BEFORE THE

TENNESSEE REGULATORY AUTHORITY

In Re: Petition of Chattanooga Gas Company	)	
To Place Into Effect a Revised Natural Gas Tariff	)	Docket No. 09-00183

electronically filed 4/5/10 at 4:15pm

REBUTTAL TESTIMONY

OF

ROGER A. MORIN

ON BEHALF OF

CHATTANOOGA GAS COMPANY

April 2010

Q. PLEASE STATE YOUR NAME, ADDRESS, AND OCCUPATION.

A. My name is Dr. Roger A. Morin. My business address is Georgia State University, Robinson College of Business, University Plaza, Atlanta, Georgia, 30303. I am Emeritus Professor of Finance at the College of Business, Georgia State University and Professor of Finance for Regulated Industry at the Center for the Study of Regulated Industry at Georgia State University. I am also a principal in Utility Research International, an enterprise engaged in regulatory finance and economics consulting to business and government.

Q. DID YOU FILE DIRECT TESTIMONY IN THIS PROCEEDING ON BEHALF OF THE CHATTANOOGA GAS COMPANY?

A. Yes, I did.

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR REBUTTAL TESTIMONY.

A. I have been asked by Chattanooga Gas Company ("CGC" or the "Company") to provide rebuttal testimony to Mr. Klein's rate of return testimony filed on behalf of the Tennessee Attorney General Consumer Advocate and Protection Division.

Q. PLEASE SUMMARIZE MR. KLEIN'S RATE OF RETURN RECOMMENDATION.

A. In determining CGC's return on common equity capital ("ROE"), Mr. Klein applies a DCF analysis to AGL Resources, Inc. ("AGL") and a sample of seven natural gas distributors ("LDCs") and a CAPM analysis to the same sample of 7 LDCs. Based on the results of these analyses, he recommends a ROE of only 9.5% on CGC's common equity capital and a mere 9.0% if the Company's proposed Adjustment and Usage Adjustment mechanism is approved.

Q. DO YOU HAVE ANY GENERAL COMMENTS ON MR. KLEIN'S TESTIMONY?

A. My general reaction is that Mr. Klein's recommended 9.5% ROE for CGC lies outside the zone of reasonableness and well outside the zone of currently authorized rates of return for natural gas utilities in the United States, and, as such, is difficult to take seriously. Mr. Klein's ROE recommendation of only 9.5%, if ever adopted, would result in one of the lowest ROE awards for a natural gas distribution utility in the country. Moreover, Mr. Klein's recommended ROE lies well outside the zone of his own comparable companies' authorized ROEs. These are clear indications that his ROE recommendation for CGC is too low. My next reaction was that Mr. Klein's implementation of both the DCF and CAPM analyses must therefore be flawed and I proceeded to investigate the specific details of Mr. Klein's methodologies

Q. WHAT ARE THE BASIC CONCLUSIONS OF YOUR REBUTTAL TO MR. KLEIN'S COST OF EQUITY TESTIMONY?

A. Mr. Klein seriously understates CGC's required ROE. Mr. Klein employs inappropriate model inputs throughout his analyses, which cause him to recommend returns that are below investors' required returns. The basis of his recommendation is unclear. Several of his results, namely his CAPM and AGL-specific results are barely above current bond yields and should be dismissed. A proper application of cost of capital methodologies would give results substantially higher than those that he obtained.

Q. PLEASE SUMMARIZE YOUR SPECIFIC CRITICISMS OF MR. KLEIN'S TESTIMONY.

A. I have eleven specific criticisms:

1. Return Recommendation Out of The Mainstream. Mr. Klein's recommended return is outside the zone of currently allowed ROEs for natural gas in the United States and for his own sample of companies. The average allowed ROE for gas utilities in the years 2008 and 2009 was 10.3% and 10.2%, respectively. These authorized returns exceed by a significant margin Mr. Klein's 9.5% recommended return for CGC, a riskier than average natural gas utility on account on its relatively small size. Furthermore, the currently authorized average ROE for Mr. Klein's own comparable companies is 10.5%, which again is higher than his recommended ROE for CGC.

2. Flotation Costs. Mr. Klein's ROE estimates of equity costs are understated by approximately 30 basis points to the extent that flotation costs are ignored. As a result, a legitimate stockholder expense is left unrecovered

3. DCF Dividend Yield Component. Mr. Klein's DCF formulation understates the required ROE because it mis-specifies the DCF model by relying on the spot dividend yield rather than on the expected dividend yield. Use of the proper DCF functional form raises his estimate by approximately 30 basis points.

