenor on ROE. It concluded that primary weight should be accorded to the Discounted Cash Flow approach, lesser weight to the Equity Risk Premium approach (including the Capital Asset Pricing Model) and minimal weight to the Comparable Earnings approach. The Commission concluded that the appropriate ROE for TGI is 9.50 percent. Noting that the Intervenor did not oppose the request that the ROE be effective July 1, 2009 the Commission granted that request.

The July 1, 2009 effective date results in the ROE for TGI for 2009 being 8.47 percent for six months and 9.50 percent for six months, or an average annual ROE of 8.98 percent. The ROEs for TGVI and TGW become on average respectively 60 and 50 basis points higher as a result of the Commission's conclusion on their level of business risk compared to that of TGI.

The Commission considered evidence on whether the existing automatic adjustment mechanism used in the determination of the ROE of TGI, TGVI and TGW still met the fair return standard and determined that it did not. The automatic adjustment mechanism would only have produced an ROE of 8.43 percent for TGI in 2010 compared to the 9.50 percent determined by the Commission. The Commission has accordingly directed that the automatic adjustment mechanism be eliminated. However, it has also directed TGI to complete its study of alternative formulae and report to the Commission by December 31, 2010.

The Commission declined to continue to allow TGVI a premium of 70 basis points over TGI's ROE. It determined the premium should be reduced to 50 basis points as a result of a reduction in TGVI's risk since 2005. TGW was allowed a risk premium of 50 basis points over TGI's ROE.

The Commission has also determined that the ROE for TGI will continue to serve as the Benchmark ROE for FortisBC and any other utility in BC that uses the Benchmark ROE to set rates.

## 1.0 INTRODUCTION

On May 15, 2009 Terasen Gas Inc. ("TGI"), Terasen Gas (Vancouver Island) Inc. ("TGVI"), and Terasen Gas Whistler Inc. ("TGW") filed an application under sections 59 and 60 of the *Utilities Commission Act* with the British Columbia Utilities Commission (the "Application"). In this Decision the three utilities are collectively referred to as "Terasen"; the *Utilities Commission Act* as the "Act" or "UCA"; and the British Columbia Utilities Commission as the "Commission" or "BCUC."

The Application seeks the following relief:

- that the Commission determine an increased return of 11 percent on common equity ("ROE") for TGI for rate-setting purposes, that the so determined ROE for TGI be used in establishing the ROE of TGVI and TGW used for rate-setting, and that the revised ROE for TGI, TGVI and TGW be effective July 1, 2009;
- that the Commission eliminate the use of an ROE automatic adjustment mechanism ("AAM") in the determination of the ROE to be used by Terasen for rate-setting;
- that, in replacement of the use of an AAM in the determination of their ROE, the ROE determined in the proceeding to be appropriate for TGI be used as the benchmark or generic ROE ("Benchmark ROE") for the determination of the ROE of TGVI and TGW. TGVI and TGW request that the Commission continue to set their respective allowed returns on equity with reference to the Benchmark ROE established in the proceeding by adding a utility specific risk premium of 70 basis points in the case of TGVI and 50 basis points in the case of TGW to the Benchmark ROE;
- that the Commission alter and increase the common equity component of TGI's capital structure for rate-setting purposes from 35.01 percent to 40 percent and that the increased common equity component be included in the setting of TGI's rates effective January 1, 2010;
- that the Commission set the current rates of TGI and TGW as interim, effective July 1, 2009, until such time as permanent rates are established which give effect to the relief requested; and
- that, pursuant to the provisions of the Special Direction [issued to the Commission under section 7 of the *Vancouver Island Natural Gas Pipeline Act*], the increase in TGVI's allowed ROE resulting from the Commission's determinations in this proceeding be treated as an increase to TGVI's cost of service, effective July 1, 2009, which will result in an adjustment

to the 2009 Revenue Deficiency or Revenue Surplus and will be reflected in the Revenue Deficiency Deferral Account ("RDDA") balance.

The process the Commission followed to hear the Application is described in greater detail in Appendix A to this Decision.

The allowable return on a utility's invested capital is a combination of two factors when determining a fair return:

- 1) the percent of its invested capital that is held as equity relative to the percent held as debt, that is, its capital structure; and
- 2) the rate of return allowed on the equity portion of the capital structure.

Kathleen C. McShane provided expert evidence on behalf of Terasen on capital structure and fair return on equity. Her testimony is found at Exhibit B-1, Tab 3. Ms. McShane refers to this combination when she states that, "varying both capital structures and ROEs is used by the BCUC" and is one approach to determining a fair return (Exhibit B-1, Tab 3, p. 21). She also states that, "the capital structure and the return on equity are inextricably linked." (Exhibit B-1, Tab 3, p. 3)

The capital structure and ROE for Terasen are established by the Commission for use in the calculation of rates. The actual achieved ROE and return on invested capital for a given year may differ from the ROE established by the Commission for that year because of such factors as variances between actual and forecast revenues or costs of service.

Since 1994 the Commission has annually set the ROE for utilities in British Columbia based on the Benchmark ROE for TGI using a formula that ties the utilities' rates of return on equity to the forecast yield on long-term Canada (30 year) bonds for the forthcoming year. This formula has commonly been referred to as the AAM. The capital structure of utilities has been reviewed less frequently, generally when there has been an application to the Commission for such a review. The

background of ROE awards in BC, Canada, and the US since 1994, including the use of a formula to establish ROE is set out in Appendix B to this Decision.

Terasen submits that:

- The fair return standard is not being met;
- The formula that produces the ROE is “broken”;
- The recent turbulence in credit markets has further highlighted the formula’s flaws; and
- TGI’s business risks are increasing.

Combined, in Terasen’s view, these four realities mean that the results of the current formulaic approach to ROE are inadequate, and the current equity component in the capital structure of TGI should be increased. Terasen urges the Commission to update both the Benchmark ROE and TGI’s capital structure and make the required determination to enable utilities in BC to operate from a healthy and sustainable foundation and continue to appropriately serve the public interest.

(Exhibit B-1, pp. 9, 10)

The Joint Industry Electricity Steering Committee (“JIESC”) submits that the fair return standard is being met, that TGI’s business risks have not increased, and the AAM has demonstrated remarkable strength in the face of the largest disruption to financial markets in the last 70 years. This is in part evidenced by the \$900 million premium (1.7 times the net book value of the equity) paid by Fortis Inc. for Terasen Inc. (“TI”) (the parent company of the three Terasen utilities) in the spring of 2007 and by TGI’s ability to issue \$100 million in debt in February 2009. (JIESC Argument, p. 4)

In order to assess the reasonableness of the relief sought by Terasen, it is necessary to consider the legal and regulatory bases for determining an appropriate capital structure and ROE, and the issues flowing therefrom. These considerations are made in the context of the recent economic situation, including the challenges in financial markets in 2008-2009, as well as recent relevant regulatory developments, particularly the 2009 National Energy



Board (“NEB”) Trans Quebec & Maritimes Pipeline Decision RH-1-2008 (“TQM Decision”), the NEB’s Reasons for Decision-review of the Multi-Pipeline Cost of Capital Decision (RH-2-94) dated October 8, 2009 (“NEB Letter Decision”), in which it determined that the RH-2-94 Decision will not continue in effect, that is, the return on equity for the pipelines regulated by the NEB will not be determined by an automatic adjustment mechanism, and the Alberta Utilities Commission (“AUC”) 2009 Generic Cost of Capital Decision, Decision 2009-216 (“AUC Decision 2009-216”) issued on November 12, 2009.

This Decision is divided into the following Sections which address the issues that the Commission Panel needs to determine:

#### Section 2.0 - Jurisdiction and the Fair Return Standard

This Section discusses the following issues: What are the interests of the parties and the Commission’s obligations under the *Utilities Commission Act*? What is the fair return standard and how does the Commission Panel determine whether it is currently being met? Are US data relevant in this determination? If the fair return standard is not being met for TGI, how should the Commission Panel proceed to ensure that it is met?

#### Section 3.0 - Risks and Capital Structure

This Section discusses the following issues: Have TGI’s risks increased since 2005 and if so how should this be reflected in TGI’s capital structure? What is TGI’s appropriate capital structure?

#### Section 4.0 - The Appropriate Return on Equity for TGI

This Section discusses the following issues: Given TGI’s capital structure what is the appropriate ROE for TGI and what approaches to its determination should the Commission Panel give weight?

#### Section 5.0 - The Automatic Adjustment Mechanism

This Section discusses the following issues: Given TGI’s appropriate ROE, does the Commission’s AAM produce an ROE that meets the fair return standard? If not, should the Commission retain, amend, or eliminate its AAM?

Section 6.0 - The Appropriate Return on Equity for TGI and TGW

This Section discusses the following issue: Given TGI's appropriate capital structure and ROE what are the appropriate ROEs for TGI and TGW?

Section 7.0 - TGI as the Benchmark Utility

This Section discusses the following issue: What impact should the Commission Panel's determination have on the remaining utilities in BC that might be affected, namely, FortisBC Inc. ("FortisBC") and Pacific Northern Gas Ltd. ("PNG")?

## 2.0 JURISDICTION AND THE FAIR RETURN STANDARD

In this Section the following issues are addressed:

- What are the interests of the parties and the Commission's obligations under the Act?
- What is the fair return standard and how does the Commission Panel determine whether it is currently being met?
- Are US data relevant in this determination?
- If the fair return standard is not being met for TGI, how should the Commission Panel proceed to ensure that it is met?

### 2.1 The Interests of the Parties and the Commission's Obligations under the Act

Terasen states that the impact of its Application is to increase TGI's revenue requirements by \$44.9 million, an increase of approximately 3.6 percent (\$38 per year) to the annual bill of a TGI residential customer in the Lower Mainland. Further, Terasen states that the impact can be broken down as follows:

Company	Impact of 1% Equity Increase (\$000)	Impact of .25% ROE Increase (\$000)
TGI	\$2,400	\$3,100
TGVI	N/A	\$800 <sup>(1)</sup>

(1) Terasen notes that the revenue requirement increase for TGVI may not necessarily translate to a customer rate impact because of the soft cap mechanism.

(Source: Exhibit B-3, BCUC 3.5, 3.6)

The Intervenor takes exception to the timing and amount of the increases being sought. Counsel for JIESC characterizes them as "worse than unreasonable, they are blatantly opportunistic and must be denied" (T2:23). The British Columbia Old Age Pensioners Organization *et al.* ("BCOAPO") submits that, "these increases would occur despite the Applicant...providing the exact same service

quality and reliability as it currently does. In other words, it represents money for nothing.”  
(BCOAPO Argument, para 1)

It is clear that Terasen has a significant interest in receiving the relief sought in the Application and the Intervenors have a significant stake in minimizing it.

Terasen has made the Application pursuant to sections 59 and 60 of the *Act*. Those sections are quoted in their entirety in Appendix C to this Decision.

Under section 60(1)(b) of the *Act*, when setting a rate the Commission must have due regard to the setting of a rate that:

- (i) is not unjust or unreasonable within the meaning of section 59;
- (ii) provides to the public utility for which the rate is set a fair and reasonable return on any expenditure made by it to reduce energy demands; and
- (iii) encourages public utilities to increase efficiency, reduce costs, and enhance performance.

Under section 59(5) of the *Act* a rate is “unjust” or “unreasonable” if it is:

- (a) more than a fair and reasonable charge for service of the nature and quality provided by the utility;
- (b) insufficient to yield a fair and reasonable compensation for the service provided by the utility, or a fair and reasonable return on the appraised value of its property; and
- (c) unjust and unreasonable for any other reason.

The Industrial Customer Group (“ICG”) submits that the *Act* requires the Commission to balance the interests of the parties and set a just and reasonable rate that provides the utility with a fair return on the rate base. ICG submits that section 59 of the *Act* explicitly requires the Commission to consider the rates from the customer perspective, specifically whether the proposed rate is fair and reasonable for the nature and quality of the service. Part of that consideration must include the economic impact of the rate for the service on customers. The Commission’s primary

responsibility is to regulate rates as a surrogate for competition and to keep rates within the reasonableness one would expect in a properly functioning market. Considering the customer perspective is one-half of the balance equation in a regulated environment. When acting as the surrogate for competition, the Commission cannot and must not protect Terasen from all competitive risk by raising the ROE at the expense of customers. Doing so would ignore the interest of the customers who are captive to the monopoly. (ICG Argument, p. 5)

Terasen submits that the following quotation from page eight of the Commission's 2006 Decision on Terasen's ROE, Capital Structure and the AAM ("2006 ROE Decision") correctly sets out that the Commission has a duty to approve rates that will provide a reasonable opportunity to earn a fair return on invested capital:

"The Commission Panel does not accept that the reference by Martland J. to a "balancing of interests" to mean that the exercise of determining a fair return is an exercise of balancing the customers' interests in low rates, assuming no detrimental effects on the quality of service, with the shareholders' interest in a fair return. In coming to a conclusion of a fair return, the Commission does not consider the rate impacts of the revenue required to yield the fair return. Once the decision is made as to what is a fair return, the Commission has a duty to approve rates that will provide a reasonable opportunity to earn a fair return on invested capital." (Terasen Reply, para 6)

## **2.2 The Fair Return Standard**

Terasen cites the TQM Decision, which summarizes the fair return standard at page 6:

"The Fair Return Standard requires that a fair or reasonable overall return on capital should:

- be comparable to the return available from the application of the invested capital to other enterprises of like risk (comparable investment requirement);
- enable the financial integrity of the regulated enterprise to be maintained (financial integrity requirement); and

- permit incremental capital to be attracted to the enterprise on reasonable terms and conditions (capital attraction requirement).” (Terasen Argument, para 12)

Terasen and the Intervenors address the fair return standard from the perspectives of the return on invested capital of the utility, the return on the equity, the level of financial risk, the creditworthiness and financial integrity of the utility, and, on the premium paid over book value for TI by Fortis Inc. in 2007.

In her evidence, Ms. McShane states: “The capital structure and the return on equity are inextricably linked; the fair return on equity cannot be established without reference to the level of financial risk inherent in the capital structure adopted for regulatory purposes.” (Exhibit B-1, Tab 3, p. 3)

Ms. McShane addresses the maintenance of the creditworthiness and financial integrity of the utility and opines that the capital structure of TGI, in conjunction with the returns allowed on its sources of capital, should provide the basis for a stand-alone investment grade debt ratings in the A category. Debt ratings in the A category assure that Terasen should be able to access the capital markets on reasonable terms and conditions during both robust and difficult, or weak, capital market conditions. (Exhibit B-1, Tab 3, p.26; Terasen Argument, para 101)

The Intervenors do not disagree with the A rating but observe that Terasen has enjoyed an A rating for many years. (JIESC Argument, p. 12)

JIESC points out that:

- in 2007, Fortis Inc. “purchased the TGI equity (sic) paying a premium of \$900 million for it. A premium over book value upon which Terasen is not permitted to allow either a debt or equity return. This amounts to 1.7 times the equity value”;
- in February 2009, a time when “debt markets were still recovering from the 2008 financial turmoil” TGI was able to issue \$100 million debt; and

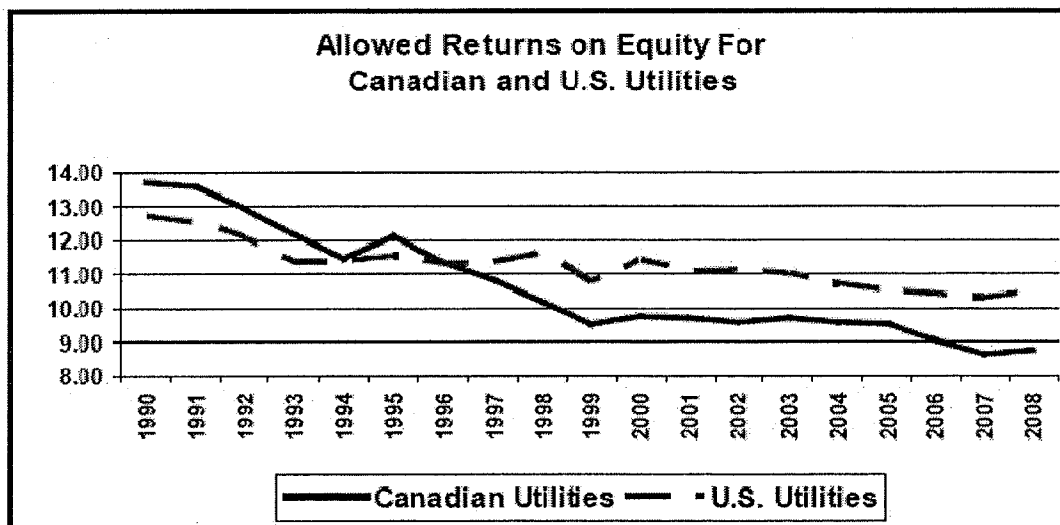
- in May 2009 TGI's bond rating was confirmed at "A" by both DBRS Limited ("DBRS") and Moody's Investors Services ("Moody's"). (JIESC Argument, p. 13)

Terasen points out that TGI's Moody's rating actually is A3 and submits that the rating is "only one notch above BBB+, which is a level at which even Dr. Booth believes TGI should not be." (Terasen Reply, para 82)

Terasen also addresses the issue of acquisition premia and refers the Commission to its 2006 ROE Decision where the Commission addressed the acquisition of TI by Kinder Morgan Inc. ("KMI") and stated at page 13: "There is no evidence before the Commission that any of the premium paid by KMI will be included in either of the Companies' rate bases and recovered from their customers. The Commission's role is to determine a suitable capital structure for the Applicants and return on equity for a benchmark low-risk utility and the KMI/TI transaction is not relevant to the Commission's determination." (Terasen Reply, para 94)

### 2.3 The Applicability of US Data in Determining the Fair Return Standard

Terasen provides the following chart to compare the differences between ROEs allowed to electric and natural gas utilities by state regulatory agencies in the US with the ROEs allowed by Canadian regulatory agencies:



(Exhibit B-1, p. 14)

Terasen includes two reports as appendices to the Application:

- i) a report sponsored by the Ontario Energy Board ("OEB") entitled "A Comparative Analysis of Return on Equity of Natural Gas Utilities" dated June 14, 2007 and authored by Concentric Energy Advisors ("CEA") (the "CEA Report"); and
- ii) a report sponsored by the Canadian Gas Association ("CGA") entitled "Allowed Return on Equity in Canada and the United States: An Economic, Financial and Institutional Analysis" authored by National Economic Research Associates, Inc ("NERA") dated February 2008 (the "NERA Report").

The CEA Report made ten conclusions, of which three are germane:

1. "(6) On the whole, there are no evident fundamental differences in the business and operating risks facing Ontario utilities as compared to those facing US companies or other provinces' utilities that would explain the difference in ROEs";
2. "(7) Other market related distinctions and resulting financial risk differences, particularly between Canada and the US, do exist. These factors, including differences in market structure, investor bases, regulatory environments, and other economic factors may have an impact on investors' return requirements for Canadian versus US utility investments. However, through analysis and interviews with key market participants, representatives of customer groups, and other individuals with past involvement in ROE proceedings in Canada and the US, these differences are determined to be negligible"; and
3. "(9) As a result of the interplay between the Canadian and US markets, Canadian utilities compete for capital essentially on the same basis as utilities in the US." (Exhibit B-1, Appendix 3)

The NERA Report concludes, in part:

"We find that the regulatory institutions and customs for setting regulated prices for investor owned Canadian and US utilities are very alike. That is, in accounting, administrative procedures, regulatory legislation, and basic constitutional protections of private property, little or nothing separates the average Canadian from the average US regulatory jurisdictions..."



“We examine the definition of risk to investors of placing their capital at the use of the public, for which the ROE provides compensatory payment. We look at how those risks could be different in Canada versus the US. What we find is that the basic sources of risk—regulatory, business and financial—are comparable with respect to both jurisdictions. Objective and disinterested analyses of the relative risks between Canadian and US utilities are rare, but what we have found points to no smaller risks in Canada. As such, we conclude that there is no objective evidence showing that business or regulatory risks are sufficiently lower in Canada to account for the divergences in Figure 1 [A Figure showing the Allowed Return Differential (Canada - US) for Gas Distribution Utilities in the period 1992-2007].” (Exhibit B-1, Appendix 4, Executive Summary)

Terasen filed the evidence of Mr. Donald A. Carmichael, a financial consultant and advisor, as Tab 2 to the Application. His opinion evidence addresses the integration of markets and competition for capital. Mr Carmichael states that the globalization of Canadian capital markets and the removal of various personal and institutional restrictions on foreign investment have caused the Canadian and international capital markets to become substantially more integrated than in the past, and points to the fact that:

- many of Canada’s largest institutional investors have become major players on international stock markets and non-Canadian private equity situations;
- the market in Canada for the new issuance of foreign bonds and debentures has grown rapidly reflecting Canadian lenders’ desire to diversify their portfolios with new issuers and to achieve higher returns than those available from domestic issuers; and
- the funding requirements for announced infrastructure projects in Canada will be significant and will directly compete with debt and equity financing for utilities. (Exhibit B-1, Tab 2, pp. 32-35)

Terasen submits that restrictions on foreign investments by Canadians have been removed and that competition for capital is not constrained by provincial or national borders. Canadian and international capital markets have become more integrated than in the past. Large amounts of capital are required for infrastructure projects in Canada and around the world. Terasen submits that TGI’s capital structure and return on equity must be comparable to other companies of similar risk to allow it to successfully compete for capital. (Terasen Argument, para 19)

The NEB addressed the issue in the TQM Decision where it stated:

“In the Board’s view, global financial markets have evolved significantly since 1994. Canada has witnessed increased flows of capital and implemented tax policy changes that facilitate these flows. As a result, the Board is of the view that Canadian firms are increasingly competing for capital on a global basis.

A fair return on capital should, among other things, be comparable to the return available from the application of the invested capital to other enterprises of like risk and permit incremental capital to be attracted to the regulated company on reasonable terms and conditions. TQM needs to compete for capital in the global market place. The Board has to ensure that TQM is allowed a return that enables TQM to do so. ...As a result, the Board is of the view that pipeline companies operating in the U.S. have the potential to act as a useful proxy for the investment opportunities available in the global market place.” (TQM Decision, pp. 66-67)

In addition, the AUC stated that it would, “review the market based return data available on the record in respect of the sample US utility proxy groups and employ this data in its CAPM [Capital Asset Pricing Model] and DCF [Discounted Cash Flow] determinations.” (AUC Decision 2009-216, para 205)

Terasen submits that global competition for capital means that TGI’s capital structure must be comparable to its North American peers. In Terasen’s view, the TQM Decision recognizes this capital requirement, which should also be recognized by the Commission. (Terasen Argument, para 95)

In the 2006 ROE Decision the Commission addressed what it saw as the two issues of relying on US data to establish appropriate capital structures and ROEs for utilities. On the first issue (i.e. that there are opportunities for Canadian investors to commit capital globally) the Commission noted that Canadian investors faced a considerable foreign exchange risk when investing and was not convinced that the Federal Government’s relaxation of foreign content rules in retirement portfolios should be a reason to increase the equity return of a benchmark low-risk utility.

On the second issue (i.e. that in measuring the risk premium it is necessary to look beyond Canadian data) the Commission stated that it was prepared to accept the use of historical and forecast data of US utilities when applied: as a check to Canadian data, as a substitute for Canadian data when those data do not exist in significant quantity or quality, or as a supplement to Canadian data when Canadian data give unreliable results; based on the fact that the US and Canadian economy and capital markets were closely integrated. (2006 ROE Decision, p. 50)

BCOAPO submits that “select US utilities...are not useful in determining comparable returns and comparable risk.” (BCOAPO Argument, para 7)

Dr. Laurence Booth provided a written opinion of the fair return for TGI on behalf of the Intervenors. In his evidence, Dr. Booth states: “The message from these....disasters of US regulatory policy [i.e. the bankruptcy of Pacific Gas and Electric; the Enron and WorldCom frauds; the failure of US entities such as Lehman Brothers; and ‘stock market disasters represented by pipelines like Duke Energy’] is that the US is not Canada, no matter what American witnesses before the Canadian regulatory tribunals seem to think. Regulation in the US has followed a different path to that in Canada, as is patently obvious to anyone who looks at its results. Drawing any insights from how investors perceive US utilities (or banks) given this different regulatory approach in my judgment is of very little value. I would strongly advise Canadian regulatory tribunals to ignore the advice of experts, who have US experience in mind when they form (sic) their judgments. Instead, they should focus on Canadian solutions that have worked rather than US solutions that have resulted in disaster.” (Exhibit C11-5, p. 103)

Terasen submits that the evidence demonstrates that Dr. Booth’s attempt to use Enron and WorldCom as examples of light-handed US utility regulation fails; neither Enron nor WorldCom were US utilities or utility holding companies, and Dr. Booth’s citation of Enron, WorldCom, or Duke Energy fails to support the argument that the Commission should not consider US utilities in its determination of a fair return on equity. (Terasen Argument, para 352-53)

## Commission Determination

In view of the fact that no party took issue with the articulation of the fair return standard by the NEB in the TQM Decision, the Commission Panel endorses it. It also agrees with Terasen that the combination of the equity ratio and the allowed return thereon should be adequate to attract capital on reasonable terms and conditions and allow TGI to maintain the A3 rating on its debt and unsecured debt from Moody's.

As for the Intervenors' submissions that this is not the time for a rate increase, and ICG's submission that the Commission must balance the requirements of customers with those of Terasen, the Commission Panel adopts the Commission's statement in the 2006 ROE Decision where it made it clear that its obligation was and is to set rates that are fair and reasonable, and to allow a utility the opportunity to earn a fair rate of return.

The Commission Panel has considered the premium paid by Fortis Inc. to acquire the equity capital of TI in 2007. As was the case with respect to the premium paid by KMI for the shares of TI discussed in the 2006 ROE Decision there is no evidence before the Commission that any of the premium paid by Fortis Inc. will be included in any of the Companies' rate bases and recovered from their customers. Further, as was the case with the KMI acquisition, the Commission imposed "ring-fencing" conditions upon Fortis Inc. The Commission Panel considers that the Commission's role is to determine an appropriate capital structure and return on equity for Terasen and that the acquisition of TI by Fortis Inc. is not relevant to the Commission Panel's determination in this regard.

As for the US data, the Commission Panel agrees with the NEB and AUC that utilities in Canada need to compete for capital in the global market place, and regulatory agencies in Canada have to ensure that utilities subject to their jurisdiction are allowed a return that enables them to do so.

In addition, the Commission Panel continues to be prepared to accept the use of historical and forecast data of US utilities when applied: as a check to Canadian data, as a substitute for Canadian data when Canadian data do not exist in significant quantity or quality, or as a supplement to Canadian data when Canadian data gives unreliable results. Given the paucity of relevant Canadian data, the Commission Panel considers that natural gas distribution companies operating in the US have the potential to act as a useful proxy in determining TGI's capital structure, ROE, and credit metrics.

Having determined what the fair return comprises and that US data may be relevant in its determination, the Commission Panel considers that there are enough data before it to bring into question whether the fair return standard is being met in TGI's case. Accordingly, in the following sections the Commission Panel examines the evidence and determines whether an increase in TGI's equity ratio is justified, following which it determines the approaches to which it will give weight in its determination of TGI's allowed ROE. The Commission Panel examines the result of these determinations to ensure that the fair return standard is met for TGI.

### 3.0 RISKS AND CAPITAL STRUCTURE

This Section defines risk in the utility regulatory environment, considers TGI's business risk and determines a suitable capital structure for TGI for regulatory purposes. The following issues are addressed:

- Have the business, regulatory and financial risks of TGI increased since 2005 and, if so, how should they be reflected in TGI's capital structure?
- What is TGI's appropriate capital structure?

Terasen sets out the following reasons why TGI's common equity ratio should be increased from 35.01 percent to 40 percent:

- 1) TGI's level of business risk has increased;
- 2) there have been material increases in the allowed common equity ratios of some of TGI's Canadian utility peers;
- 3) its credit metrics are weak for its credit ratings, and in isolation fall below investment grade guidelines;
- 4) its equity ratio of 35 percent, together with lower allowed ROEs and lower corporate income tax rates have caused its interest coverage ratios to be the lowest in Canada and to continue to fall;
- 5) rating agencies continue to view a common equity ratio of 35.01 percent as weak. At 40 percent TGI would still lie at the lower end of Moody's guideline range for an investment grade rating on this credit metric;
- 6) the further global integration of the Canadian capital markets warrants a strengthening of TGI's financial parameters; and
- 7) the forecast North American and global investment requirements for infrastructure point to significant competition for capital going forward. TGI should be positioned so that it can compete successfully. At the existing capital structure, TGI's credit metrics compare unfavourably to those of its US peers. (Exhibit B-1, Tab 3, pp. 39-40)

The assessment of risks has significant bearing on the application of the fair return standard and the determination of an appropriate common equity ratio for regulatory purposes.

### 3.1 The Definition of Risk in the Utility Regulatory Environment

In discussing business risk in its Argument, Terasen refers to page 17 of the 2006 ROE Decision. At that reference, the Commission defined risk as follows:

“The Applicant and Intervenors broadly agree on the definition of risk to a benchmark low-risk utility. Investment risk comprises the sum of business risk, financial risk and regulatory risk.”

“Business risk is the risk that the utility will not be able to earn a return on its capital or of its capital. Dr. Booth summarized those elements that constitute business risk as:

‘...stemming from uncertainty in the demand for the firm’s product resulting, for example, from changes in the economy, the actions of competitors, and the possibility of product obsolescence. This demand uncertainty is compounded by the method used by the firm and the uncertainty in the firms’ cost structure, caused, for example, by uncertain input costs, like those for labour or critical raw or semi-manufactured materials.’ ”

“Financial risk is measured through the debt equity ratio of a utility.”

“Regulatory risks are those that might arise from regulatory lag, from disallowed operating or capital costs or from punitive awards.” (2006 ROE Decision, p. 17 [references omitted]; Terasen Argument, para 23)

Terasen discusses the business risk of TGI and states that it is useful to consider short-term and long-term risks. In the short-term the focus is generally on TGI’s ability to earn a fair return on its investments from year to year. In the longer term the risk relates to whether or not the utility will be able to recover the cost of its investments over their useful lives and earn a fair return on such investment over the long run. (Exhibit B-3, BCUC 14.1)

Terasen notes that business risk has both short-term and long-term aspects and that since a local distribution company’s (“LDC”) investments have a useful life that extends over a long period of time, it is the longer-term fundamental business risks that must be given primary consideration when evaluating the business risk of a gas distribution utility.

Ms. McShane observes that regulatory agencies in Canada have followed two separate approaches to addressing utility risk. The NEB and the AUC have adopted one approach whereby each utility subject to their jurisdiction has an individual equity ratio which is determined by its respective long and short-term business risks, to which is applied a uniform ROE. The other approach, followed by the Commission, the OEB and the *Regie de l'Energie*, is to establish the capital structure and ROE for a benchmark utility and to set capital structures and ROEs for all other utilities in their jurisdiction with reference to the benchmark. (Exhibit B-1, Tab 3, p. 21)

### **Commission Determination**

The Commission Panel notes that no party took issue with the Commission's characterization of risk in its 2006 ROE Decision and accordingly accepts the definition for the purposes of this proceeding.

The Commission Panel accepts Terasen's characterization of its business risk as having long-term and short-term aspects and it will consider them separately in Sections 3.2 and 3.3 of this Decision.

In its 2006 ROE Decision the Commission stated: "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." (2006 ROE Decision, p. 36)

In this Decision, however, the Commission Panel considers the effect of deferral accounts in reducing the risk of TGI as reducing the short-term, and not the long-term, business risk of TGI, and will accordingly adjust TGI's ROE rather than its capital structure.



### 3.2 TGI's Long-Term Business Risk

In Tab 1 of its Application, Terasen sets out key factors that have affected TGI's business risks in recent years:

- 1) Provincial climate change and energy policies have increased the risk inherent to TGI's core natural gas business;
- 2) the effect of aboriginal rights issues on utilities in BC;
- 3) the competitive position of natural gas relative to electricity has been weakened;
- 4) TGI is capturing a smaller percentage of new construction;
- 5) electricity is increasingly the choice of high-density housing;
- 6) alternative energy sources further weaken TGI's competitive position;
- 7) fuel switching has also diminished demand for natural gas; and
- 8) the use of natural gas per (customer) account continues to decline. (Exhibit B-1, p. 24 and Tab 1)

Terasen states that the first two factors are new in that they have emerged since its last ROE application in 2005, and that the remaining key factors were identified by it as factors affecting its business risk in 2005. These risk factors are addressed below.

#### 3.2.1 Provincial Climate Change Policies

Terasen states that the Throne Speech delivered on February 13, 2007 outlined the province's Greenhouse Gas ("GHG") reduction target. A second announcement on February 19, 2008 introduced a carbon tax in BC. These two policies and their subsequent implementation into law have increased TGI's business risk since 2005. Since the publication of, "The BC Energy Plan: A Vision for Clean Energy Leadership" ("2007 Energy Plan") in February 2007, the provincial government has taken a leadership role in the fight against climate change/global warming and, in the spring 2008 Legislative Session, introduced the following bills:

- Bill 15 – *Utilities Commission Amendment Act*;

- Bill 16 – *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act*;
- Bill 18 – *Greenhouse Gas Reduction (Cap and Trade) Act*;
- Bill 31 – *Greenhouse Gas Reduction (Emission Standards) Statutes Amendment Act*;
- Bill 27 – *Local Government (Green Communities) Statutes Amendment Act, 2008*; and
- Bill 37 – *Carbon Tax Act*.

Under the *Greenhouse Gas Reduction Target Act* (passed in 2007), and under Ministerial Order dated November 25, 2008, BC's GHG emission targets levels have been established as:

- 2012 6 percent below 2007 levels;
- 2016 18 percent below 2007 levels;
- 2020 33 percent below 2007 levels;
- 2050 80percent below 2007 levels. (Exhibit B-1, Tab 1, pp. 3, 5)

Terasen states that as of March 31, 2009, pursuant to a climate action charter between the Province and the Union of BC Municipalities establishing, among other things, a commitment to a goal of becoming carbon neutral by 2012, 174 local governments had become signatories. In addition the Province has set emission targets for universities, schools and hospitals.

Terasen states that TGI's risk profile has increased substantially due to the climate change challenge, the provincial GHG reduction targets, and how these targets have shaped customers' views of natural gas. In its view, there can be no doubt that these actions will have an impact on the use of natural gas, TGI's opportunities, and TGI's ability to recover its investment over the long term.

Terasen states that the BC Carbon Tax, implemented effective July 1, 2008, to help the Province reach its GHG reduction targets, reduces the competitiveness of natural gas relative to alternative energy sources that are not subject to the carbon tax, and provides a direct pricing signal to customers in relation to GHG emissions. The tax started at \$10/tonne of GHG and will increase by \$5/tonne each year to \$30/tonne by 2012. Terasen cites the BC Climate Action Team's

recommendation that: “After 2012, if required to achieve the emissions targets, increase the British Columbia carbon tax in a manner that aligns with the policies of other jurisdictions and key economic facts.” (Exhibit B-1, Tab 1, pp. 10-11).

A Terasen witness testified that “and there are calls...from certain academics and others that say in order for the government to get the consumption of GHGs down, it’s going to have to move to \$300. So, that’s \$15 a GJ [gigajoule], not \$1.50, on top of the commodity and the delivery rates” (T2:155). \$300 per tonne is also the carbon tax assumed by 2026 in the Nyboer Report discussed later in this Section (Exhibit B-11, Panel 1.1).

Terasen submits that the carbon tax reduces natural gas’ competitiveness relative to alternative energy sources that are not subject to the carbon tax and will help to sensitize customers to the level of GHG emissions they generate by sending them price signals. The provincial carbon tax increases the business risks of TGI. (Terasen Argument, para 52)

Terasen states that government policy that discourages consumers from using natural gas will have the effect of reducing throughput volumes on the TGI system and reducing the attachment of new customers. The recovery of fixed costs from a smaller customer base, and on lower throughput, leads to rate pressure for the remaining customers. Left unmitigated and unchecked, these effects can lead to loss of existing natural gas customers and a potential “downward spiral” in which the risk of non-recovery of invested capital increases and assets potentially become stranded. (Exhibit B-11, Panel 1.1)

Terasen filed a report entitled, “A Technology Roadmap to Low Greenhouse Gas Emissions in the Canadian Economy: A sectoral and regional analysis,” dated August 22, 2008, and prepared for the National Round Table on the Environment and the Economy by J & C Nyboer and Associates, Inc, (the “Nyboer Report”) which describes itself as a “technology roadmap derived from the *Getting to 2050* deep emissions reductions pathways that simulates a 20 percent reduction in Canada’s GHG emissions from 2006 levels by 2020 and a 65 percent reduction in emissions by 2050.” The Nyboer Report’s findings are that by 2050 virtually all residential and commercial space and water heating

in BC will have migrated from natural gas to electricity. (Exhibit B-11, Panel 1.1, and Attachment 1.0)

TGI's President agreed that under this scenario TGI would be out of business by 2050, but testified "We think it's one of many (possible scenarios). Our concern is what degree of influence it seems to be having in certain circles amongst policy makers." (T3:279-80)

Terasen stated that:

"Reports of this type to policy makers, with access by consumers, can and does shape the long-term view of policy makers and the broader community respecting a product (in this case, natural gas) and may well be influential in formulating public policy that has long-term negative impacts on the demand for that product (i.e. natural gas). The outcome identified in the Report would reduce throughput on the Terasen natural gas delivery systems, which all else equal, will increase the unit costs to the remaining natural gas customers. In the extreme, the Company could have stranded assets if the roadmap that is outlined in the Report materializes." (Exhibit B-11, Panel 1.1, p. 2)

TGI's President summed up his testimony as follows:

"We believe that natural gas is a foundational fuel, not a transitional fuel, but we're not sure that all the necessary parties are in alignment with that. We have an absence of a continental carbon policy, we have an absence of a national one, and we've got a lot of vulcanization [balkanization] going on that ultimately needs to be and I think will be resolved. I'm just not sure how all the crumbs are going to fall from that. We're not sitting before this Panel saying the sky is falling. Let us be clear on that. Chicken Little is not in the hearing room...we're not here saying that this company is going out of business." (T3:227-28)

The Commercial Energy Consumers Association of British Columbia ("CEC") submits that the overall result of its evaluation of TGI's risk in 2009 versus 2005 is that significant new positive reductions of risk are now in sight, whereas in 2005 these did not exist. Offsetting this are the new provincial GHG reduction policies which would potentially limit any throughput growth for the utility.

CEC considers the net balance of these overall results to be the key focus of determining if the business risk has changed sufficiently enough to warrant a change to either the allowed ROE or the equity ratio. CEC's assessment of the evidence is: i) that TGI's business risk has not increased appreciably enough to warrant a change to allowed ROE or its equity ratio, and ii) that the Province's GHG policies are so new, and Terasen's analysis and mitigation response are so limited at this time, that Terasen has not established a persuasive case for increased business risk.