4. Quarterly Timing of Dividends. Mr. Klein's dividend yield component is understated by 20 basis points because it ignores the time value of quarterly dividend payments.

5. DCF Growth Rates. Mr. Klein understates the growth rates anticipated by investors in his DCF analysis, resulting in a 45 basis points understatement of his DCF estimates.

6. CAPM Risk-Free Rate. Mr. Klein's CAPM results are severely understated because, among other reasons, his proxy for the risk-free rate is inappropriate. The correct proxy for the risk-free rate in the CAPM is the return on long-term Treasury bonds, and not the yield on short-term 90-day U.S. Treasury Bills or on intermediate-term Treasury notes.

7. CAPM and the Empirical CAPM (ECAPM). The plain vanilla version of the CAPM used by Mr. Klein understates the Company's required return on equity by another 50 basis points.

8. Capital Structure/ROE Adjustment. Mr. Klein did not adjust his recommended ROE to reflect the fact that he imputes to CGC a capital structure with more debt than the average capital structure of his comparable group of gas utilities. From this correction alone, such a required adjustment raises his ROE recommendation from 9.50% to 10.03% based on published empirical studies.

9. Alignment and Usage Adjustment. Mr. Klein's 50 basis points downward return adjustment to account for the risk-reducing effects of the company's proposed Alignment And Usage Adjustment Tariff is vastly overstated.

10. Size Effect and the Stand-alone Principle. Mr. Klein's ROE recommendation ignores the Company's small relative size and its upward effect

on investor returns. Moreover, Mr. Klein's justification for doing so violates the venerable stand-alone principle of financial economics.

I also find that Mr. Klein's criticisms of my testimony are without foundation and should be disregarded.

1. ALLOWED RETURNS

Q. IS MR. KLEIN'S RATE OF RETURN RECOMMENDATION COMPATIBLE WITH CURRENTLY ALLOWED RETURNS IN THE NATURAL GAS UTILITY INDUSTRY?

A. No, not at all. Allowed returns, while certainly not a precise indication of a particular company's required return on equity capital, are nevertheless important determinants of investor growth perceptions and investor expected returns. They also serve to provide some perspective on the validity and reasonableness of Mr. Klein's recommendation.

The average allowed return in the gas utility industry in 2008 and 2009 as reported by Regulatory Research Associates in its most recent quarterly survey of regulatory decisions was 10.3% and 10.2%, respectively, for the average risk utility. These ROE awards exceed by a substantial margin Mr. Klein's recommended ROE of 9.5% for CGC, an above average risk utility in view of its small relative size.

I have also examined the ROEs currently allowed for the seven natural gas utilities that are owned by or otherwise included in Mr. Klein's sample group as reported in C.A. Turner Utility Reports survey for March 2010. The currently authorized average ROE for Mr. Klein's sample, shown in Table 1 below, is

nearly 10.5%:

TABLE 1 ALLOWED ROEs

Atmos Energy	11.71
New Jersey Natural Gas Company	10.30
Northwest Natural Gas Company	10.20
Piedmont Natural Gas Company	10.60
South Jersey Gas Company	10.00
Southwest Gas Company	10.20
Washington Gas Light Corp.	10.20
AVERAGE	**10.46%**

Source: C.A. Turner Utility Reports 03/10

In short, Mr. Klein's recommendation lies outside the mainstream of currently allowed rates of return for Mr. Klein's comparable companies, and outside the mainstream of recently authorized returns for natural gas utilities in Unites States.

2. FLOTATION COSTS

Q. WHAT FLOTATION COST TREATMENT DID MR. KLEIN RECOMMEND IN THIS CASE?

A. Mr. Klein's common equity return recommendation does not include any allowance whatsoever for issuance expense. I am surprised by Mr. Klein's reluctance to accept flotation costs. The flotation cost allowance to the cost of common equity capital is routinely discussed and applied in most corporate finance textbooks. As I discuss below, total flotation costs amount to 5%, which in turn amount to approximately 30 basis points of ROE for CGC. Mr. Klein has thus understated CGC's ROE by 30 basis points as a result of this omission alone.

Q. WHAT DOES MR. KLEIN HAVE TO SAY ON FLOTATION COSTS, AND HOW DO YOU RESPOND?

A. Mr. Klein's position on flotation costs is puzzling and inconsistent, given his discussion on page 16 of his testimony where he cites the actual direct flotation costs incurred by AGL in recent stock sales to the public in the amount of 3.0% - 3.5%. This estimate is quite consistent with my own estimate of 3% for utility common stock issues in general, as discussed in Appendix B of my testimony. So, we agree on the magnitude of the direct component of flotation cost. Adding the indirect component of flotation cost, namely, the market pressure component, would add another 1% - 2% to the 3.0% estimate for a total allowance of 5%. Mr. Klein correctly points out that accounting for these costs requires a 30 basis points increase in ROE (page 16 line 10). However, Mr. Klein despite his acceptance of the validity of the flotation cost adjustment, discounts it to the point of eliminating the adjustment. He does not follow through on this position on the grounds that most of AGL's equity funding is derived from retained earnings.