CEC submits that it would be premature for the Commission to make assumptions that the business risk surrounding TGI's inability to recover its investment capital has increased until the Commission has one or more scenario projections in evidence which lay out how the targeted reductions might unfold for Terasen and its customers. (CEC Argument, p. 15)

ICG submits that Provincial climate change and energy policies do not necessarily increase TGI's business risks as Provincial energy conservation measures affect throughput, but Terasen's profits are not dependent on volume. ICG characterizes Terasen's concerns about carbon tax impacts after 2012 as "purely speculative," and submits that: "[i]t is premature for Terasen to assume the worst, and seek to impose additional economic burden on its customers that cannot be supported by the current circumstances." (ICG Argument, p. 8)

JIESC submits that "these alleged "risks" (i.e. climate change and First Nations) must be considered in the context of their likely impact on Terasen's capability to earn a return on and a return of, its capital." To the extent there are increased risks arising out of GHGs or First Nation issues, JIESC submits that these risks are "more than offset by the improvements in the competitive position of natural gas in comparison to electricity." (JIESC Argument, p. 20)

Terasen submits that such submissions "should be seen for what they are, and that is an attempt to distract the Commission from addressing the evidence before it," and that the evidence establishes, as even CEC acknowledges, that government policies and legislation have created uncertainty and will have long-term impacts on Terasen's natural gas distribution business. (Terasen Reply, para 28)

### 3.2.2 First Nations

Terasen submits that the lack of certainty of the nature and extent of aboriginal rights and title in BC together with the lack of treaties combine to create operational and regulatory complexity, and a risk of litigation, that: i) are greater than those faced by similar businesses in other jurisdictions, and ii) contribute to TGI facing a higher degree of risk than utility operations in other provinces. (Exhibit B-1, p. 14)

The Intervenors characterize First Nations' risk to Terasen as "minimal" (JIESC Argument, p. 26) and of "little impact." (BCOAPO Argument, para 29)

In Reply, Terasen submits that the primary issue in respect of First Nations risks is the increase in these risks since 2005, and none of the Intervenors suggested that there has been no increase in this risk in the past five years. (Terasen Reply, para 76)

### 3.2.3 Other Key Factors

As for the other key factors, Terasen submits that natural gas' competitive position relative to electricity has been weakened, that TGI is capturing a smaller percentage of new construction; electricity is increasingly the choice of high-density housing; alternative energy sources further weaken TGI's competitive position; that fuel switching has also diminished demand for natural gas; and that the use of gas per account continues to decline. Terasen states that many factors have been exacerbated by the uncertainty created by the provincial climate change initiatives and the introduction of the carbon tax.

BCOAPO rejects Terasen's claim that TGI's competitive position relative to electricity in BC has decreased since 2005 and submits that the exact opposite is true, citing the introduction by BC Hydro of the Residential Inclining Block rate as having actually made natural gas more competitive relative to electricity, especially for single family dwellings. BCOAPO submits that "the alleged

threat” faced by Terasen due to government policies taken as a whole is not ‘profound’ and has not materially increased Terasen’s business risk such that their common equity ratio should be changed. (BCOAPO Argument, para 19, 20)

ICG submits that the competitive position of natural gas relative to electricity has not been weakened, and that “at the very least, Terasen is currently maintaining its competitive position with BC Hydro.” (ICG Argument, p. 8)

Terasen submits that future electricity prices are uncertain due to the extent of, and cost of, resource additions and other factors, but “what is known is that BC Hydro does have major, historic low-cost, hydro-electric resources...and due to the size of those resources, relatively low electric prices will continue long into the future. On the other side of the cost comparison between the cost of natural gas and electricity to consumers is the commodity price of natural gas. It appears to be common ground between the Terasen Utilities and Intervenors that natural gas commodity prices are volatile.” (Terasen Reply, para 48-49)

Terasen also submits that the submissions of the Intervenors would have the Commission believe that if the annual cost of natural gas to the consumer is less than the annual cost of electricity then TGI does not have an increase in business risk from 2005. Terasen further submits that by focusing on cost comparisons the Intervenors’ submissions fail to take into account the uncertainty and business risks associated with non-cost factors such as public perception and changes in behaviour that are required by government regulation. According to Terasen: “There can be no doubt that the mantras of provincial government energy policy are the promotion of ‘clean’ forms of energy, such as ‘clean electricity,’ and the reduction in GHG emissions.” (Terasen Reply, para 57)

### **3.3 TGI’s Short-Term Business Risk**

Terasen provides a comparison of TGI’s earned ROE with its allowed ROE for the years 1992-2008. In the 15 years since the introduction of the AAM in 1994 the comparison shows that it has earned more than its allowed ROE in 13 years and earned less in two years. TGI’s allowed and achieved

ROEs for the years 2004-2009 are set out in the table below. In these years, TGI has been operating under a performance based regulation regime under which it shares any over-achievements with its customers. (Exhibit B-6, BCUC 91.1)

Year	Allowed ROE (%)	Achieved ROE (%) Pre-sharing	Achieved ROE (%) Post-sharing	Incentives Earned (\$000)
2004	9.15	9.344	9.247	1,179
2005	9.03	10.784	9.907	6,969
2006	8.80	10.472	9.636	7,147
2007	8.37	10.729	9.550	10,018
2008	8.62	10.637	9.628	8,726

(Source: Exhibit B-6, BCUC 91.1)

Terasen states that in July 2003 TGI received Commission approval of a negotiated settlement for a 2004-2007 Performance Based Review ("PBR") which established a process for determining its delivery charges and incentive mechanisms for improved operating efficiencies and included incentives for it to operate more efficiently through the sharing of the benefits between it and its customers.

The PBR Settlement included ten service quality measures designed to ensure TGI maintained adequate service levels and set out the requirements for an annual review process between TGI and interested parties regarding its current performance and future activities. The PBR Settlement provided for a 50/50 sharing mechanism of earnings above or below the allowed return on equity beginning in 2004.

Terasen states that in 2007 TGI applied to extend the 2004-2007 PBR Settlement agreement to 2008-2009, which the Commission approved (Exhibit B-3, Attachment 39.1), and that with the expiry of PBR and related incentive earnings, it becomes more important that the Commission ensure that TGI's investors are afforded a fair return. (Exhibit B-3, BCUC 39.2)



TGI's short-term business risk and its ability to earn a return on its capital in the short-term is affected by the Commission's approval of a number of deferral accounts which permit TGI to defer variances relating to gas commodity costs, the effect of weather, variations in residential and commercial customer usage and certain expense categories such as property taxes and short-term interest rates.

TGI provided the following table showing the dollar value and percentage of its 2009 total revenue requirement and its 2009 delivery margin revenue requirement covered by deferral accounts:

Revenue Requirement Item	Revenue Requirement		Revenue Requirement Covered by Deferred Charges			Revenue Requirement Not Covered by Deferred Charges	
	\$000's	% of Total	% Covered by Deferred Charges	(\$000's)	% of Total Revenue Requirement	(\$000's)	% of Total Revenue Requirement
Cost of Gas	\$ 1,187,999	70.3%	100.0%	\$ 1,187,999	70.3%	\$ -	0.0%
Operation & Maintenance Expenses	174,942	10.4%	4.9%	8,570	0.5%	166,372	9.5%
Property and Sundry Taxes	47,593	2.8%	100.0%	47,593	2.8%	-	0.0%
Depreciation and Amortization	89,885	5.3%	0.0%	-	0.0%	89,885	5.3%
Other Operating Revenue	(22,444)	-1.4%	4.3%	(1,000)	-0.1%	(22,444)	-1.3%
Income Taxes *	25,331	1.5%	0.0%	-	0.0%	25,331	1.5%
Interest	110,953	6.8%	94.4%	104,691	6.2%	6,262	0.4%
Equity Earned Return	75,360	4.5%	0.0%	-	0.0%	75,360	4.5%
<b>Total Revenue Requirement</b>	<b>1,889,419</b>	<b>100.0%</b>		<b>1,347,853</b>	<b>79.8%</b>	<b>341,566</b>	<b>20.2%</b>
<b>Total Delivery Margin Revenue Requirement</b>	<b>504,420</b>	<b>100.0%</b>		<b>159,854</b>	<b>31.9%</b>	<b>341,566</b>	<b>68.1%</b>

\* Since deferral accounts are maintained on a net-of-tax basis, to the extent any amounts were charged to or credited to deferral accounts, there would be an offsetting income tax impact

(Exhibit B-3, BCUC 88.2)

Terasen submits that TGI's deferral accounts have changed little since 2005, and points to the Commission's finding relating to TGI's gas commodity costs deferral accounts at page 25 of the 2006 ROE Decision that, "the vast majority of gas distribution companies in North America have some form of commodity deferral account, and that this protects both the utility from commodity risk and the customers from imprudent purchasing and from the utilities profiting from the purchase, transportation and storage of gas."

In the 2006 ROE Decision, the Commission also observed that for many of the other costs that have deferral account treatment, "that TGI is not penalized for underestimating or rewarded for overestimating a cost over which it has little or no control." Terasen submits that this observation of the Commission remains valid.

Terasen also cites the Commission's discussion of TGI's Revenue Stabilization Adjustment Mechanism ("RSAM") deferral account in the 2006 ROE Decision, where it referred to two facets of the account, the first as a weather normalization account, and the second to enable TGI to defer margin variances arising from residential and commercial customers consuming more or less gas than forecast. As for weather normalization, the Commission was of the view that TGI was similar to a number of utilities in North America that can defer the effects of temperature on usage. Since weather is a symmetrical risk, with equal odds of over and underachieving, the Commission determined that it should not be taken into account when establishing return on equity.

The Commission considered the second facet of the RSAM to be a short-term business risk mitigant, which was not available to TGI's comparators.

Terasen points out that the RSAM does not mitigate the risk associated with TGI's forecast customer additions, as it only relates to use per account, and submits that with regard to the statement that margin variance accounts are not available to other utilities, that an increasing number of other utilities both in Canada and the US now have decoupling protection, which is required to ensure that a utility is not deterred from or economically disadvantaged by undertaking energy conservation programs. In those instances where per customer usage varies from forecast because incorrect values were accepted by the regulator, Terasen submits that the values would have been accepted with no symmetrical bias. Accordingly Terasen submits that neither facet of the RSAM should be taken into account when determining return on equity, and that the RSAM should not be taken into account in considering the long-term business risks of TGI. (Terasen Argument, para 46)

### **3.4 Capital Structure**

All three of Terasen's expert witnesses commented on the equity ratio of TGI and compared it with major natural gas LDCs in Canada, utilities in Ontario, and US utilities.

Terasen sets out the equity ratios of the other major natural gas LDCs in Canada as follows:

<b>Company</b>	<b>Equity Ratio (%)</b>
TGI	35.01
ATCO Gas <sup>1</sup>	38.00
Union Gas	36.00
Enbridge Gas ("EGDI")	36.00
Gaz Metro	38.50

(1)ATCO Gas' equity ratio was increased to 39 percent by AUC Decision 2009-216.

(Source: Exhibit B-1, p. 13)

Ms. McShane also observes that ATCO Gas, Union Gas and EGDI all have preferred shares in their capital structures, whereas TGI does not, and that since 2005, the NEB has approved increases in the equity ratios of a number of gas pipelines it regulates. (Exhibit B-1, Tab 3, pp. 32-33)

Ms. McShane testified that TransCanada's increase of equity ratio to 40 percent was a result of a negotiated settlement and that she was not aware of what was traded off in return for the increase. She acknowledged that she was not aware of any regulatory agency putting weight on the equity ratios that come out of negotiated settlements. (T4:475-77)

Mr. Carmichael recommends that the Commission increase TGI's deemed equity base to at least 40 percent to achieve an appropriate stand alone financing structure. According to Mr. Carmichael, such an increase would be consistent with decisions in other Canadian regulatory jurisdictions, and primarily in Ontario, which has chosen to increase the common equity bases of i) natural gas LDCs to 36 percent for Union Gas and EGDI (in addition to their preferred shares) and ii) electric LDCs to 40 percent for Toronto Hydro and other major LDCs. The increase would also recognize that TGI must compete for debt and equity funds against thicker equity capitalized gas distribution companies from the US. (Exhibit B-1, Tab 2, p. 50)

Dr. James H. Vander Weide was retained by Terasen to: i) assess the validity of the AAM, ii) conduct an analysis of the cost of equity for TGI, and iii) recommend an appropriately fair ROE and deemed equity ratio for TGI. In his filed evidence he states that during the period 2006-08 the average approved equity ratio for US electric utilities, and for US natural gas utilities, was 48 percent and 49 percent, respectively, and that these were significantly higher than the approved equity ratio for TGI. (Exhibit B-1, Tab 4, p. 35)

JIESC submits that the only relevant changes in common equity ratios are the changes for Union Gas and EGD, whose common equity ratios have both increased from 35 percent to 36 percent since 2005 (with the increase in Union Gas's common equity ratio being, "the result of a negotiated settlement under which presumably the interveners received value"). Since it considers TGI to be less risky than these utilities, it submits that TGI should continue to have a lower equity ratio. (JIESC Argument, p. 29)

In Reply, Terasen submits that Union Gas and EGD have less business risk in that electric prices in the service areas of Union Gas and EGD are higher than BC Hydro prices, and in that neither Union Gas nor EGD are subject to government policies and legislation similar to the energy-related policies of the BC provincial government. Terasen submits that the risks of TGI are greater than those of both Union Gas and EGD. (Terasen Reply, para 84)

### **3.5 Credit Ratings and Metrics**

Terasen states that TGI's debt is currently rated by all three major debt rating agencies, Moody's, DBRS, and Standard & Poor's (on an unsolicited basis only), and that Moody's debt rating of A3 for TGI's senior unsecured debentures is the lowest rating of the three agencies and is only one level above the Baa rating category. Since it believes that bond investors are more likely to focus on the lowest rating, TGI focuses on Moody's ratings and guidelines. (Exhibit B-1, Tab 3, p. 33)

Terasen filed a Moody's report entitled "*Rating Methodology: North American Regulated Gas Distribution Industry (Local Distribution Companies)*," dated October 2006 which covers 30 gas utilities in North America (Canada and the United States). (Exhibit B-6, BCUC Attachment 111.1, p. 1)

Moody's states that the focus of its rating methodology is on the "pure" gas LDCs in North America and is concerned principally with operating utilities regulated by their local jurisdictions and not with gas utilities owned by parent holding companies that have other non-regulated businesses. TGI is the only Canadian utility included in the report, which focuses on the following core rating factors:

- sustainable profitability;
- regulatory support;
- ring fencing; and
- financial strength and flexibility.

In addition, the report analyzes factors that are common across all industries such as liquidity, corporate governance, event risk, and legal structure.

The report describes the methodology used to rate a gas utility company which focuses on the following factors and gives them the following weights:

- Sustainable Profitability
  - Return on Equity (15 percent)
  - EBIT [Earnings before Income Taxes] to Customer Base (5 percent)
- Regulatory Support
  - Regulatory Support and Relationship (10 percent)
- Ring Fencing
  - Ring Fencing (10 percent)

- Financial Strength and Flexibility
  - EBIT/Interest (15 percent)
  - Retained Cash Flow/Debt (15 percent)
  - Debt to Book Capitalization (excluding goodwill) (15 percent)
  - Free Cash Flow/Funds from Operations (15 percent).

The following table sets out TGI's ratings by Moody's and where on the "factor mapping" the ratings place TGI:

Category	Metric/Comment	Indicated Rating
Return on Equity	9%-14%	A
EBIT to Customer Base	>\$350/customer	Aaa
Regulatory Support and Relationship	"Very good, proactive support"	Aa
Ring Fencing	"Very good provisions"	Aa
EBIT/Interest	1 – 2x	Ba
Retained Cash Flow/Debt	5 – 10%	Ba
Debt to Book Capitalization	65 – 85%	Ba
Free Cash Flow/Funds from Operations	(15%) – (30%)	A

The report notes with respect to TGI that: "Notwithstanding TGI's relatively low risk business profile, its financial profile is considered weak at the A3, senior unsecured rating level. Accordingly, further sustained weakening of TGI's financial metrics, for instance ROE below 8 percent, EBIT/Interest below 2x, RCF [Retained Cash Flow]/Debt below 5 percent and/or Debt/Book Capitalization (excluding goodwill) above 65 percent, would likely lead to a downgrade of TGI's rating." The report concludes that TGI's model rating would be a Baa1.

In its May 2009 report affirming TGI's A3 rating, Moody's cautions:

"However, in the context of the current low interest rate environment and weaker economy, Moody's is becoming concerned that TGI's credit metrics could deteriorate to levels that, despite the relative supportiveness of TGI's regulatory environment, are not commensurate with the company's existing A3 senior unsecured rating and therefore could lead to a negative rating action...Moody's will be following the progress of TGI's cost of capital application and its pending application for 2010 rates to determine their impact on TGI's financial profile."  
(Exhibit B-3, BCUC 1.86.2)

Terasen states that a credit rating downgrade below the A rating category could lead to TGI being required to post letters of credit with its counterparties, which would incur a direct cost in the form of letter of credit fees. In addition, and of more concern, would be the potential restriction this could place on TGI's commodity hedging activities, which can extend out three years, and where given the volatility in gas prices, the mark to market exposure on a derivative can vary significantly. When TGI enters into financial hedges, it restricts its activities to A or higher rated counterparties, and, with a B rating, could face similar restrictions and be constrained in pursuing its hedging activity, to the potential detriment of its customers. (Exhibit B-1, p. 37)

The impact of a downgrade by Moody's is also considered by Ms. McShane who opines that a downgrade increases the cost of the new debt, but also affects outstanding debt. An increase in the cost of debt to a utility increases the required yield on the outstanding debt and reduces the value of that debt. Since existing holders are the most likely purchasers of future issues, a debt rating downgrade, with resulting negative impact on the value of their existing holdings, would likely make them less willing to purchase future issues.

(Exhibit B-1, Tab 3, p. 27)

JIESC submits that TGI's consistent "A" bond ratings are due to the regulatory regime and the constancy of TGI's earnings and do not appear to be in jeopardy. The JIESC submits that if the Commission does conclude that TGI's "A" rating is in jeopardy, it should "pick a low cost alternative to protect it, like the issuance of preferred shares rather than increase the equity ratio." JIESC also points out that while TGI may appear to have weak credit metrics in comparison to US utilities, it

has a higher bond rating than most US utilities and submits that the credit rating which looks at utilities' total risk profile is more important than credit metrics, which represent one item assessed in determining the bond rating. (JIESC Argument, pp. 29-30)

In Reply, Terasen submits that preferred shares are inefficient, and not the appropriate means of addressing credit rating metrics, since: i) Moody's views such preferred shares more as debt instruments, and therefore the issuance of preferred shares would not address concerns with credit rating metrics, and ii) the dividends on preferred shares are not tax deductible, on a debt equivalent basis, the debt component is an expensive form of debt. (Terasen Reply, para 83)

### 3.6 Interest Coverage Ratios

Terasen states that TGI currently has one of the weaker credit metrics of the sample Canadian utilities, and is lower than the group average. Terasen compares TGI's interest coverage ratio with those of its Canadian peers as follows:

Utility	2005	2006	2007	2008
EGDI	2.29	1.80	2.24	2.27
Gaz Metro	2.65	2.45	2.30	2.21
Union	2.09	1.91	2.24	2.28
TGI	1.94	2.00	1.95	1.96

(Source: Exhibit B-1, Table 7.4, p. 40)

Terasen states that TGI's trust indenture provides that TGI will not issue debentures or other debt instruments other than Purchase Money Mortgages ("PMM") maturing 18 months or more after date of issue unless consolidated available net earnings are at least two times the annual interest requirements on all additional obligations (including the additional debt to be issued).



Terasen states that TGI has outstanding PMMs totalling approximately \$275 million, which fall due in 2015/16 and that, while a determination has not been made, it is currently of the view that it may not be able to reissue the PMM's on maturity with the result that they will be refinanced with unsecured debentures. Since the PMM's are not subject to the issuance coverage test, while the unsecured debentures that refinance them would be, Terasen states that the refinancing of its PMM's on their maturity will lead to further constraints on the issuance coverage test.

Terasen provides Exhibit B-28, which discusses the coverage test and attaches a table which demonstrates that at 35 percent equity and an 8.43 percent ROE it would have difficulty in issuing \$100 million of unsecured debt in 2009. (Exhibit B-28)

### **Commission Determination**

Based on the Commission's assessment of TGI's long-term business risk in its 2006 ROE Decision, the fact that TGI has no preferred shares in its capital structure, and a comparison with the other major natural gas LDCs in Canada, the Commission Panel considers that the equity ratio of TGI, remains in the range of 35 percent to 38 percent before considering the impact of any change in TGI's long-term business risk that has occurred since 2005.

The Commission Panel agrees with the Intervenor's that all risks cited by Terasen existed in 2005 with the exception of the climate change related risks and those related to First Nations.

As for the existing risks, the Commission Panel does not see how TGI's ability to earn a return on or of its capital has been adversely affected since 2005. Although all Intervenor's identify the competitive position of natural gas compared with electricity as one risk which has diminished since 2005, the Commission Panel considers that natural gas' competitive edge over electricity is dependent on too many significant variables, such as the level of the carbon tax, the volatility of natural gas prices and the impact of government policy on BC Hydro's rates, to be considered permanent.

As for concerns about the risks posed by First Nations, the Commission Panel agrees with Terasen that the risks did not exist in 2005, to the extent they are currently perceived, and that they constitute an increase in risk over natural gas LDCs operating in other provinces. The Commission Panel does not consider that the risks presently cast doubt over TGI's ability to earn a return on or of its capital.

The Commission Panel agrees with Terasen that the introduction of climate change legislation by the provincial government has created a level of uncertainty that did not exist in 2005 and that the change in government policy will quite probably cause potential customers not to opt for natural gas and persuade potential retrofitters to opt for electricity. In addition, the Commission Panel considers that the Nyboer Report presents a scenario that did not exist in 2005 under which the three Terasen utilities might not earn a return of their capital. The scenario that now exists is described in a publication of a reputable consulting group which appears to have the attention of policymakers.

As for the evidence that US natural gas LDCs have thicker equity ratios than their Canadian counterparts, the Commission Panel notes that no reasons for the difference were entered into evidence. The Commission Panel concludes that the difference between US and Canadian natural gas LDCs' equity ratios is not of itself determinative.

The Commission Panel considers that TGI's business risk has increased since 2005. In the Commission Panel's opinion the additional risk suggests an equity ratio for TGI of 40 percent. **Accordingly, the Commission Panel determines that the appropriate equity ratio for TGI is 40 percent effective January 1, 2010.**

**As it did in its 2006 ROE Decision, the Commission Panel requires TGI to file within 30 days of this Decision a document setting out how and when it will implement this change to its capital structure in compliance with the ring-fencing conditions approved by the Commission in its Order G-49-07.**

#### **4.0 THE APPROPRIATE RETURN ON EQUITY FOR TGI**

The issue that is addressed in this Section is: Given TGI's capital structure, what is the appropriate ROE for TGI and what approaches to its determination should the Commission Panel give weight?

There are several approaches used to determine ROE, none of which is universally preferred. Therefore, in order to determine the appropriate ROE for TGI, the Commission Panel must first review the main approaches for determining an appropriate ROE and decide how much weight to accord the results from each.

The approaches are reviewed in Section 4.1, below. Once they have been reviewed and the Commission Panel has determined how much weight to give to each, it then reviews, in Section 4.2, the results from each of the approaches as calculated by the various experts, to determine the appropriate ROE for TGI.

#### **4.1 The Approaches used to Determine ROE**

Terasen identifies three approaches used to determine ROE:

- 1) Discounted cash flow ("DCF");
- 2) Equity risk premium ("ERP");and
- 3) Comparable earnings ("CE").

Ms. Mc Shane states that: "Each of the tests is based on different premises and brings a different perspective to the fair return on equity. None of the individual tests is, on its own, a sufficient means of estimating the fair return; each of the tests has its own strengths and weaknesses. Individually, each of the tests can be characterized as a relatively inexact instrument; no single test can pinpoint the fair return." (Exhibit B-1, Tab 3, p. 42)

#### 4.1.1 Discounted cash flow approach

Terasen submits that the discounted cash flow approach for the determination of the return on equity of regulated utilities is an approach that has been widely accepted, and widely used for many years, even though in recent years the use of the DCF approach by Canadian regulatory agencies has been limited. Terasen cites an article by Dr. Makhholm from *Public Utilities Fortnightly* dated May 15, 2003 entitled, "In Defence of the Gold Standard," where Dr. Makhholm stated that, "the DCF method has endured [in the US] for most of the past two decades for three basic reasons:

- It rests on a solid, straightforward theoretical base;
- It capitalizes on the depth of U.S. capital markets-meaning analysis can use "proxy groups" of publicly traded companies in the same industry to manage the variability of individual company DCF calculations; and
- It makes use of company growth projections from disinterested industry analysts-a key attribute for a method to gauge the opportunity cost of capital in the mind of investors." (Exhibit B-20)

Dr. Booth states that, "...the DCF estimate is particularly appropriate for use in determining the fair rate of return for a regulated utility." (Exhibit C11-5, Appendix C, p. 4)

JIESC submits that, "By comparison [with the Capital Asset Pricing Model ("CAPM")] DCF and comparable earnings are black boxes with numerous judgements and are much less constrained by the facts." (JIESC Argument, p. 2)

JIESC points out that the DCF approach has not been accepted by a Canadian regulator in the last 10 years. In addition it points out that Ms. McShane's discounted cash flow test uses a sample of US gas and electricity utilities and relies on *Value Line* and Thomson Reuters I/B/E/S ("I/B/E/S") forecasts for estimating earnings growth. The JIESC submits that "this [reliance] still suffers from the strong possibility of upward bias and should be subject to considerable caution before being used." (JIESC Argument, p. 39)

Terasen replies that there is no suggestion that *Value Line* forecasts suffer from upward bias, and that Dr. Vander Weide testified that studies that have purported to show upward bias have statistical errors.

Terasen takes issue with the characterization of the DCF and CE tests by JIESC as “black boxes” and submits that the criteria used by Ms. McShane in selecting companies of comparable risk are objective and explicit, and focus on characteristics to ensure comparability. The way the returns are measured in both the DCF and comparable earnings approaches are transparent, and the tests, in contrast to the CAPM, are compatible with meeting the comparable returns requirement. (Terasen Reply, para 104)

#### 4.1.2 Equity Risk Premium Approach

Terasen submits that the equity risk premium test is derived from the concept that there is a direct relationship between the level of risk assumed and the return required. Since an investor in common equity takes greater risk than an investor in bonds the equity investor requires a premium above bond yields in compensation for the greater risk.

Terasen states that the Capital Asset Pricing Model (“CAPM”) is one of the equity risk premium models, and is the most common, but not the only one. CAPM is based on a portfolio investment theory and relies on the premise that an investor requires compensation for non-diversifiable risks only. Non-diversifiable risks are those risks that are related to overall market factors (e.g., interest rate changes, economic growth), while company-specific risks, according to CAPM, can be diversified away by investing in a portfolio of securities; therefore, the investor requires no compensation to bear those risks. (Terasen Argument, para 296)

Under the CAPM approach, ROE is calculated using the following formula:

$$\text{ROE} = \text{Risk-Free Rate} + \{\text{Relative Risk Adjustment} \times \text{Market Risk Premium}\}$$

In CAPM, risk is measured using the relative risk adjustment, known as beta. Theoretically, the beta is a forward looking estimate of the contribution of a particular stock to the overall risk of a portfolio. In practice, the beta is a calculation of the historical correlation between the overall equity market returns, as proxied in Canada by the returns on S&P/TSX Composite Index, and the returns on individual stocks or portfolios of stocks. (Exhibit B-1, Tab 3, p. 45)

Ms. McShane states that the "raw" betas for publicly-traded Canadian regulated gas and electric companies, the TSE Gas/Electric Index, and the S&P/TSX Utilities Sector declined significantly in the periods between 1993 and 1998 and between 1999 and 2005, and that following an increase in 2007 to 0.50, the utility betas again declined in 2008 to approximately 0.25. These "raw" betas of approximately 0.25 for Canadian utilities provide virtually no explanatory power in terms of capturing utility investors' return expectations. While that is clear, the more difficult task is to determine if and how the "raw" beta values can be translated into a relative risk adjustment that does provide an indication of the return requirements of utility investors. In order to arrive at a reasonable relative risk adjustment, the normative ("what should happen") CAPM needs to be integrated with what has been empirically observed ("what does or has happened").

Ms. McShane states that the practice of adjusting betas toward the equity market beta of 1.0, rather than the calculated "raw" betas, takes account of the observed tendency of stocks with low betas to achieve higher returns than predicted by the simple CAPM and vice-versa. Adjusted betas are a standard means of estimating betas, and are widely disseminated to investors by investment research firms, including Bloomberg, *Value Line* and Merrill Lynch. All three of these firms use a similar methodology to adjust "raw" betas toward the equity market beta of 1.0 and give approximately 2/3 weight to the calculated "raw" beta and 1/3 weight to the equity market beta of 1.0. (Exhibit B-1, Tab 3, p. 56)

Terasen contends that if beta is to be considered a reasonable measure of risk, then the use of the traditional estimate of beta in the CAPM should produce a reasonable estimate of a utility's cost of equity. It calculates that applying conventionally estimated betas for Canadian utilities using the last five years of data in the range 0.25 to 0.30 to a 5-6 percent risk premium on the Canadian

market index yields a utility risk premium of 1.5 percent to 1.8 percent. Adding this utility risk premium to the May 2009 forecast yield on long Canada bonds of 3.69 percent produces a cost of equity in the range 5.19 percent to 5.49 percent. Since this result is “absurdly low” in comparison to current yields on utility bonds, Terasen concludes either that: (1) betas as traditionally measured do not correctly measure the risk of utility stocks; or (2) the CAPM does not apply to the Canadian marketplace. (Exhibit B-3, BCUC 14.5.1)

Ms. McShane calculates the “raw” beta for PNG Ltd. (“PNG”) to be 0.26 for 2008 (Exhibit B-1, Tab 3, Schedule 11). Dr. Booth testified that PNG was “the riskiest Canadian utility” (T5:603).

JIESC addresses adjustment to beta, noting that Dr. Booth concluded that it is unreasonable to just use the statistical estimate without recognising the underlying events that caused it, and then to make the appropriate adjustments. JIESC submits that Ms. McShane confirmed that no regulatory agency in Canada has accepted adjusted betas and that in the TQM Decision the NEB specifically rejected adjusted betas. (JIESC Argument, p. 37)

Terasen submits that an ROE based on CAPM fails to meet the Commission’s obligation to provide Terasen with the opportunity to earn a fair return on its investment in utility assets in that the CAPM methodology does not, and is not intended to, relate to the business risk associated with an investment in utility assets. Rather, it relates to how the investment in one asset (usually a security) affects the overall riskiness of a basket (or portfolio) of investments. CAPM assumes that an investor has a diversified portfolio of investments and that risk is measured only by reference to the impact that a specific investment has on the overall diversified portfolio; CAPM is not attempting to measure the business risk of a utility or other company. (Terasen Argument, para 146)

The May 2003 article from *Public Utilities Fortnightly* cited above states that:

“CAPM, by comparison, is abstruse as a piece of theory. Further, because most of the components of the calculation are common to all companies (i.e., the risk-free rate and the market risk premium), the CAPM cannot make use of the law of large

numbers. That is to say, the problems associated with which risk-free rate to pick, or which market risk premium to adopt, hinder the result, no matter how many companies the calculation are performed upon. Finally, the CAPM has no tie to disinterested company analysts that not only reflect, but also shape, the opinions of investors. It is thus no surprise that the CAPM is vastly less popular among US regulatory commissions as a rate of return method.” (Exhibit B-20)

JIESC points to page 35 of Dr. Booth’s evidence where he states that CAPM is, “overwhelmingly the most important model used by a company in estimating their cost of equity capital,” and cites a 2001 survey of 392 US chief financial officers (“CFOs”) in the Journal of Financial Economics. Dr. Booth points out that 70 percent of the US CFOs use CAPM and a further 30 percent use a multi-beta approach similar to his two factor model to measure their own cost of equity. (JIESC Argument, pp. 33, 34)

#### 4.1.3 Comparable Earnings Approach

Terasen states that the comparable earnings approach calculates the achieved earnings returns of a sample of low-risk competitive unregulated Canadian firms over a business cycle.

The comparable earnings test is the only test that explicitly recognizes that, in the North American regulatory framework, the return is applied to an original cost (book value) rate base. The concept that regulation is a surrogate for competition means that the combination of an original cost rate base and a fair return should result in a value to investors commensurate with that of competitive ventures of similar risk.

JIESC cites six basic reasons why Dr. Booth does not use a comparable earned rate of return or comparable earnings approach:

- it is an average not a marginal rate of return;
- it is an accounting rate of return not an economic rate of return;
- it may include the impact of market power;
- it is based on non-inflation adjusted numbers;



- it is earned on historic accounting book equity that does not reflect what can be earned on investments today; and
- it varies with the firms selected in the “comparable earnings” sample.

In addition, the JIESC submits that no regulatory board or commission in Canada has given support to the comparable earnings approach in recent years and that the Alberta Energy and Utilities Board (“AEUB”) very explicitly rejected its use in its 2004 Generic Cost of Capital Decision (2004-052). (JIESC Argument, pp. 40-41)

At the Oral Phase of Argument, JIESC noted that the AUC had confirmed the AEUB’s 2004 finding about CE at paragraph 281 of AUC Decision 2009-216. (T6:774)

Terasen points out that in his evidence, Dr. Booth, as he had in 2005, agreed in that some of his problems with the CE test also appear in the process of setting rates under regulation, notably that both use an accounting rate of return; it is an average, not a marginal, return; it is based on historic book equity; and based on non inflation-adjusted numbers. (Terasen Argument, para 330)

Terasen submits that the *Act* requires the Commission, “to provide a fair return to the utility and what the utility invests in its infrastructure. It’s a fair return to the utility. The *Act* doesn’t say it has to be a fair return to the investors in the utility” and notes that the Alberta board rejected CE, “because they said it didn’t deal with returns available to investors,” which is not the case in BC. (T6:807)

### **Commission Determination**

The Commission Panel has considered the three approaches to determining ROE for a regulated utility and agrees with Terasen that it should take all three into account when establishing an ROE. The Commission Panel agrees that the DCF and ERP are the most common approaches used by regulatory agencies in the US and that CAPM has been widely used in Canada in the period since 1994. The Commission Panel has seen no evidence that suggests: i) it should ignore the fact that

the Commission gave the DCF approach weight in the 2006 ROE Decision, or ii) that would persuade it to depart from the Commission's finding in that decision that the CE methodology had not outlived its usefulness when it commented: "However, the Commission Panel is not convinced that the CE methodology has outlived its usefulness, and believes that it may yet play a role in future ROE hearings."

As for the two most commonly used approaches, the Commission Panel finds that the DCF approach has the more appeal in that it is based on a sound theoretical base, it is forward looking and can be utility specific. The Commission Panel has considered the submission of the JIESC concerning "upward bias" of analysts' estimates and considers that no allegations of upward bias have been levelled against utility analysts and that *Value Line* estimates will be free from any suggestion of upward bias. Accordingly the Commission Panel will not give any weight to suggestions of analyst bias.

The Commission Panel notes that CAPM is based on a theory that can neither be proved nor disproved, relies on a market risk premium which looks back over nine decades and depends on a relative risk factor or beta. The fact that the calculated beta for PNG (considered by Dr. Booth to be the most risky utility in Canada) was 0.26 in 2008 causes the Commission Panel to consider that betas conventionally calculated with reference to the S&P/TSX are distorted and require adjustment.

The Commission Panel will give weight to the CAPM approach, but considers that the relative risk factor should be adjusted in a manner consistent with the practice generally followed by analysts so that it yields a result that accords with common sense and is not patently absurd.

**Accordingly the Commission Panel determines that in determining a suitable ROE for TGI, it will give most weight to the DCF approach, some lesser weight to the ERP and CAPM approaches and a very small amount of weight to the CE approach.**

## 4.2 The Evidence Concerning ROE

This part of Section 4 examines the approaches used by the witnesses to develop their recommended ROEs and the results of the tests they applied.

### 4.2.1 Discounted Cash Flow

The DCF approach was used by both Ms. McShane and Dr. Vander Weide.

Ms. McShane states that there are multiple versions of the DCF model available to estimate the investor's required return. An analyst can employ a constant growth model or a multiple period model to estimate the cost of equity. The constant growth model rests on the assumption that investors expect cash flows to grow at a constant rate throughout the life of the stock. Similarly, a multiple period model rests on the assumption that growth rates will change over the life of the stock.

Ms. McShane states that to estimate the DCF cost of equity she used both models and applied the discounted cash flow test to a sample of low risk US "pure-play" electric and gas distributors that were intended to serve as a proxy for TGI. In applying the DCF test, she states she relied solely on published forecast growth rates that were readily available to investors. In applying the constant growth model, she relied primarily on the consensus (mean) of analysts' earnings growth rate forecasts as the proxy for investors' long-term growth expectations.

To estimate the ROE, Ms. McShane selected a sample of low risk US electric and natural gas distribution utilities, which met the following criteria: were classified by *Value Line* as a gas distributor or an electric utility; had a *Value Line* Safety Rank of "2" or better; had a Standard & Poor's business risk profile of "Excellent" and a debt rating of A- or higher; was not presently being acquired; and had a consistent history of analysts' forecasts.

Thirteen utilities met these criteria of which four (Dominion Resources, Duke Energy, FPL, and Southern Co.) were electric utilities with significant regulated generating assets. (Exhibit B-1, Tab 3, pp. 64-66 and Appendix C)

Ms. McShane agreed that, with the possible exception of Southern Co., such utilities would have to raise considerable amounts of capital replacing their generating assets. (T4:570)

Dr. Vander Weide applied the DCF model to the *Value Line* electric and natural gas utilities which he selected from all the utilities in *Value Line's* electric and natural gas industry groups that had paid dividends during every quarter and did not decrease dividends during any quarter of the past two years, had at least three analysts included in the I/B/E/S mean growth forecast, were not in the process of being acquired, had a *Value Line* Safety Rank of 1, 2, or 3, and had investment grade S&P bond ratings.

Dr. Vander Weide's selection criteria captured ten natural gas LDCs (a number of which were also featured in Moody's report attached to Exhibit B-6, BCUC 111.1) and 24 *Value Line* electric utilities. The latter included some of the largest generating utilities in the US as well as a number of combination gas and electric utilities. (Exhibit B-1, Tab 4, pp. 33, 60, 61)

Ms. McShane states that her constant growth models indicate a cost of equity of approximately 11 percent. Her two-stage model is based on the premise that investors expect the growth rate for the utilities to be equal to the analysts' forecasts (which are five year projections) for the first five years, but, in the longer-term (from year six onward) to migrate to the expected nominal long-run growth rate of 5 percent per annum in the economy, and indicates a cost of equity of approximately 10.4 percent (Exhibit B-1, Tab 3, p. 66 and Schedule 18). Ms. McShane updated her constant growth model in Exhibit B-3, BCUC 65.3 and found the result of 11 percent to be "virtually identical."

Dr. Vander Weide concludes that the cost of equity using a constant growth approach is 12.4 percent for the 24 *Value Line* electric utilities in his study and 11.5 percent for the ten *Value Line* natural gas utilities. In response to an Information Request ("IR"), he updated these percentages as of July 2009 to 11.5 percent and 11.9 percent respectively. (Exhibit B-6, BCUC 107.1)

Dr. Vander Weide testified that he did not seek to eliminate utilities which were not "pure-play" natural gas distribution utilities from his study, and that had he done so he might have eliminated Equitable Resources and Questar Corp from his *Value Line* LDCs on the grounds that both companies have significant upstream operations. This would have reduced the cost of equity for his remaining eight "pure-play" *Value Line* LDCs to "something like" 10.5 percent. (T3:388)

JIESC submits that since dividend yields for the period of January 2009 to March 2009 are "biased upwards because stock market prices were at all time lows," the utilization of these yields together with long term I/B/E/S growth forecasts by Ms. McShane will substantially overstate investors' required returns.

Terasen replies that in the response to IR in Exhibit B-3, BCUC 65.3.1, Ms. McShane had updated her results and concluded that the estimated "bare-bones" ROE derived from the constant growth DCF model was virtually identical to the 11.0 percent she had estimated at the time her evidence was filed. (Terasen Reply, para 113)

Terasen discusses the regulatory treatment of US LDCs and of TGI in its Argument. It cites the CEA report for the CGA which states in its Executive Summary: "There are of course differences in regulatory treatment from province to province and from state to state. But we find generally that there is no persistent difference in regulatory legislation or rule making between Canada and the US."