Q. DO YOU AGREE WITH MR. KLEIN'S POSITION?

A. No, I do not. Mr. Klein recommends that no flotation cost allowance at all be included in his ROE estimates because most of AGL's equity funding is derived from retained earnings and not from public stock issues. The conventional flotation cost adjustment formula used in my direct testimony and recommended in most finance textbooks deals with the fact that flotation costs are incurred only when new stock is sold, and not when earnings are retained. This is done by applying the flotation adjustment only to the dividend yield of the DCF formula, and

not to the growth component. The larger the fraction of earnings retained, the higher the growth rate, the lower the dividend yield component, and the smaller the flotation costs adjustment. In other words, larger retained earnings result in lower flotation cost adjustments as the costs are postponed into the future. The numerical examples discussed in Appendix B of my direct testimony show that not only is the flotation adjustment always required each and every year, whether or not new stock issues are sold in the future, but that the allowed return on equity must be earned on total equity, including retained earnings, for investors to earn the cost of equity.

3. DCF FUNCTIONAL FORM

Q. DR. MORIN, DO YOU HAVE ANY COMMENT ON THE FUNCTIONAL FORM OF THE DCF MODEL USED BY MR. KLEIN?

A. Yes, I do. I disagree with Mr. Klein's dividend yield calculation in his DCF analysis because he failed to multiply the ***spot dividend yield*** by one plus the expected growth rate (1 + g) as clearly required by the annual DCF model. This flaw understates the return expected by the investor by approximately 30 basis points. For example, for a spot dividend yield of 5% and a growth rate of 6%, the correct expected dividend yield is 5.0% times (1 + 0.06) which equals 5.3% and not 5.0%. The correct dividend yield to employ is the ***expected dividend yield***, here 5% times (1 + .06), which equals 5.3%.

One fundamental assumption of the annual DCF model is that dividends are received by investors annually at the end of each year and that the first

dividend is to be received by the investor one year from now. Since the appropriate dividend to use in the annual DCF model is the prospective dividend one year from now, rather than the current dividend yield, Mr. Klein's approach understates the proper dividend yield. This creates a downward bias in his dividend yield component, and underestimates the return on equity by approximately 30 basis points. Incidentally, I know of very few rate of return experts, if any, that utilize the raw spot dividend yield in implementing the DCF model.

4. QUARTERLY DCF MODEL

Q. PLEASE COMMENT ON THE USE OF THE ANNUAL DCF MODEL.

A. The DCF model used by Mr. Klein assumes that dividend payments are made annually at the end of the year and are increased once a year, while most utilities in fact pay dividends on a quarterly basis. Since the stock price fully reflects the quarterly payment of dividends, it is essential that the DCF model used to estimate equity returns also reflect the actual timing of quarterly dividends. In the same way that bond yield calculations are routinely adjusted to reflect semiannual interest payments, it stands to reason that stock yields should be similarly adjusted for quarterly compounding. It should be pointed out that the quarterly DCF model uses the exact same assumptions as the annual DCF model, but refines the latter so as to capture the exact timing of cash flows received by the investor. Since the stock price employed in the DCF model reflects a quarterly stream of dividends, it stands to reason that the quarterly nature of dividend payments must be explicitly recognized. Cash flows, that is,

dividends, are actually received quarterly. Thus, a quarterly model should be applied. This is because investors set prices based on the present value of the cash flows that they receive. Since investors receive dividends quarterly, a quarterly model best matches the investor's expectations to the prices set in the market place and those prices reflect the quarterly receipt of cash flows. By failing to recognize the quarterly nature of dividend payments in his DCF computation, Mr. Klein understates the required return on equity capital by about 20 basis points.

Contrary to Mr. Klein's statement on page 16 lines 15-18 that the quarterly adjustment decreases the cost of equity, the adjustment increases the cost of equity. For example, a bank rate on deposits which does not take into consideration the timing of the interest payments understates the true yield of the investment if interest payments are received more than once a year. The same is true for stocks.

5. DCF GROWTH RATES

Q. WHAT GROWTH RATES DID MR. KLEIN EMPLOY IN HIS DCF ANALYSES?

A. Mr. Klein relies on both the analysts' consensus growth forecasts contained in the Zacks Investment Research Web site and the Value Line growth forecasts. I agree with Mr. Klein's use of analysts' growth forecast as proxies for expected growth in the DCF model. However, these growth rates are stale and understated. Table 2 below displays Mr. Klein's original growth estimates along side current estimates of the same growth rates.

Table 2 Mr. Klein's DCF Growth Rates

	Company Name	Original Value Line Earnings Growth (1)	Current Value Line Earnings Growth (2)	Original Analysts Forecasts (3)	Current Analysts Forecasts (4)
1	Atmos Energy	1.5	4.0	5.0	5.0
2	New Jersey Resources	7.0	5.5		7.0
3	Northwest Nat Gas	6.5	5.0	6.0	5.7
4	Piedmont Nat Gas	3.5	7.0	7.0	6.3
5	South Jersey Industries	8.0	5.5	9.8	11.6
6	Southwest Gas	5.0	6.0	7.0	7.0
7	WGL Holdings	3.0	4.0	5.0	
	AVERAGE	**4.9**	**5.3**	**6.6**	**7.1**

Source:
Column 1 and 3: Klein Exhibit 3
Column 2: Value Line Investment Analyzer 2/2010
Column 4: Zacks Investment Research Web Site

The Value Line growth rates are understated by 40 basis points (5.3 – 4.9 = 0.4), and the analysts consensus growth rates by 50 basis points (7.1 – 6.6 = 0.5), for an average error of 45 basis points. In short, Mr. Klein's DCF estimates are understated by 45 basis points from this flaw alone.

6. CAPM RISK-FREE RATE

Q. DOES MR. KLEIN EMPLOY A CAPM ESTIMATE?

A. Yes, he does. Starting on pages 11-13, Mr. Klein performs a CAPM analysis.

Q. WHAT INPUTS DOES MR. KLEIN USE IN HIS CAPM ANALYSIS?

A. Three inputs are required in order to implement the CAPM: the risk-free rate, the beta risk measure, and the Market Risk Premium ("MRP"). For the risk-free rate, Mr. Klein uses a range of 0.2% - 2.75%. For beta, Mr. Klein uses a range of 0.60 – 0.75, based on Value Line beta estimates for his sample of gas companies. For the MRP, Mr. Klein uses a range of 7.0% - 7.9%, based on the Ibbotson compilation of historical MRP estimate. (See Mr. Klein testimony page 13).

Q. DO YOU AGREE WITH MR. KLEIN'S BETA ESTIMATES?

A. Yes, I do.

Q. DO YOU AGREE WITH THE REMAINDER OF MR. KLEIN'S CAPM ANALYSIS?

A. No, I do not. It is clear at first glance that Mr. Klein's CAPM analysis produces outlandish estimates, as they are in some cases below and in others barely above the cost of debt. His CAPM analysis is flawed for two reasons. First, Mr. Klein's proxy for the risk-free rate is plain wrong. Second, the use of the plain vanilla CAPM understates the cost of capital. I shall now discuss each of these flaws in turn.

Q. DR. MORIN, WHAT IS THE APPROPRIATE PROXY FOR THE RISK-FREE RATE IN A CAPM ANALYSIS?

A. The principal reason why Mr. Klein's analysis produces outlandish results is that he relies on the wrong risk-free rate proxy. The appropriate proxy to use is the current yield on 30-year Treasury bonds which is approximately 4.6% at this

time, and not the yield on 90-day Treasury Bills of 0.2% or the yield on 5-year Treasury Notes of 2.75% used by Mr. Klein on Exhibit 5. In my direct testimony, I discussed why it is appropriate to use the yield on long-term Treasury securities rather than the yield on short-term Treasury Bills. I elaborate on that same point below. Thus, Mr. Klein's CAPM estimates are understated by a range of 1.85% to 4.40% (midpoint of 2.6%) from this error alone, calculated as the difference between the current risk-free rate of 4.6% and Mr. Klein's estimates of 0.2% and 2.75%.

Q. PLEASE COMMENT ON MR. KLEIN'S PROXY FOR THE RISK-FREE RATE IN THE CAPM.

A. In his discussion of the proper risk-free rate proxy in the CAPM on Page 13, Mr. Klein argues that the appropriate proxy for the risk-free rate of return is the yield on 90-day Treasury bills and/or the yield on 5-year Treasury notes, rather than the yield on long-term Treasury bonds. I disagree.