Terasen submits that the rate setting methodologies of the *Value Line* US LDCs and TGI are quite similar. Both the *Value Line* US LDCs and TGI are subject to rate of return regulations which are designed to provide the companies an opportunity to recover prudently incurred costs and earn a

fair rate of return on their investments. In addition, the US LDCs and TGI both benefit from the availability of cost recovery mechanisms that are designed to reduce regulatory lag. (Terasen Argument, para 346-347)

Terasen states that most US gas utilities have automatic rate adjustment mechanisms for purchased gas costs and weather normalization, and that many US gas utilities have decoupling mechanisms that seek to stabilize revenues by “decoupling” gas rates from gas volumes. Decoupling occurs either through a rate design that allows recovery of fixed costs from fixed monthly charges, or through a revenue normalization adjustment mechanism that increases rates or refunds rates to customers for the difference between actual revenues and authorized revenues. (Exhibit B-3, BCUC 74.3)

Terasen identifies another difference in regulatory treatment in that Canadian regulatory agencies do not allow natural gas LDCs to recover deferred income taxes in the rates they charge their customers while US state regulators in the most part do (Exhibit B-11, Panel 1.1). Terasen testified that, at December 2008, TGI had \$261 million of income taxes it had not collected from its customers (T3:286).

Dr. Booth states that in 1978 many US utilities faced, “significant regulatory lag that exposed utilities to inflation risk...Subsequently, two factors have largely removed this risk: the decline in inflation and the adoption of forward test years.” (Exhibit C11-5, Appendix C, p. 9)

Dr. Vander Weide testified that it was no longer a “rule of thumb” that US regulatory bodies used historic test years to set rates, that there are now many that have forward-looking test years, and that those without forward-looking test periods are able to adjust their historical test periods for known and measurable changes such as commissioning a new plant or a negotiated pay increase settlement. (T3: 391)

Terasen filed the actual earned ROEs of the *Value Line* LDCs which demonstrate that of the eight “pure-play” LDCs (that is ignoring Equitable and Questar), three consistently earned less than their allowed returns and the remaining five earned at or around their allowed ROEs. By excluding Equitable and Questar, the average ROE earned by the 8 remaining *Value Line* LDCs ranged from 10.1 percent to 11.3 percent in the period 2004-2008. (Exhibit B-28)

In its Argument, JIESC quotes Dr. Booth’s evidence that:

“The regulation of US utilities suffers from the same philosophical and cultural factors in the US and there is no reason to believe that the results are any different. Without examining US regulatory practise in detail, since much of it is the result of individual state regulation, Canadian utilities seem to be regulated on a much more pro-active basis with very little regulatory lag. In contrast, it appears that US utilities sometimes go several years between rate hearings. Canadian utilities also seem to make more use of deferral accounts. As a result, there is little to be gained from looking at US utilities without making significant risk adjustments which is rarely done. However, since the underlying operations are similar and there is increasing uncontested evidence presented on behalf of the utilities, I have started to examine them”. (Exhibit C11-5, Appendix G, p. 2 cited at JIESC Argument, p. 46)

### **Commission Determination**

The Commission Panel agrees that Canadian data do not lend themselves to the DCF approach due to the very limited universe of stand-alone utilities in Canada and the lack of sufficient analysts’ forecasts. However, the Commission Panel has also found that US data can act as a proxy for Canadian data where adequate Canadian data do not exist. Accordingly, the Commission Panel determines that the four DCF tests before it are relevant.

The Commission Panel places no weight to Dr. Vander Weide’s US *Value Line* electric utilities test, since it included a large number of very large US vertically integrated utilities with significant amounts of generation assets. Not only did the inclusion of these very large US vertically integrated utilities tend to skew the results upwards, but they were not in the Commission Panel’s view suitable comparators for a “pure-play” natural gas LDC like TGI.

The Commission Panel gives the most weight to Dr. Vander Weide's *Value Line* natural gas LDC DCF test and to both Ms. McShane's DCF tests. The Commission Panel eliminates the two *Value Line* gas utilities which had significant non-utility operations (Equitable and Questar) from Dr. Vander Weide's test and the four large vertically integrated electric utilities from Ms. McShane's two-stage DCF test. The Commission Panel considers a return in the range of 10.0 percent to 10.5 percent to be a starting point for determining TGI's ROE using the DCF approach.

The Commission Panel agrees with Dr Booth that "significant risk adjustments" to US utility data are required in this instance to recognize the fact that TGI possesses a full array of deferral mechanisms which give it more certainty that it will, in the short-term, earn its allowed return than the *Value Line* US natural gas LDCs enjoy. The Commission Panel notes Dr. Booth's suggestion that the risk premium required by US utilities is between 90 and 100 basis points more than utilities in Canada require may set an upper limit on the necessary adjustment. Accordingly, the Commission Panel will reduce its DCF estimate by between 50 and 100 basis points to a range of 9.0 percent to 10.0 percent, before any allowance for financing flexibility.

The Commission Panel's determination on the allowance for financing flexibility appears later in this Section.

#### 4.2.3 Equity Risk Premium

Ms. McShane performs three ERP tests: i) a risk-adjusted equity market risk premium test; ii) a DCF-based equity risk premium test; and iii) a historic utility equity risk premium test. (Exhibit B-1, Tab 3, pp. 43-63)

Dr. Vander Weide performs two ERP tests, an *ex post* risk premium and an *ex ante* risk premium test. His *ex post* risk premium test measures the required risk premium on an equity investment in TGI from historical data on the returns experienced by investors in Canadian utility stocks compared to investors in long-term Canada bonds. His *ex ante* risk premium test is based on



studies of the expected return on comparable groups of utilities in each month of the study period compared to the interest rate on long-term government bonds. (Exhibit B-1, Tab 4, pp. 30 and 32)

Dr. Booth relies on what he terms a 'classic' CAPM risk premium model and a two-factor model. The 'classic' CAPM estimate is based on an historic average market risk premium "adjusted" for the changing risk profile of the long Canada bond, while his two-factor model takes into account the interest rate sensitivity of utility stocks. As a check to his results he uses a DCF based utility risk premium test. (Exhibit C11-5, p. 56)

The table below summarizes the results of the tests performed:

Witness	Test	Indicated ROE	FFA	Total ROE
Ms. McShane	Risk-Adjusted Equity Market Risk Premium Test	8.75%	0.50%	9.25%
	DCF-Based Equity Risk Premium Test	10.00% <sup>1</sup>	0.50%	10.50%
	Historic Utility Equity Risk Premium Test	10.50%	0.50%	11.00%
Dr. Vander Weide	<i>Ex post</i> Risk Premium	9.20%	0.50%	9.70%
	<i>Ex ante</i> Risk Premium	11.40%	N/A	11.40%
Dr. Booth	"Classic" CAPM	7.00%	0.75%	7.75%
	Two-stage CAPM	7.00%	0.75%	7.75%

(<sup>1</sup>) Revised by Ms. McShane to 9.5 percent. (T4:452)

(Source: Exhibits B-1, Tab 3, p. 63; B-1, Tab 4, p. 35; and C11-5, p. 56)

A comparison of Ms. McShane's risk-adjusted equity market risk premium test and Dr. Booth's "classic" CAPM tests show the following assumptions and results:

	<b>Ms. McShane</b>	<b>Dr. Booth</b>
Long-term Canada bond yield	4.25%	4.50%
Equity risk premium	6.75%	5.00%
Relative risk adjustment	0.65-0.70	0.50
Indicated ROE	8.75%	7.00%
Allowance for financial flexibility	0.50%	0.75%
<b>Total</b>	<b>9.25%</b>	<b>7.75%</b>

Prior to the Oral Phase of Argument, the Commission circulated a letter dated November 18, 2009. The letter had, as an attachment, a document similar to that which Commission staff has prepared each November in accordance with the Commission's Order G-25-94, as amended by Orders G-80-99, G-109-01, and G-14-06 for the purpose of determining the allowed return on common equity for a benchmark low-risk utility for the ensuing year. The document shows that the forecast yield on long-term Canada bonds for 2010 is 4.302 percent. (Exhibit A-12)

#### 4.2.3.1 Ms. McShane's Results

##### (a) Risk-Adjusted Equity Market Risk Premium Test

For her risk-adjusted equity market risk premium test, Ms. Mc Shane uses a long-term Canada bond yield of 4.25 percent, an equity risk premium of 6.75 percent and a relative risk adjustment of 0.65-0.70 (the relative risk adjustment or beta was described in Section 4.1.2). To derive her equity risk premium of 6.75 percent she used an expected value of the future equity market return in a range of 11.0 percent-12.0 percent, based on both the Canadian and US equity market returns, from which she deducted both the near-term (2010) and the longer-term forecasts for long-term Canada bond yields of 4.25 percent and 5.25 percent respectively. (Exhibit B-1, Tab 3, p. 51)

Terasen submits that because equity risk premium tests are forward-looking, historic risk premium data need to be evaluated in light of prevailing economic and capital market conditions. If available, direct estimates of the forward-looking risk premium should supplement estimates of the risk premium made using historic data. (Terasen Argument, para 202)

Ms. McShane states that the “raw” calculated betas for the five-year period ending March 2009 of her sample of fifteen US utilities averaged 0.41, while the average reported *Value Line* beta for the sample (and the beta more likely to be relied upon by analysts and investors) was 0.66. (Exhibit B-1, Tab 3, Schedule 15)

Based on her analysis of standard deviations of market returns and betas, Ms. McShane adopts a relative risk adjustment in the range of 0.65-0.70. (Exhibit B-1, Tab 3, p. 57)

JIESC cites Dr. Booth’s evidence in response to Ms. McShane’s evidence: “I don’t believe you can subtract the current LTC [long-term Canada bond] yield from a long run average equity return since it mismatches the underlying inflationary environments...so her procedures may over estimate the market risk premium by at least 1.0%.” (JIESC Argument, p. 36)

JIESC describes Ms. McShane’s adjustment to beta as “unreasonable” and submits that no regulatory agency in Canada has accepted adjusted betas and that in the TQM Decision, the NEB specifically rejected adjusted betas. (JIESC Argument, p. 37)

Terasen replies that Ms. McShane’s relative risk adjustment of 0.65-0.70 is not based on the premise that the utility risk will rise to that of an average risk firm, but rather is based on the following:

- relative standard deviations of utility returns compared to the returns of other sectors of the market composite;
- the empirical evidence generally that the actual returns of low beta stocks have been higher than the theoretical CAPM would predict;

- the empirical evidence specific to Canadian utilities that the actual returns have historically been higher than the “raw” regression betas would predict; and
- the published betas, which incorporate the adjustment toward the market mean of 1.0, and which investors and analysts are likely to rely on when forming their return expectations. (Terasen Reply, para 121)

(b) DCF-Based Equity Risk Premium Test

Ms. McShane performed her DCF-based equity risk premium test by constructing monthly cost of equity estimates for a sample of low risk US gas and electric utilities as a proxy for TGI for the period 1991-March 2009 using the DCF model. Using a single variable and a two variable approach Ms. McShane concludes that the indicated cost for utility equity before any allowance for financing flexibility lay in the 9.7 percent to 10.25 percent range. (Exhibit B-1, Tab 3, pp. 59-61)

In her written evidence, Ms. McShane noted that as of the end of March 2009 the spread between A rated Canadian utility bonds and 30-year Canada bonds was approximately 345 basis points. When preparing her evidence Ms. McShane forecast that spread to decrease to approximately 225 to 250 basis points. In her direct examination at page 452 of the transcript Ms. McShane noted that the spreads had declined more than she had anticipated to a level of approximately 165 to 175 basis points. Using the spread of 170 basis points, she testified that the indicated utility cost of equity before any adjustment for financing flexibility was 9.5 percent (T4:452).

(c) Historic Utility Equity Risk Premium Test

Ms. McShane’s historic utility premium test involves comparing the returns of utilities in Canada for the period 1956-2008 and electric utilities and natural gas utilities in the US for the period 1947-2008, on the grounds that, “Reliance on achieved equity risk premiums for utilities as an indicator of what investors expect for the future is based on the proposition that over the longer term, investors’ expectations and experience converge. The more stable an industry, the more likely it is that this convergence will occur.” An analysis of the underlying data indicates there has been no upward or downward trend in the utility equity returns and that the utility returns in both the US

and Canada have, “clustered in the range of 11.0-12.0%, with a mid-point of approximately 11.5%.”

Ms. McShane adopts a long-run forecast of 5.25 percent for long-term Canada bond yields, and deducts that long-run forecast from the mid-point of utility returns (11.5 percent) to derive a utility risk premium of 6.25 percent. To that utility risk premium she adds the 4.25 percent long Canada forecast for 2010 to derive an ROE of 10.5 percent for TGI for 2010. (Exhibit B-1, Tab 3, pp. 62-63)

JIESC submits that Ms. McShane’s return recommendation is “excessive and unreasonable.” (JIESC Argument, p. 3)

#### 4.2.3.2 Dr. Vander Weide’s Results

##### (a) Ex post Risk Premium

Dr. Vander Weide measures the return experienced by investors in Canadian utility stocks from historical data on returns earned by investors in: (1) the S&P/TSX utilities stock index for the period 1956 -2008; and (2) a basket of Canadian utility stocks created by the BMO Capital Markets (“BMO CM”) for the period 1963-2008, which suggests that the former had an equity risk premium of 4.3 percent and the latter 6.6 percent, which Dr. Vander Weide averages and adds the current long bond rate of 3.69 percent to derive an *ex post* risk premium ROE calculation of 9.7 percent.

Dr. Vander Weide states that the BMO CM basket contains Canadian companies that receive a higher percentage of revenues from traditional utility operations than the companies currently in the S&P/TSX utilities stock index, and includes Enbridge Inc. and TransCanada Corporation.

(Exhibit B-1, Tab 4, pp. 31-32)

##### (b) Ex ante Risk Premium

Dr. Vander Weide’s *ex ante* risk premium test is based on studies of the expected return on comparable groups of utilities in each month of his study period (September 1999 to February

2009) compared to the interest rate on long-term government bonds. The electric utility group yields an *ex ante* risk premium estimate of 8.0 percent, and the natural gas comparable group an *ex ante* risk premium estimate of 7.5 percent. To these percentages he adds the current long-Canada bond yield of 3.69 percent for an average indicated ROE of 11.4 percent. (Exhibit B-1, Tab 4, pp. 32-33)

JIESC submits that the methodology used by Dr. Vander Weide was selective in the period studied and used bond returns rather than bond yields in a period of falling interest rates and thus over estimates utility returns by roughly 3.4 percent. (JIESC Argument, p. 44)

#### 4.2.3.3 Dr. Booth's Results

##### (a) "Classic" CAPM

Dr. Booth estimates the market risk premium to be 5.0 percent and uses a beta of 0.50 to develop a utility risk premium of 2.50 percent, to add to his long Canada yield forecast of 4.5 percent to arrive at a required rate of return of 7.0 percent. Adding in 0.50 percent for issue cost and 0.25 percent as a margin for error, he recommends a 7.75 percent fair ROE.

In his written evidence, Dr. Booth states that at the height of the financial crisis, Professor Fernandez surveyed finance professors around the world to find out what they used for the market risk premium. Dr. Booth presented the results of this survey which show that the median in the US is 6.0 percent and in Canada is 5.1 percent. Furthermore, Dr. Booth concluded that "the survey of Fernandez indicated that the 5.8 percent used by the BCUC is within the range of common values used by Canadian Professors of Finance of 5.0% and 6.0 %." (Exhibit C11-5, pp. 50-2)

Terasen submits that the Commission should put no weight on the results of the classic CAPM model of Dr. Booth. (Terasen Argument, para 299)

(b) Two Factor Model CAPM

Dr. Booth estimated a two factor model for utilities where their returns were driven by the common market factor, the TSX Composite return, as well as the return on the long-term Canada bond.

Given the measurement error involved in any statistical estimation and the sensitivity of the estimates to economic conditions, Dr. Booth regards the two models “as being the same.” Terasen submits that Dr. Booth’s application of the two-factor model understates the utility equity return requirement, because it uses a market risk premium which is even lower than that used by Dr. Booth in his classic CAPM approach (5.0 percent vs. 5.5 percent), and ignores other factors which have generated utility returns. This understates the actual utility market returns by close to 20 percent.

Terasen submits that the Commission should put no weight on the results of Dr. Booth’s two-factor model. (Terasen Argument, para 301-305)

(c) DCF Based Utility Risk Premium

As a check for his CAPM results, Dr. Booth uses data for the US electric and gas utilities followed by Standard and Poors to estimate a DCF required rate of return from which he subtracts the ten-year US government bond yield to estimate the utility risk premium for these US utilities at 2.21 percent to 2.68 percent, which he increases to 2.96 percent. He states that if the risk premiums are valid for Canada, they would imply a fair return of 7.50 percent (long Canada yield forecast of 4.50 percent plus the 2.96 percent risk premium) to which the 0.50 percent flotation cost would be added. Although this is slightly higher than his direct estimates from the CAPM and two factor models, he states that it “needs adjusting for the yield gap between ten and 30 year debt yields but indicates that the estimates are in the right ball-park.” (Exhibit C11-5, p. 77)

Terasen points out that Dr. Booth's calculations show: i) negative growth expectations in some instances, and ii) negative calculated utility risk premiums in a significant number of instances. Terasen submits that Dr. Booth's growth rate and resulting utility risk premiums do not reflect investors' expectations. Terasen further submits that the results of Dr. Booth's DCF check, and the utility risk premiums that he estimates using the DCF approach, should be rejected by the Commission. (Terasen Argument, para 311)

### **Commission Determination**

For the ERP approach, the Commission Panel has considered the four "non-CAPM" tests applied by Ms. McShane and Dr. Vander Weide. The Commission Panel considers that both Ms. McShane's DCF-based equity risk premium test and Dr. Vander Weide's *ex ante* risk premium test cover too short a period to be determinative. In addition Ms. McShane computes the risk premium by deducting the current, rather than the experienced, long-term Canada bond forecast from the derived returns. In the Commission Panel's view these two tests can at best be considered checks for the witnesses' DCF tests and the Commission Panel accords them no weight.

The Commission Panel notes that Dr. Vander Weide's *ex post* risk premium test gave 50 percent weight to a BMO CM basket of companies which, in the Commission Panel's view, covered too short a period, contained too few utilities, and included energy holding companies with significant non-regulated operations. Accordingly, the Commission Panel places no weight on this basket.

The Commission Panel considers that the results of Ms. McShane's historic equity risk premium test and Dr. Vander Weide's *ex post* risk premium test yield comparable results on historic Canadian utility data. The Commission Panel finds the Canadian data adequate and, for the reasons set out in its Determination in Section 2 above, gives weight to the Canadian data and no weight to the results of US utility data contained in Ms. McShane's historic equity risk premium test. The Canadian utility data can be summarized as follows:



	<b>Utility Equity Return (%)</b>	<b>Bond Return (%)</b>	<b>Utility Risk Premium (%)</b>
Ms. McShane	12.00	7.80	4.20
Dr. Vander Weide	11.84	7.54	4.30
Average	11.92	7.67	4.25

The Commission Panel considers that the Canadian utility premium of 4.25 percent should be adjusted to reflect the fact that it was calculated over a period when long-term Canada bonds averaged 7.67 percent and that there is not a one-for-one relationship between the increase or decrease in long-term Canada bond yields and the utility equity risk premium. The Commission Panel accepts the evidence of Dr. Vander Weide in this proceeding described in Section 5.0 below that this relationship may range between 0.50 and 0.75 and, using the 2010 forecast long-term Canada bond yield of 4.30 percent in Exhibit A-12, establishes a range of 9.25 percent to 10.25 percent for the ERP approach, before an allowance for financing flexibility.

For the CAPM approach, the Commission Panel has considered Ms. McShane's risk-adjusted equity market risk premium test and Dr. Booth's "classic" CAPM test. The Commission Panel notes that Dr. Booth's two-factor model CAPM test is essentially the same as his "classic" CAPM test and accords it no extra weight. As Dr. Booth's DCF based utility risk premium test was used by him as a check the Commission Panel finds that it need not accord it any additional weight.

The Commission Panel establishes a CAPM estimate by using the Consensus estimate of 4.30 percent for the risk free rate, establishing an equity market premium in the range of the consensus estimate of Canadian professors of finance of 5 percent to 6 percent, and using an adjusted beta in the range of 0.60 to 0.66. This produces a "bare-bones" CAPM estimate in the range of 7.30 percent to 8.30 percent before an allowance for financing flexibility.

#### 4.2.4 Comparable Earnings

Ms. McShane states that her selection of Canadian unregulated companies was limited to industries that are characterized by relatively stable demand characteristics, as well as consistent dividend payments and relatively low earnings and share price volatility. The initial universe consisted of 490 firms on the TSX in Global Industry Classification Standard sectors 20-30, being Industrials, Consumer Discretionary and Consumer Staples and comprising thirteen major industries.

The initial selection was narrowed down to 27 companies by eliminating companies which:

- had 2007 equity less than \$100 million;
- had missing or negative common equity during 1991-2007;
- were income trusts;
- had less than five years of market data;
- paid no dividends in any year 2004-2008;
- traded fewer than 5 percent of their outstanding shares in 2007;
- had stock ranked "higher risk" or "speculative" by the Canadian Business Service;
- had debt rated non-investment grade, i.e., BB+ or below by either DBRS or Standard & Poor's, or for which none of the agencies report a rating; or
- had average five-year "raw" betas ending December 2007 and December 2008 in excess of 1.0.

Ms. McShane states that since unregulated companies' returns on equity tend to be cyclical, the appropriate period for measuring unregulated company returns should encompass an entire business cycle, covering years of both expansion and decline. The cycle should be representative of a future normal cycle, e.g., relatively similar in terms of inflation and real economic growth. The period 1991-2007 constitutes a full business cycle including the recession of 1991-1992.

Ms. McShane estimates that the average level of returns for low risk Canadian unregulated companies over a normal business cycle is in the approximate range of 12.5-12.75 percent. The comparative risk data indicate, on balance, that Canadian unregulated companies are somewhat riskier than utilities. The somewhat higher risk of the unregulated companies relative to the typical Canadian utility requires a modest downward adjustment. A downward adjustment of 75-100 basis points (based on the typical spread between Moody's BBB rated long-term industrial bond yields and long-term A rated utility bond yields and the relative betas of the unregulated companies and the Canadian and US utility samples) reduces the ROE to a range of 11.5-11.75 percent.

Ms. McShane states that although she considers that the arguments that a downward adjustment to the comparable earnings test results for market/book ratios are without merit, the data indicate that the market/book ratio for the overall Canadian equity market averaged approximately 2.0 times from 1991-2007, the period over which the comparable earnings test was conducted, while the market/book ratio for the sample of comparable Canadian unregulated companies averaged 2.1 times. In her view, the similarity of the lower average market/book ratio of the low risk unregulated Canadian companies relative to the Canadian equity market composites permits the inference that the sample average returns are not characterized by market power. Thus, she submits the comparable earnings results do not warrant an adjustment for market/book ratios.

Ms. McShane also does a comparable earnings test on a larger sample of US unregulated companies which suggests a higher return on equity. (Exhibit B-1, Tab 3, pp. 67-72)

### **Commission Determination**

As for the CE approach, the Commission Panel has reviewed Ms. McShane's selection process, the period of the study, and the results. The companies display conservative stock and debt ratings, an average market to book ratio of 2.1, and an average adjusted beta of 0.71. The Commission Panel considers that the initial results of 12.5 percent which Ms. McShane reduced to 11.5 percent suggest that an estimate of what unregulated Canadian companies of low business risk are earning

on the book values of their equity may lie in the range of 10.5 percent to 11.5 percent.

#### 4.2.5 Allowance for Financing Flexibility

Ms. McShane states that a financing flexibility allowance is an integral part of the cost of capital as well as a required element of the concept of a fair return. It is intended to cover three distinct aspects:

- flotation costs, comprising financing and market pressure costs arising at the time of the sale of new equity;
- a margin, or cushion, for unanticipated capital market conditions; and
- recognition of the “fairness” principle.

Ms. McShane contends that, at a minimum, the financing flexibility allowance should be adequate to allow a utility to maintain its market value, notionally, at a slight premium to book value, i.e., in the range of 1.05-1.10, where a utility would be able to recover actual financing costs, as well as be in a position to raise new equity (under most market conditions) without impairing its financial integrity. A financing flexibility allowance adequate to maintain a market/book in the range of 1.05-1.10 is approximately 50 basis points. As this financing flexibility adjustment is minimal, it does not fully address the comparable returns standard. (Exhibit B-1, Tab 3, pp. 66-67)

Terasen states that the application of a return estimated on the basis of market values and applied to book values implies a market value just equal to book value, and drew the Commission’s attention to the conclusion drawn by Alberta’s Independent Assessment Team in its review of the cost of capital for the Power Purchase Arrangements in 1999, where it stated: “This is sometimes associated with flotation costs but is more properly regarded as providing a financial cushion which is particularly applicable given the use of historic cost book values in traditional rate of return regulation in Canada.” TGI states that the adjustment to the market derived cost for financing flexibility rate provides a minimal increment to preserve financial integrity (i.e. market price slightly in excess of book value). (Exhibit B-3, BCUC 64.1)

Both Ms. McShane and Dr. Vander Weide propose the addition of an allowance for financing flexibility of 50 basis points to what they term the return on equity estimates derived from their DCF and equity risk premium tests, although Dr. Vander Weide does not propose to add it to his *ex ante* risk premium test.

Dr. Vander Weide testified that in the DCF model an issue discount of 2-3 percent on a utility's stock price coupled with issue costs of 5 percent "would amount to approximately 25 basis points." (T3:393)

Similarly Dr. Booth adds an allowance for issue costs of 50 basis points and 25 basis points as a "margin of error." Dr. Booth states: "However, I normally add 50 basis points as a cushion to the direct estimates in line with this practice of many regulators. This is mainly to ensure that there is no dilution and stock prices are more variable than a 10 percent floatation cost allowance would indicate." (Exhibit C11-5, p. 60)

The AUC adjusts CAPM results by adding 50 basis points to CAPM estimates on the grounds that "CAPM results likely underestimate the required market equity return by at least 50 basis points." (AUC Decision 2009-216, para 326)

### **Commission Determination**

The Commission Panel finds no evidence before it to suggest that utilities in Canada trade in the market/book range of 1.05 to 1.10 that prompts Ms. McShane's recommended 50 basis point allowance for flotation costs. The Commission Panel agrees with Dr. Vander Weide that under normal circumstances flotation costs, comprising financing and market pressure costs arising at the time of the sale of new equity, require a 25 basis point addition to a ROE estimate.

The Commission Panel notes that the margin, or cushion, for unanticipated capital market conditions was used in Alberta in a situation where a formula for 20 year Power Purchase Arrangements was being established. It does not find the reference relevant in this proceeding.

As for the fairness principle, the Commission Panel agrees with the practice of the AUC of adding 50 basis points to CAPM estimates and adopts it in this proceeding.

**Accordingly the Commission Panel determines that for DCF, ERP and CAPM estimates it will add a 25 basis point allowance to recognize the cost of issuing additional equity. The Commission Panel will add an additional 50 basis point fairness allowance to CAPM estimates. The Commission Panel will make no allowance for CE estimates.**

#### 4.2.6 Fair Return on Equity

Having determined that it will accord weight to each of the three approaches and determined the appropriate ROE ranges that the approaches yielded, the Commission Panel can determine TGI's ROE.

#### **Commission Determination**

Earlier in this Decision the Commission Panel found that the suitable equity ratio for TGI is in the 40 percent range, and that it would consider the effect of its short-term business risk mitigators (such as RSAM and deferral accounts) in the determination of TGI's ROE.

The Commission Panel also determined that it would give most weight to the DCF approach, lesser weight to the ERP and CAPM approaches and a very small amount of weight to the CE approach.

The following table sets out the Commission Panel's determined ranges for each approach:

Approach	Range (%)	Allowance (%)	Total (%)
DCF	9.00-10.00	0.25	9.25-10.25
ERP	9.25-10.00	0.25	9.50-10.25
CAPM	7.30-8.30	0.75	8.05-9.05
CE	10.5-11.5	0.0	10.5-11.5

Accordingly, after attaching the weight that it considers appropriate to each of the three approaches the Commission Panel determines that the ROE for TGI is 9.50 percent.

#### 4.3 Interim Rates and the Effective Date of the ROE Increase

Terasen requests that any increase in the ROE of the three utilities should be reflected in their rates effective from July 1, 2009. Prior to the commencement of the Oral Hearing, the Commission Panel considered an application by Terasen pursuant to section 89 of the *Act*, that the rates of the three utilities be made interim effective July 1, 2009. Section 89 of the *Act* is included in Appendix C to the Decision.

All Intervenors opposed Terasen's request at that time. The CEC submitted that all parties had agreement on the equity ratio and the ROE in the Commission approved settlement documents that can be found in Commission Order G-33-07. CEC acknowledged that while the 2008/2009 Negotiated Settlement Agreement ("NSA") did not preclude Terasen from applying to the Commission for a variation in its equity ratio or ROE, it submitted that it was inequitable that Terasen would seek and receive an adjustment for a period of six months of the 2008/2009 settlement period on what it termed a retroactive basis. (Exhibit C3-2)

Terasen's Reply pointed out that its request was in no way retroactive and that it was perfectly within the terms of the NSA. (Exhibit B-2)

In Order G-78-09 dated June 24, 2009, the Commission Panel agreed with Terasen Utilities that an Order approving the requested relief that their current rates be made interim would be on a 'without prejudice' basis, and that "all Parties will have the opportunity to fully participate in the hearing process and no final order will be made until all evidence has been heard and considered." (Exhibit A-4)

In its Reply, Terasen notes that no Intervenor disputed that the change to the ROE of Terasen should be effective July 1, 2009 (Terasen Reply, para 1). During the Oral Argument Phase counsel for JIESC, CEC ICG and BCOAPO all stated that they took no position on the issue (T6:837).

### **Commission Determination**

The Commission Panel notes that the Intervenor take no position on this issue and grants the relief requested by Terasen. The effect of this determination will result in the ROE for TGI for 2009 being 8.47 percent for 6 months and 9.50 percent for six months or an average annual ROE of 8.98 percent, with that of TGVI being on average 60 basis points higher for 2009 (in accordance with the Commission Panel's determination at Section 6.1 below) and that of TGW 50 basis points higher for 2009.

#### **4.4 The Impact of the Determinations on the Fair Return Standard**

Having established an equity ratio of 40 percent, and a ROE of 9.5 percent, the Commission Panel revisits the fair return standard to ensure that TGI's overall return will be comparable to the return available from the application of the invested capital to other enterprises of like risk (comparable investment requirement), enable TGI's financial integrity to be maintained (financial integrity requirement), and permit TGI to attract incremental capital on reasonable terms and conditions (capital attraction requirement).

In this regard it has considered Moody's credit metrics and its rating of TGI.



The Commission Panel notes that the ROE of 9.5 percent should enable TGI, following the end of its PBR regime, to maintain its earnings in the 9.0 to 14.0 percent range and maintain this metric at its present level in Moody's A range.

The Commission Panel considers that the combination of a 40 percent equity level and a ROE of 9.5 percent will improve the financial metrics such as EBIT/Interest, Retained Cash Flow/Debt, Debt to Book Capitalization and Free Cash Flow/Funds from Operations.

The Commission Panel observes that a 40 percent equity level would move TGI from a Ba to Baa under Moody's factor mapping and that this metric alone is worth 15 percent of a Moody's rating. Similarly the combination of a 40 percent equity level and a ROE of 9.5 percent will result in an increase in EBIT/Interest from between 1-2 to between 2-3 and would move TGI from Ba to Baa, under Moody's factor mapping and that this metric is worth another 15 percent of a Moody's rating.

These improvements in metrics should, in the Commission Panel's opinion, enable TGI both to maintain its A3 rating with a margin of comfort and to attract the capital it requires on reasonable terms and conditions.

In addition, the Commission Panel considers that the combination of a 40 percent equity level and a ROE of 9.5 percent will increase TGI's times interest covered ratio and will thus enable it to raise comfortably more than the \$100 million of unsecured debentures its current equity level and ROE allow.

**As a result the Commission Panel considers that its decision meets the fair return standard for TGI.**

## 5.0 THE AUTOMATIC ADJUSTMENT MECHANISM

This Section addresses the issues:

- Given TGI's appropriate ROE, does the Commission's adjustment mechanism produce an ROE that meets the fair return standard?
- If not, should the Commission retain, amend, or eliminate the adjustment mechanism?

Terasen requests that the adjustment mechanism be eliminated, with all three of its expert witnesses urging the Commission to abandon the formula.

Ms. McShane states that reliance on a formula which tracks changes in the long-term Canada bond yield, rather than the composite of factors that bear on equity return requirements, has resulted in allowed ROEs falling below levels commensurate with a fair return and that the extent to which this has happened since 1994 can be assessed by the table which compares the allowed ROEs of Canadian and US utilities set out in Section 2.3 of this Decision.

Terasen submits that the adoption of adjustment mechanism in Canada in the mid-1990s coincided with the almost exclusive use of equity risk premium and CAPM approaches for the determination of allowed ROE for utilities in Canada.

Ms. McShane testified that the crossover between Canadian and US utility returns started when regulatory commissions in Canada started to place almost all the weight on the CAPM and equity risk premium tests. (T4:565)

Terasen states that since the adjustment mechanisms were first adopted in the mid 1990s, yields on long-term Canada bonds have steadily decreased and returns on equity allowed for Canadian utilities have decreased to unprecedented low levels.

In addition the turbulence in the capital markets experienced in the last three years has led to a “flight to quality” which has created an abnormal demand for long-term Canada bonds that were already in short supply. This flight to quality has driven down the yield on the long-term Canada bonds, and consequently driven down the formulaic ROE that uses the long-term Canada bonds as a benchmark. Yet even as the allowed ROE has declined, the cost of capital for utilities has risen dramatically, as investors have demanded higher premiums for risk.

Terasen contends that if it cannot offer a return to equity to investors similar to returns available to comparable risk investments, it will be disadvantaged in competing for capital in the future, even if the capital markets return to historical norms. (Exhibit B-1, p. 23)

Mr. Carmichael points to credit rating agencies which have recently highlighted their concerns regarding the weak state of credit metrics achieved by utilities such as TGI that are regulated with an ROE formula, and which have compared such utility’s lower metrics with those of US utilities that the rating agencies believe to be comparable.

Mr. Carmichael states that the financial performance of utilities in Canada lags the performance of US based utilities. This has prompted an equity analyst to suggest that ROE formulae in use by regulators in Canada are “confiscatory and fail to meet the fair return standard,” while other analysts suggest that the formulae are now “broken.” According to the latter group of analysts, under current financial market circumstances such formulas result in lower rates of return on common equity, while all evidence indicates that capital markets require higher returns on corporate securities reflecting the re-pricing of risk which has taken place. Debt analysts have opined that ROE results produced by the formulas “have not reflected the real world increase in the cost of capital” and “the annual ROE adjustment is not even yielding the right direction of change in the cost of capital.” (Exhibit B-1, Tab 2, p. 7)

Dr. Vander Weide performs a number of tests to determine the validity of the adjustment mechanism ROE formula, the most significant of which were to examine evidence on the sensitivity of the forward looking, or *ex ante*, required equity risk premium on utility stocks to changes in

interest rates in Canada and the US. He states that while the ROE adjustment formula implies that the cost of equity for TGI declines by 75 basis points for every 100-basis-point decline in the yield to maturity on long-Canada bonds, his findings support the conclusions that i) the cost of equity declines by less than 50 basis points for every 100-basis-point decline in the yield to maturity on long-Canada bonds, and ii) US regulators typically reduce the allowed ROE by less than 50 basis points when the yield to maturity on long-term government bonds declines by 100 basis points. (Exhibit B-1, Tab 4, p. 9)

According to Terasen the process of designing an automatic adjustment formula should involve a balance among the following criteria:

- it should be relatively simple to understand and apply;
- it should be based on changes in one or more reasonably available and verifiable variables;
- it should exclude changes in variables due to abnormal market events;
- it should incorporate variables which vary in a quantifiable way with the utility cost of equity; and
- it should incorporate variables which are not vulnerable to changes caused by company-specific circumstances which may not impact on the cost of equity for the utilities to which the formula applies. (Exhibit B-1, pp. 31-32)

Terasen stated that it was working on the design of such a formula, but had nothing to show for its efforts so far. (T2:87-88)

FortisBC supports Terasen's Application, including the elimination of the AAM. (FortisBC Argument, para 2)

PNG submits that, "the evidence in this proceeding demonstrates overwhelmingly that the automatic adjustment formula does not produce a fair return on common equity for BC utilities and should therefore be eliminated, at least until a more appropriate automatic adjustment mechanism can be determined." (PNG Argument, para 4)

On the other hand, Dr. Booth states that, "...I would recommend that the BCUC maintain their ROE formula indefinitely since like most such formulae in Canada it has done a remarkably good job of awarding ROEs that are within a zone of reasonableness, while minimising repetitive testimony. It is also broadly consistent with awarding allowed ROEs consistent with adjustment formulae used elsewhere in Canada." (Exhibit C11-5, pp. 3, 4)

JIESC submits that Terasen's analysis comparing US with Canadian ROEs is "oversimplified and incorrect. All of the data shows that risk premiums generally, not just for utilities, for Canada are lower than (sic) in the US. ...Canadian and US Utility and market risk premiums departed company, not when the AAM came into place, but when Canada got its financial house in order in 1997 and the US failed to do so. Up until last year Canada generally had financial surpluses and the US has faced increasing deficits." (JIESC Argument, p. 45)

Terasen observes that while in 1995 the NEB adopted an AAM similar to that adopted in BC in 1994, that in the NEB Letter Decision, the NEB determined that the RH-2-94 Decision will not continue in effect. As a result, the return on equity for the pipelines regulated by the NEB will not be determined by an automatic adjustment mechanism (Terasen Argument, para 4).

At the Oral Phase of Argument, counsel for FortisBC pointed out that the AUC had "moved away from" its automatic adjustment formula in AUC Decision 2009-216. (T6:743)

### **Commission Determination**

A key consideration in the determination of whether to retain, amend or eliminate the AAM is whether the ROE produced by application of the formula for 2010 is reasonably comparable to the ROE determined by the Commission Panel from the evidence before it. The Commission's calculation of the ROE for 2010, as derived from the adjustment mechanism, is 8.43 percent, compared to the Commission Panel's determination that the appropriate ROE for TGI in 2010 is 9.50 percent. The Commission Panel determines that, in its present configuration, the AAM will not provide an ROE for TGI for 2010 that meets the fair return standard.

The Commission Panel agrees that a single variable is unlikely to capture the many causes of changes in ROE and that in particular the recent flight to quality has driven down the yield on long-term Canada bonds, while the cost of risk has been priced upwards.

In the Commission Panel's opinion, reliance on CAPM by Canadian regulatory agencies has also contributed to the divergence between Canadian and US allowed ROEs. In light of the limited weight given by the Commission Panel to CAPM in determining the ROE for TGI for 2010, it would seem inconsistent to retain the adjustment mechanism.

**Accordingly the Commission Panel directs that the AAM be eliminated. TGI is directed to complete its study of alternative formulae and report to the Commission by December 31, 2010.**

## **6.0 THE APPROPRIATE RETURN ON EQUITY FOR TGI AND TGW**

This Section looks at TGI and TGW. The business risks of each are considered and a suitable capital structure and ROE for each are determined. It addresses the issue: Given TGI's appropriate capital structure and ROE what are the appropriate ROEs for TGI and TGW?

TGI and TGW request that the Commission continue to set their respective allowed returns on equity with reference to the Benchmark ROE established in this proceeding for TGI by adding a utility specific premium of 70 basis points for TGI and 50 basis points for TGW to the Benchmark ROE.

Terasen submits that the business risks relating to TGI also relate to TGI and TGW. All three companies are in the natural gas distribution business in British Columbia, and all three are subject to the provincial policies and legislation, and other factors that have increased the risk of TGI.

### **6.1 TGI**

TGI requests that the Commission continue to set its allowed ROE with reference to TGI's ROE established in the proceeding by adding a utility specific risk premium of 70 basis points to TGI's ROE.

In addition to TGI's business risk Terasen cites additional sources of business risk faced by TGI:

- TGI is a relatively immature LDC seeking to build a new market on Vancouver Island where it is at a competitive disadvantage caused by the differences in gas versus electric rate design methodologies;
- TGI is burdened with the recovery of an accumulated deficit that peaked at approximately \$88 million in 2002;
- TGI faces the elimination of Provincial royalty revenues in 2012 that have ranged from \$35 to \$40 million in recent years and cover approximately 20 percent of the current cost of service;

- TGVI is highly dependent on industrial load related to the Vancouver Island Pulp Mill Joint Venture which is taking transportation service at its minimum allowed levels and whose contracts expire at the end of 2012, and the Island Cogeneration Project ("ICP") contract with BC Hydro whose future has been made less certain by the current climate change legislation and policy;
- TGVI faces a greater security of supply risk due the fact that all gas to the Island flows from a single source on the mainland and is also dependent on the use of undersea high pressure transmission facilities; and
- TGVI will become liable to repay \$75 million of non-interest-bearing senior government debt, currently sitting as a credit to rate base, which when repaid will contribute to higher cost of service and impact the competitive position of the utility.

Terasen cites Ms. McShane's testimony in the 2005 ROE hearing as follows:

"In my opinion, to equate TGVI to the benchmark low risk utility, an allowed common equity ratio of no less than 45-50% would be required (compared to the range of 35-40% for Terasen Gas). Terasen Gas is proposing a 40% common equity ratio for TGVI. I view the proposal as reasonable; however, the difference between the proposed 40% and the indicated range of 45-50% (mid-point of 47.5%) requires an incremental equity risk premium relative to the benchmark low risk utility return." (Exhibit B-11, Panel 1.6)

In the 2006 ROE Decision, the Commission found: "that the uncertainty surrounding the contract with BC Hydro beyond 2007 creates a significant incremental change to TGVI's business risk together with uncertainty as to the ultimate recovery of the balance on the RDDA. In addition, the uncertainty regarding the cessation of royalty payments from the Provincial Government and the need to repay the interest free loans from senior levels of government demonstrate that TGVI is exposed to considerably greater business risk than a benchmark low-risk utility. It is evident to the Commission Panel that in TGVI's case the probability of not earning a return on and of capital is considerably higher than is the case with the five "mature" gas distribution companies in Canada" (2006 ROE Decision, page 30). Based on these findings the Commission approved an equity ratio of 40 percent for TGVI and ROE 70 basis points higher than TGI.



## 6.2 TGW

TGW requests that the Commission continue to set its respective allowed ROE with reference to TGI's ROE established in the proceeding by adding a utility specific risk premium of 50 basis points to TGI's ROE.

Terasen submits that the relative risk of TGW as compared to TGI since the proceeding that led to the Commission's Order G-35-09 in April 2009, which found that a premium of 50 basis points over the Benchmark ROE was appropriate, has not changed. (TGI Argument, para 364)

### **Commission Determination**

The Commission has in the past awarded both increased equity ratios and ROEs for both TGVI and TGW over those awarded TGI. The Commission Panel considers that TGVI's risk has declined since 2005 because of i) the resolution of the contract with BC Hydro at ICP and ii) greater certainty around the recovery of its RDDA balance.

**Accordingly the Commission Panel determines that TGVI's premium over TGI's ROE should be reduced from 70 basis points to 50 basis points. The Commission Panel determines that TGW's premium over TGI's ROE should remain at 50 basis points for the reasons set out in the Commission Order G-35-09.**

The Commission Panel notes that in determining TGI's equity ratio and ROE in this proceeding it has sought to determine an equity ratio for TGI that reflects its long-term business risks, while adjusting its ROE to reflect its short-term business risks. It also notes that the evidence suggests that both TGVI and TGW have greater long-term business risk than TGI while possessing similar deferral mechanisms to enable them to earn their allowed ROEs in the short-term. The Commission Panel further notes Ms. McShane's testimony that both utilities require greater equity thickness than 40 percent.

**Accordingly, the Commission directs TGV and TGW to file with their next revenue requirement applications evidence as to what equity component best reflects their respective long-term business risks.**

## 7.0 TGI AS THE BENCHMARK UTILITY

This Section discusses the concept of the benchmark utility and what effect the Commission Panel's determination should have on other utilities in BC primarily FortisBC and PNG. It addresses the issue: What impact should the Commission Panel's determination have on the remaining utilities in BC that may be affected, namely FortisBC and PNG.

Ms. McShane observes that, "it is important to recognize that, while it may be administratively efficient to designate one utility as the "benchmark," it does not necessarily follow that (1) the designated benchmark is the lowest risk utility, or (2) that the risk of the designated benchmark utility does not change over time relative to its peers." (Exhibit B-1, Tab 3, p. 24)

In response to an Information Request as to whether TGI still considered itself a "benchmark low-risk utility" for the purposes of setting allowed ROEs, TGI replies that it has been designated "a benchmark low-risk utility" by the Commission, and points out that BC Hydro and BC Transmission Corporation have their ROE set with reference to the most comparable investor owned utility, which by virtue of size and geography has defaulted to TGI.

TGI accepts that it is has been, and will be, the benchmark utility in respect of being the "benchmark" or "standard" used to set the ROE of other utilities in BC, but does not consider itself to be "a benchmark low-risk utility" now, if it ever was. Any utility could act as the benchmark and TGI due to its size has been selected as the benchmark by the Commission in the past. (Exhibit B-3, BCUC 2.1)

PNG submits that if the Commission determines that the AAM no longer produces a fair return for the Terasen, it follows that the formula no longer produces a fair return for the other utilities subject to the formula, including PNG.

PNG states that it will assess whether any adjustment to its utility specific risk premiums are required as a result of the Commission's decision and, if adjustments are required, that it will file an update to its 2010 Capital Structure and Equity Risk Premium Application. (PNG Argument, para 3)

FortisBC seeks an order of the Commission maintaining the current regulatory framework in British Columbia whereby TGI's ROE is established as the Benchmark ROE for utilities in British Columbia, including FortisBC, as previously ordered by the Commission in Order G-14-06.

FortisBC submits that the Commission determined in 1994 that the use of a benchmark was in the public interest, and that there is no evidence in the record of this proceeding to suggest that the benchmark concept should be abandoned in British Columbia. FortisBC identifies a number of advantages that flow from a Benchmark ROE for utilities including:

- cost savings to the Commission and to Intervenors in avoiding additional, unnecessary hearings; the evidence related to economic outlook and capital market conditions need not be presented nor heard more than once;
- a consistent approach to economic outlook and capital market conditions, considered with reference to expert evidence gathered at a single point in time; and
- greater consistency with respect to ROE determinations for individual utilities from a common base.

FortisBC submits that the NSA approved by the Commission in Order G-193-08 is a performance based regulation settlement and contemplates the application of the TGI's ROE as the Benchmark ROE for FortisBC through to, at a minimum, 2011. The NSA provides for FortisBC to receive the "allowed return on equity" which is calculated by reference to the Benchmark ROE with adjustments and sharing as contemplated in the approved NSA.

**Commission Determination**

The Commission Panel notes that PNG seeks no relief in this proceeding and that it proposes to consider this Decision and to determine if any amendments to its 2010 Capital Structure and Equity Risk Premium Application are merited.

The Commission Panel agrees with FortisBC that there is no evidence on the record in this proceeding suggesting that the use of a Benchmark ROE is not in the public interest. **Accordingly the Commission Panel determines that the ROE for TGI it has determined in this proceeding should continue to serve as the Benchmark ROE for FortisBC and any other utility in BC that uses the Benchmark ROE to set rates.**

DATED at the City of Vancouver, in the Province of British Columbia, this 16<sup>th</sup> day of December 2009.

*Original signed by:*

\_\_\_\_\_  
A.J. (TONY) PULLMAN  
PANEL CHAIR/COMMISSIONER

*Original signed by:*

\_\_\_\_\_  
DENNIS A. COTE  
COMMISSIONER

*Original signed by:*

\_\_\_\_\_  
MICHAEL R. HARLE  
COMMISSIONER

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BRITISH COLUMBIA  
UTILITIES COMMISSION

ORDER  
NUMBER G-158-09

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IN THE MATTER OF  
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by  
Terasen Gas Inc. ("TGI"), Terasen Gas (Vancouver Island) Inc. ("TGVI") and  
Terasen Gas (Whistler) Inc. ("TGW") (collectively the "Terasen Utilities")  
for Return on Equity and Capital Structure

**BEFORE:** A.J. Pullman, Panel Chair  
D.A. Cote, Commissioner  
M.R. Harle, Commissioner

December 16, 2009

### ORDER

#### WHEREAS:

- A. By letter dated May 15, 2009, the Terasen Utilities filed with the British Columbia Utilities Commission (the "Commission") pursuant to sections 59 and 60 of the *Utilities Commission Act* (the "Act"), an application for Return on Equity and Capital Structure (the "Application"); and
- B. TGI applied for an increased Return on Equity ("ROE") for rate-setting purposes, and that the so determined ROE for TGI be used in establishing the ROE of TGVI and TGW used for rate-setting. The Application requests that the revised ROE be effective from July 1, 2009. In addition TGI applied for an increase of the equity ratio in its Capital Structure to 40 percent effective January 1, 2010. Terasen Utilities further requested that the Commission set their current rates as interim, effective July 1, 2009, until such time as permanent rates were established; and
- C. By Order G-53-09 dated May 21, 2009, the Commission established a Procedural Conference to take place on June 9, 2009 to hear submissions regarding the regulatory process for the review of the Application; and
- D. Further to the Procedural Conference, the Commission issued Order G-70-09 dated June 9, 2009 which established a Regulatory Timetable for an Oral Hearing Process as well as a schedule for written argument to hear submissions from the Parties on the subject of the request for interim rates; and
- E. By Order G-78-09 dated June 24, 2009, the Commission ordered, with Reasons for Decision attached as Appendix A to the Order, that the current rates of TGI and TGW be set as interim effective July 1, 2009 and that the changes to the allowed ROE from this proceeding be treated as changes to TGVI's cost of service, effective July 1, 2009; and

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- F. The Oral Hearing took place from September 28, 2009 to October 1, 2009. The following Intervenors took an active role in the proceedings, filed written argument or took part in the Oral Phase of Argument; the British Columbia Old Age Pensioners' Organization *et al.* ("BCOAPO"), the Commercial Energy Consumers of British Columbia ("CEC"), FortisBC Inc. ("FortisBC"), Pacific Natural Gas Ltd. ("PNG"), the Joint Industry Electricity Steering Committee ("JIESC") and the Industrial Customer Group ("ICG"); and
- G. The schedule of written Argument provided for Final Submissions to be filed as follows: i) Terasen Utilities, FortisBC and PNG on or before October 20, 2009; ii) Intervenors on or before November 6, 2009; and iii) Reply from Terasen Utilities, FortisBC and PNG on or before November 13, 2009; and
- H. An Oral Phase of Argument was held on November 24, 2009; and
- I. The Commission Panel has considered the Application, the evidence, and the submissions of the Parties all as set forth in the Decision issued concurrently with this Order.

**NOW THEREFORE** the Commission orders as follows:

1. The appropriate equity ratio for TGI is 40 percent effective January 1, 2010.
2. TGI is to file within 30 days a document setting out how and when it will implement the change to its capital structure in compliance with the ring-fencing conditions approved by Commission Order G-49-07.
3. A return on equity for TGI of 9.50 percent for rate-setting purposes is approved effective July 1, 2009.
4. The TGI ROE approved in paragraph 3 of this Order is to be used as the Benchmark ROE in establishing the return on equity of TGI and TGW used for rate-setting purposes and the allowed return on equity for TGI and TGW is effective July 1, 2009.
5. TGI's request to continue to set its allowed return on equity with reference to the Benchmark ROE by adding a utility specific risk premium of 70 basis points is denied. TGI is allowed a utility specific risk premium of 50 basis points above the Benchmark ROE.
6. TGW's request to continue to set its allowed return on equity with reference to the Benchmark ROE by adding a utility specific risk premium of 50 basis points is approved.



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7. TGI and TGW are to file in their respective next revenue requirement applications evidence on the equity component that best reflects their respective long-term business risks.
8. The TGI ROE approved in paragraph 3 of this Order can continue to serve as the Benchmark ROE for FortisBC and any other utility in British Columbia that uses a Benchmark ROE to set rates.
9. The automatic adjustment mechanism is eliminated.
10. TGI is to complete its study of alternative formulae to an automatic adjustment mechanism and report to the Commission on the study results by December 31, 2010.

**DATED** at the City of Vancouver, in the Province of British Columbia, this 16<sup>th</sup> day of December, 2009

BY ORDER

*Original signed by:*

A.J. Pullman  
Panel Chair and Commissioner

## THE APPLICATION

On May 15, 2009 Terasen Gas Inc. ("TGI"), Terasen Gas (Vancouver Island) Inc. ("TGVI"), and Terasen Gas Whistler Inc. ("TGW") filed a return on equity and capital structure application under sections 59 and 60 of the *Utilities Commission Act* with the British Columbia Utilities Commission ("Application").

The following Intervenors took an active role in the proceedings, filed written argument or took part in the Oral Argument Phase of the proceedings:

- Joint Industry Electricity Steering Committee ("JIESC")
- Commercial Energy Consumers of BC ("CEC")
- British Columbia Old Age Pensioners Organization
  - Active Support Against Poverty
  - B.C. Coalition of People with Disabilities
  - Council of Seniors' Organizations of B.C.
  - End Legislated Poverty
  - Federated Anti-Poverty Groups of B.C., and
  - Tenants' Rights Action Coalition (collectively "BCOAPO")
- Industrial Customer Group, comprising:
  - Certainteed Gypsum Canada Inc.
  - Domtar Pulp and Paper Products Inc.
  - Federated Co-operatives Ltd.
  - Teck Metals Ltd., Weyerhaeuser Company Ltd. and
  - Zellstoff Celgar Limited Partnership (collectively "ICG")
- FortisBC Inc.
- Pacific Northern Gas Ltd.

Following receipt of the Application, the Commission issued Order G-53-09 dated May 21, 2009 establishing a Preliminary Regulatory Timetable, including a notice of procedural conference to be held on June 9, 2009.

By Order G-70-09 dated June 9, 2009 following the procedural conference, the Commission published the final Regulatory Timetable which set dates for two rounds of Information Requests and an Oral Hearing to commence on September 28, 2009.

Order G-70-09 also established a schedule for written argument on the subject of Terasen's request pursuant to section 89 of the *Act* for interim rates. Intervenor submissions were due on June 15, 2009 and Terasen reply by June 22nd, 2009.

By Order G-78-09 and Reasons for Decision dated June 24, 2009, the Commission approved, pursuant to section 89 of the *Act*, of the request of TGI and TGW that their respective current rates be set as interim, effective July 1, 2009. In addition, pursuant to the provisions of the Special Direction made under section 7 of the Vancouver Island Natural Gas Pipeline Act, the Commission ordered that changes to the allowed ROE from the proceeding were to be treated as changes to TGVI's cost of service, effective July 1, 2009.

The Commission Panel accepted Terasen's submission that the application for interim relief should be reviewed pursuant to section 89 of the *Act* which does not refer to special circumstances. It further agreed with Terasen that a Commission Order approving the requested relief that the current rates be made interim was on a 'without prejudice' basis, that all parties would have the opportunity to fully participate in the hearing process and that no final order would be made until all evidence had been heard and considered. (Exhibit A-4)

The Oral Hearing commenced on September 28, 2009 and concluded on October 1, 2009. Argument was received from the Terasen, PNG and FortisBC on October 20, 2009. Argument was filed by the following Intervenors on November 6, 2009: JIESC, BCOAPO, CEC and ICG. Reply was filed by Terasen on November 13, 2009.

The Oral Phase of Argument was scheduled to take place on November 24, 2009. Parties were originally asked to address the following issues:

- Whether the Commission Panel can take into account the Alberta Utilities Commission 2009 Generic Cost of Capital Decision, Decision 2009-216, dated November 12, 2009 (Decision 2009-216) in arriving at its decision?
- Whether the Commission Panel should take into account Decision 2009-216 in arriving at its decision?
- If the Commission Panel were to eliminate the automatic adjustment mechanism (“adjustment mechanism”) as requested by the Terasen Utilities, upon what evidentiary basis can the Commission Panel conclude that the return on common equity (“ROE”) that it determines for TGI in this proceeding should be used as the benchmark or generic ROE for FortisBC and Pacific Northern Gas?
- If the Commission Panel were to eliminate the adjustment mechanism as requested by the Terasen Utilities and conclude that the ROE that it determines for TGI in this proceeding should not be used as the benchmark or generic ROE for FortisBC and Pacific Northern Gas, what are the consequences for FortisBC and Pacific Northern Gas?

By letter dated November 18, 2009 the Commission added two additional issues to the Agenda and requested that parties address a document prepared by Commission staff in accordance with the Commission’s Order G-25-94, as amended by Orders G-80-99, G-109-01, and G-14-06 for the purpose of determining the allowed return on common equity for a benchmark low-risk utility for the ensuing year, which showed that the current formula resulted in an allowed return on common equity of 8.43 percent for a low-risk benchmark utility in 2010. The two further issues to be addressed were:

- Whether any party objects to the Commission Panel relying upon the staff document in arriving at its decision; and
- If there is no objection, now that the formula has produced an allowed return on common equity for 2010 of 8.43 percent, does it follow that, for the purposes of the JIESC Final Argument, the Panel no longer needs to consider the JIESC alternative position to set the return on equity on the basis of Dr. Booth’s recommendation of 7.75 percent?

The Oral Phase of Argument took place on November 24, 2009 as scheduled.

## THE HISTORY OF ROE AWARDS IN BC, CANADA AND THE US SINCE 1994, AND THE USE OF A FORMULA TO ESTABLISH ROE

Prior to 1994 the ROE and capital structures of utilities in North America for rate setting purposes were established as part of the periodic revenue requirement applications the utilities would file with their regulators. In 1994, the BCUC held a public hearing into the appropriate rates of return on common equity and capital structure for BC Gas (now TGI), West Kootenay Power (now FortisBC) and PNG. In addition, the Commission heard evidence on processes or mechanisms that might be employed to improve the determination of ROE and capital structures in future years. In its decision dated June 10, 1994 attached to Order G-35-94, the Commission, for the purpose of setting the 1995 rate of return on common equity for utilities subject to its jurisdiction, accepted an automatic adjustment mechanism, based on long-term Canada bond yields. The formula has remained in place since that time and was adjusted by Orders G-80-99 and G-109-01. Following the 2005 ROE hearing the Commission issued Order G-14-06 and its 2006 ROE Decision on March 2, 2006, amending the formula.

As a result of Order G-14-06 the benchmark ROE now rises or falls by 75 basis points for each 100 basis point increase or decrease in the forecast long-Canada bond yield, as follows:  $ROE_t = 9.145\% - [0.75 \times (5.25\% - YLD_t)]$ , where  $YLD_t$  equals the forecast long-term Government of Canada bond.

By Letter L-55-08 dated November 20, 2008, the Commission determined that the current ROE automatic adjustment mechanism resulted in an allowed return on common equity of 8.47 percent for a low-risk benchmark utility in 2009. This was calculated by averaging the November 2008 Consensus Forecasts of the 10-year Canada bond yield at the end of [both?] February and of November, 2009, and adding the average yield spread between 10-year and 30-year bonds of 0.50 percent reported by the Bank of Canada for all trading days in October, 2008 to arrive at the forecast yield on long-term Canada bonds for 2009 of 4.35 percent.

Commission Order G-14-06 set the approved benchmark return on equity (ROE) at 9.145 percent assuming a 30-year long Canada bond yield of 5.25 percent, and directed that where the forecast yield was greater or less than 5.25 percent, a sliding scale adjustment would raise or lower the benchmark ROE by 75 percent of the change in the forecast yield on long-term Canada bonds which would be rounded to the nearest 2 decimal places as follows:

$$9.145 - (0.75 * (5.25 - 4.35)) = 8.470\%$$

Based on L-55-08 the following ROEs were approved for 2009 for the following utilities in BC on their capital structures: Terasen Gas (Vancouver Island) Inc., Terasen Gas (Whistler) Inc., Fortis BC Inc. and Pacific Northern Gas Ltd.

Section 4(d) of Special Direction No. HC2 obliges the Commission to set rates for BC Hydro that enable it to achieve an annual rate of return on equity equal to the pre-income tax annual rate of return allowed by the commission to the most comparable investor-owned energy utility regulated under the *Act*.

Similarly, section 3(c) of Special Direction No. 9 obliges the Commission to set rates for BCTC that generate for the transmission corporation an annual rate of return on deemed equity that is equal to the annual rate of return that is allowed by the commission on the authority's equity as that term is defined in Special Direction HC2.

In Canada an adjustment mechanism was employed by a number of regulatory bodies including the NEB (1995), the OEB (1997) and the AEUB (2004).

In the US an attempt to develop an adjustment mechanism was made by only two regulatory agencies – the Federal Energy Regulatory Commission (“FERC”) and the New York Public Service Commission (“NYPSC”). The FERC generally dropped its pursuit of a generic formula by about 1992 over legal concerns that a company-specific record must support the finding of a fair return. The FERC since has

not departed from a case-by-case examination of the cost of equity. The NYPSC formula was created after an extensive process but was never adopted formally by the NYPSC.

Both FERC and NYSPC focused on a formula for deriving the cost of equity, rather than the long bond rates plus a pre-determined spread (Exhibit B-1, Appendix x, p.17).

In its Letter Decision, the NEB determined that the RH-2-94 Decision would not continue in effect and that the return on equity for the pipelines it regulates will no longer be determined by an adjustment mechanism.

In its Decision 2009-216, the AUC, following a generic hearing, determined that it would not employ an adjustment formula for 2010, but would initiate a process in 2011 “in order to allow the capital markets some time to return to traditional relationships or show evidence of what the new relationships may be.” (AUC Decision, para 423-24)

The OEB is undertaking a consultative process on the cost of capital for the utilities it regulates, while proceedings are ongoing in Newfoundland and Québec.

## EXCERPTS FROM UTILITIES COMMISSION ACT

### *Discrimination in rates*

59 (1) A public utility must not make, demand or receive

(a) an unjust, unreasonable, unduly discriminatory or unduly preferential rate for a service provided by it in British Columbia, or

(b) a rate that otherwise contravenes this Act, the regulations, orders of the commission or any other law.

(2) A public utility must not

(a) as to rate or service, subject any person or locality, or a particular description of traffic, to an undue prejudice or disadvantage, or

(b) extend to any person a form of agreement, a rule or a facility or privilege, unless the agreement, rule, facility or privilege is regularly and uniformly extended to all persons under substantially similar circumstances and conditions for service of the same description.

(3) The commission may, by regulation, declare the circumstances and conditions that are substantially similar for the purpose of subsection (2) (b).

(4) It is a question of fact, of which the commission is the sole judge,

(a) whether a rate is unjust or unreasonable,

(b) whether, in any case, there is undue discrimination, preference, prejudice or disadvantage in respect of a rate or service, or

(c) whether a service is offered or provided under substantially similar circumstances and conditions.

(5) In this section, a rate is "unjust" or "unreasonable" if the rate is

(a) more than a fair and reasonable charge for service of the nature and quality provided by the utility,

(b) insufficient to yield a fair and reasonable compensation for the service provided by the utility, or a fair and reasonable return on the appraised value of its property, or

(c) unjust and unreasonable for any other reason.



*Setting of rates*

**60 (1)** In setting a rate under this Act

(a) the commission must consider all matters that it considers proper and relevant affecting the rate,

(b) the commission must have due regard to the setting of a rate that

(i) is not unjust or unreasonable within the meaning of section 59,

(ii) provides to the public utility for which the rate is set a fair and reasonable return on any expenditure made by it to reduce energy demands, and

(iii) encourages public utilities to increase efficiency, reduce costs and enhance performance,

(b.1) the commission may use any mechanism, formula or other method of setting the rate that it considers advisable, and may order that the rate derived from such a mechanism, formula or other method is to remain in effect for a specified period, and

(c) if the public utility provides more than one class of service, the commission must

(i) segregate the various kinds of service into distinct classes of service,

(ii) in setting a rate to be charged for the particular service provided, consider each distinct class of service as a self contained unit, and

(iii) set a rate for each unit that it considers to be just and reasonable for that unit, without regard to the rates fixed for any other unit.

(2) In setting a rate under this Act, the commission may take into account a distinct or special area served by a public utility with a view to ensuring, so far as the commission considers it advisable, that the rate applicable in each area is adequate to yield a fair and reasonable return on the appraised value of the plant or system of the public utility used, or prudently and reasonably acquired, for the purpose of providing the service in that special area.

(3) If the commission takes a special area into account under subsection (2), it must have regard to the special considerations applicable to an area that is sparsely settled or has other distinctive characteristics.

(4) For this section, the commission must exclude from the appraised value of the property of the public utility any franchise, licence, permit or concession obtained or held by the utility from a municipal or other public authority beyond the money, if any, paid to the municipality or public authority as consideration for that franchise, licence, permit or concession, together with necessary and reasonable expenses in procuring the franchise, licence, permit or concession.

*Partial relief*

**89** On an application under this Act, the commission may make an order granting the whole or part of the relief applied for or may grant further or other relief, as the commission considers advisable.

**LIST OF APPEARANCES**

G.A. FULTON, Q.C.	Commission Counsel
C.B.JOHNSON, Q.C. T. AHMED	Terasen Gas Inc. Terasen Gas (Vancouver Island) Inc. Terasen Gas (Whistler) Inc.
R.B. WALLACE	Joint Industry Electricity Steering Committee
C. WEAVER	Commercial Energy Consumers of BC
E. KUNG L. WORTH	British Columbia Old Age Pensioners Organization ("BCOAPO") Active Support Against Poverty B.C. Coalition of People with Disabilities Council of Seniors' Organizations of B.C. End Legislated Poverty Federated Anti-Poverty Groups of B.C. Tenants' Rights Action Coalition
D. BURSEY	Industrial Customer Group, comprising Certainteed Gypsum Canada Inc., Domtar Pulp and Paper Products Inc., Federated Co-operatives Ltd., Teck Metals Ltd., Weyerhaeuser Company Ltd. and Zellstoff Celgar Limited Partnership
R.J. McDONELL	FortisBC Inc.
C. DONOHUE	Pacific Northern Gas Ltd.

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E. Cheng	Commission Staff
F.Metcalf	Contract Staff

Court Reporters	Allwest Reporting Ltd.
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**LIST OF PANELS**

**Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc., Terasen Gas (Whistler) Inc**

**PANEL 1 – Company and Policy Panel**

RANDY JESPERSEN	President and Chief Executive Officer
SCOTT THOMPSON	Vice President, Regulatory Affairs
ROGER DALL'ANTONIA	Vice President, Treasurer

**PANEL 2 - Expert Opinion on a Benchmark Fair Return**

JAMES H. VANDER WEIDE, PhD	Duke University
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**PANEL 3 - Expert Opinion on Capital Markets with Company View**

DONALD A. CARMICHAEL, MBA	Financial Consultant
ROGER DALL'ANTONIA	Vice President, Treasurer

**PANEL 4 - Expert Opinion on a Benchmark Fair Return**

KATHLEEN C. MCSHANE, MBA, CFA	President, Foster Associates Inc.
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**The Joint Industry Electricity Steering Committee, the Commercial Energy Consumers Association of British Columbia and the British Columbia Old Age Pensioners Organization**

LAURENCE G. BOOTH, DBA	University of Toronto
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IN THE MATTER OF  
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

Terasen Gas Inc.  
Terasen Gas (Vancouver Island) Inc. and  
Terasen Gas (Whistler) Inc.  
collectively the "Terasen Utilities"  
Return on Equity and Capital Structure Application

**EXHIBIT LIST**

<b>Exhibit No.</b>	<b>Description</b>
<i>COMMISSION DOCUMENTS</i>	
A-1	Letter dated May 21, 2009 appointing the Commission Panel for the review of the Terasen Utilities Application for a Return on Equity and Capital Structure Application
A-2	Letter dated May 21, 2009 Preliminary Regulatory Timetable, Notice of Procedural Conference and Written Public Hearing.
A-2-1	Submitted at hearing September 28, 2009 Monthly Price Report - Canadian Natural Gas Focus dated September 2009
A-2-2	Submitted at hearing September 28, 2009 Newspaper article in the Vancouver Sun from September 2 <sup>nd</sup>
A-2-3	Submitted at hearing September 29, 2009 Recalculated ROE without any adjustments
A-2-4	Submitted at hearing September 30, 2009 NATIONAL BANK FINANCIAL, SEPTEMBER 14, 2009 Corporate Indicative Issuance Spreads based on Government of Canada Yield Curve
A-2-5	Submitted at hearing October 1, 2009 Article entitled "How did economists get it so wrong" by Paul Krugman from the New York Times September 6, 2009
A-3	Letter dated June 9, 2009 Regulatory Timetable

<b>Exhibit No.</b>	<b>Description</b>
A-4	Letter dated June 24, 2009 – Reasons for Decision for Interim rate Relief
A-5	Letter dated June 29, 2009 BCUC IR No. 1 to Terasen Utilities
A-6	Letter dated July 31, 2009 BCUC IR No. 2 to Terasen Utilities
A-7	Letter dated September 2, 2009 Commission Panel Information Request No. 1 to Terasen Utilities
A-8	Letter dated September 3, 2009 Information Request No. 1 on the Evidence of Dr. Laurence Booth
A-9	Letter dated September 21, 2009 – Opening Statement
A-10	Letter dated October 27, 2009 – Oral Phase of Argument
A-11	Letter dated November 16, 2009 – Oral Phase of Argument
A-12	Letter dated November 18, 2009 - Oral Phase of Argument

*APPLICANT DOCUMENTS TERASEN UTILITIES*

B-1	Letter dated May 15, 2009 Terasen Utilities application for Return on Equity and Capital Structure.
B-2	Letter dated June 18, 2009 Terasen Utilities Reply Comments on Interim Relief
B-3	Letter dated July 20, 2009 Response to BCUC IR No. 1
B-3-1	Response to BCUC IR No. 1 Attachments Parts 1 of 5
B-3-2	Response to BCUC IR No. 1 Attachments Parts 2 of 5
B-3-3	Response to BCUC IR No. 1 Attachments Parts 3 of 5
B-3-4	Response to BCUC IR No. 1 Attachments Parts 4 of 5
B-3-5	Response to BCUC IR No. 1 Attachments Parts 5 of 5
B-4	Letter dated July 20, 2009 Terasen Utilities Response to CEC IR No. 1

<b>Exhibit No.</b>	<b>Description</b>
B-5	Letter dated July 20, 2009 Terasen Utilities Response to JIESC-BCOAPO-CEC IR No. 1
B-6	Letter dated August 13, 2009 Terasen Utilities Response to BCUC IR No. 2
B-7	Letter dated August 13, 2009 Terasen Utilities Response to JIESC-BCOAPO-CEC IR No. 2
B-8	Letter dated August 13, 2009 Terasen Utilities Response to CEC IR No. 2
B-9	Letter dated September 3, 2009 Terasen Utilities IRs on the Evidence of Dr. L. Booth
B-10	Letter dated September 21, 2009 Erratum Response to IR No. 1.24.2 - page 80 of Exhibit B-3 correcting the table and highlighting the affected cells.
B-11	Letter dated September 21, 2009 Response to Commission Panel IR No. 1
B-12	Letter dated September 21, 2009 Terasen Utilities Witness Panels and Direct Testimony
B-12-1	Letter dated September 21, 2009 REPLACEMENT with corrections - Terasen Utilities Witness Panels and Direct Testimony
B-13	Letter dated September 24, 2009 Opening Statement of R.L. (Randy) Jespersen, CEO on Behalf of the Terasen Utilities
B-14	Submitted at hearing September 28, 2009 Speech from the Throne August 25, 2009
B-15	Submitted at hearing September 28, 2009 Response from the Terasen Gas Inc. revenue requirement application to a Commission Staff Request 2.31.2
B-16	Submitted at hearing September 28, 2009 Full BC Hydro Service Plan, the August, 2009 update
B-17	Submitted at hearing September 29, 2009 Moody's A-rated and Baa-rated Utility Bond Yields
B-18	Submitted at hearing September 29, 2009 common equity component of Fortis
B-19	Submitted at hearing September 30, 2009 Consumer Prices Consensus Economics, Consensus Forecasts, Long-Term Forecasts
B-20	Submitted at hearing October 1, 2009 TGI 2005 ROE Exhibit B-3, Response to BCUC IR 74.1, Appendix 74.1

## APPENDIX F

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Exhibit No.	Description
B-21	Submitted at hearing October 1, 2009 (PAGES 193 AND 194 FROM FINANCIAL THEORY AND CORPORATE POLICY BY COPELAND AND WESTON WITH ATTACHED TRANSCRIPT PAGES 795 AND 796 FROM 2005
B-22	Submitted at hearing October 1, 2009 PAPER BY DR. BOOTH ENTITLED "CAPITAL MARKET DEVELOPMENTS IN THE POST-OCTOBER 1987 PERIOD: A CANADIAN PERSPECTIVE
B-23	Submitted at hearing October 1, 2009 COLOURED GRAPH, WITH PAGES 790 TO 804 FROM TGI-TGVI ROE HEARING, NOVEMBER 17, 2005, VOLUME 5
B-24	Submitted at hearing October 1, 2009 TAB 2, APPENDIX A, RISK-ADJUSTED EQUITY MARKET RISK PREMIUM TEST
B-25	Submitted at hearing October 1, 2009 TWO TABLES, BOTH HEADED "EXHIBIT, COMPARISON OF DR. BOOTH'S COST OF EQUITY RESULTS TO THE YIELDS ON MOODY'S A-RATED AND BAA-RATED UTILITY BONDS"
B-26	Submitted at hearing October 1, 2009 SCHEDULE 12, SPREADS SINCE 1990, WITH ATTACHED PAGE 15
B-27	Submitted at hearing October 1, 2009 70 REFERENCE: APPENDIX B, PAGE 1, LINES 18-25", PAGE 78
B-28	Letter dated October 20, 2009 Submission of Outstanding Undertakings

### *INTERVENOR DOCUMENTS*

C1	<b>BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION (BCOAPO)</b> - Letter dated May 29, 2009 filing request by Leigha Worth for Intervenor Status
C1-2	Letter dated June 15, 2009 via Email BCOAPO submissions on interim relief
C2-1	Changed to Interested Party
C3-1	<b>COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)</b> VIA EMAIL - dated June 4, 2009, 2009 filing request by Christopher Weafer for Intervenor Status
C3-2	Letter dated June 12, 2009 CEC submissions on interim relief



<b>Exhibit No.</b>	<b>Description</b>
C3-3	Letter dated July 07, 2009 CEC information Request No. 1
C3-4	Letter dated July 31, 2009 CEC information Request No. 2
C4-1	<b>LOUELLA VINCENT VIA EMAIL</b> - dated May 31, 2009, 2009 filing request for Intervenor Status
C5-1	<b>BC HYDRO (BCH) ONLINE REGISTRATION</b> - dated June 5, 2009, filing request for Intervenor Status
C6-1	<b>FORTIS BC (FBC) ONLINE REGISTRATION</b> - dated June 5, 2009, filing request by Dennis Swanson for Intervenor Status
C6-2	Removed exhibit: under Arguments
C7-1	<b>MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES (MEMPR)</b> letter dated June 8, 2009, filing request by Duane Chapman for Intervenor Status
C8-1	<b>VANCOUVER ISLAND GAS JOINT VENTURE (VIGJV)</b> letter dated June 5, 2009, filing request by Karl Gustafson for Intervenor Status
C9-1	<b>ZELLSTOFF CELGAR (zc)</b> letter dated June 8, 2009, filing request by Brian Merwin for Intervenor Status
C9-2	Letter dated June 8, 2009 Via Email ZC submissions on interim relief
C10-1	<b>PACIFIC NORTHERN GAS (PNG) - VIA EMAIL</b> letter dated June 8, 2009 filing request by Craig Donohue for Intervenor Status
C11-1	<b>JOINT INDUSTRY ELECTRICITY STEERING COMMITTEE (JIESC)</b> letter dated June 8, 2009 filing request by Brian Wallace for Intervenor Status
C11-1-1	Submitted at hearing September 30, 2009 EXHIBIT C11-11, AMENDED Page 5 CIA- Canadian Institute of Actuaries data Exhibits of Dr.Vander Weide taken from CIA
C11-2	Letter dated June 8, 2009 JIESC submissions on interim relief
C11-3	Letter dated July 6, 2009 - <b>VIA EMAIL</b> Joint Information Request on behalf of JIESC, BCOAPO and CEC
C11-4	Letter dated July 30, 2009 - <b>VIA EMAIL</b> Joint Information Request 2 on behalf of JIESC, BCOAPO and CEC
C11-5	Letter dated August 2009 JIESC submission Evidence of Laurence D. Booth

**APPENDIX F**

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<b>Exhibit No.</b>	<b>Description</b>
C11-6	Letter dated September 15, 2009 Response of Dr. Booth to BCUC IR No. 1
C11-7	Letter dated September 15, 2009 Dr. Booth responses to TGI IR No.1
C11-8	Submitted at hearing September 28, 2009 Excerpt from BC Hydro Service Plan 2009/10 - 2011/12
C11-9	Submitted at hearing September 28, 2009 Excerpt from BC Hydro Service Plan 2009/10 - 2011/12 August 2009 Update
C11-10	Submitted at hearing September 29, 2009 Alberta EUB Decision Generic Cost of Capital
C11-11	Submitted at hearing September 29, 2009 JIESC materials for cross-examination of Terasen panel number two
C11-12	Submitted at hearing September 30, 2009 Scotia Bank Group Global Economic Research Weekly Trends from September 25, 2009
C11-13	Submitted at hearing September 30, 2009 Scotia Bank Group Global Economic Research – Global Forecast Update September 3, 2009
C11-14	Submitted at hearing September 30, 2009 Excerpt of Direct Testimony of James M Coyne on Behalf of ATCO Utilities ET AL November 20, 2008 in Alberta Utilities Commission 2009 Generic Cost of Capital Proceeding
C11-15	Submitted at hearing September 30, 2009 Bank of Montreal Capital Markets report on Fortis Dated June 11, 2009
C11-16	Submitted at hearing October 1, 2009 ARTICLE FROM <i>THE JOURNAL OF FINANCE</i> , VOL. XLVI, NO. 4, SEPTEMBER 1991 ENTITLED "LIQUIDITY, MATURITY AND THE YIELDS ON U.S. TREASURY SECURITIES BY Y. AMIHUD AND H. MENDELSON
C11-17	Letter received October 14, 2009 JIESC/CEC/BCOAPO joint submission Dr. Booth's Responses to Undertakings
C12-1	<b>TECK COAL LTD (TC) – VIA EMAIL</b> Letter Dated July 06, 2009 filing by J. David Newlands to register as Intervenor

<b>Exhibit No.</b>	<b>Description</b>
C13-1	<b>INDUSTRIAL CUSTOMER GROUP (ICG) – VIA EMAIL</b> Letter Dated July 24, 2009 filing by and for David Bursey, Katie Seymour and Harold Todd to register as Intervenor (Certainfeed Gypsum Canada Inc., Domtar Pulp and Paper Products Inc., Federated Co-operatives Ltd., Teck Metals Ltd., Weyerhaeuser Company Ltd., Zellstoff Celgar Limited Partnership)

*INTERESTED PARTY DOCUMENTS*

D-1	<b>CENTRAL HEAT DISTRIBUTION (CHD)</b> Letter Dated May 22, 2009 John Barnes filing to register as Interested Party
D-2	<b>COPE 378 (COPE) ONLINE REGISTRATION</b> - dated June 5, 2009, filing request by Kevin Smyth to register as Interested Party
D-3	<b>BP CANADA ENERGY COMPANY ONLINE REGISTRATION</b> - dated June 3, 2009, filing request by Cheryl Worthy to register as Interested Party
D-4	<b>BRITISH COLUMBIA TRANSMISSION CORPORATION (BCTC) ONLINE REGISTRATION</b> - dated June 18, 2009, filing request by Gordon Doyle to register as Interested Party
D-5	<b>ACCESS GAS SERVICES INC. – ONLINE REGISTRATION</b> dated July 20, 2009 filing request by Tom Dixon for Interested party status