The appropriate proxy for the risk-free rate in the CAPM is the return on long-term Treasury bonds, and not the yield on short-term Treasury bills. This is simply because common stocks are long-term instruments more akin to long-term bonds than to 90-day short-term securities. The expected common stock return is based on very long-term cash flows, regardless of an individual's holding time period. Since common stock is a very long-term investment because the cash flows to investors in the form of dividends last indefinitely, the yield on very long-term government bonds is the best measure of the risk-free rate. Moreover, utility asset investments generally have very long-term useful lives and should

correspondingly be matched with very long-term maturity financing instruments.

On page 12 lines 17-22, Mr. Klein argues that a the yield on long-term Treasury bonds is inappropriate in a CAPM analysis because long-term Treasury bonds are subject to interest rate risk and therefore not risk free. While I agree with Mr. Klein that long-term Treasury bonds possess interest rate risk, this notion is only true if the bonds are sold prior to maturity. A substantial fraction of bond market participants, usually institutional investors with long-term liabilities (pension funds, insurance companies), in fact hold bonds until they mature, and therefore are not subject to interest rate risk. In any event, institutional bondholders neutralize the impact of interest rate changes by matching the maturity of a bond portfolio with the investment planning period, or by engaging in hedging transactions in the financial futures markets. The merits and mechanics of such immunization strategies are well documented by both academicians and practitioners.

As I explained in my Direct Testimony, the ideal proxy for the risk-free rate in the CAPM would have a term to maturity equal to the security being analyzed. Because common equity has an infinite life span, the inflation expectations embodied in its market-required rate of return will be equal to the inflation rate anticipated to prevail over the long-term. Among U.S. Treasury securities, 30-year U.S. Treasury bonds have the longest term to maturity. Therefore, 30-year U.S. Treasury bonds will most closely incorporate within their yield the inflation expectations that influence the prices of common stocks.

7. CAPM AND THE EMPIRICAL CAPM

Q. DO YOU AGREE WITH MR. KLEIN'S USE OF THE RAW FORM OF THE CAPM TO ESTIMATE THE COST OF CAPITAL?

A. No, I do not. I believe that the plain vanilla version of the CAPM should be supplemented by the more refined version of the CAPM. There have been countless empirical tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM. The results of the tests support the idea that beta is related to security returns, that the risk-return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as the predicted CAPM. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. Mr. Klein ignores this important financial literature which reports one of the most well-known results in finance. A CAPM-based estimate of the return on capital underestimates the return required from low-beta securities and overstates the return from high-beta securities, based on the empirical evidence.

The downward-bias is particularly significant for low-beta securities, such as the natural gas utilities used by Mr. Klein in his comparison group. Mr. Klein's CAPM estimates of required equity returns are understated by about 50 basis points as a result of this bias alone.

Q. DR. MORIN, WHAT DO YOU CONCLUDE FROM MR. KLEIN'S CAPM ANALYSIS?

A. Mr. Klein's CAPM results shown on Exhibit 5 are absurd, ranging from 5.34%

to 8.0%. These estimates are barely above, if at all, the cost of debt. This analysis should be accorded very little, if any, weight on the grounds of the aforementioned flaws. The cumulative impact of the aforementioned flaws amount to 310 basis points, that is, an understatement of 260 basis points from the erroneous risk-free rate proxy, and 50 basis points from the inherent understatement of investor return from the plain vanilla CAPM. A correct implementation of the CAPM would produce results that are at least 3% higher.

8. CAPITAL STRUCTURE ADJUSTMENT

Q. HOW DOES MR. KLEIN'S RECOMMENDED CAPITAL STRUCTURE COMPARE TO THAT OF HIS COMPARABLE GROUP AND THE INDUSTRY AVERAGE?

A. Table 3 below displays the common equity ratios of the 7 companies in Mr. Klein's comparable group. The average common equity ratio is 53% inclusive of short-term debt versus his recommended 48% for CGC shown on Exhibit 1. Thus, his recommended capital structure is substantially weaker than that of the comparable group.

Table 3 Common Equity Ratios Mr. Klein's Comparable Group

	Company Name	% Common
1	Atmos Energy	51
2	New Jersey Resources	61
3	Northwest Natural Gas	47
4	Piedmont Natural Gas	54
5	South Jersey Industries	51
6	Southwest Gas	49
7	WGL Holdings	56
	AVERAGE	**53**

Source: AUS Utility Reports 12/2009

Q. DID MR. KLEIN ADJUST HIS RECOMMENDED ROE TO ACCOUNT FOR THE GREATER LEVERAGE HE ASSIGNS TO CGC?

A. No. Mr. Klein should have increased his recommended ROE of 9.5% to reflect the higher relative risk associated with CGC's more leveraged capital structure. It is a rudimentary tenet of basic finance that the greater the amount of financial risk borne by common shareholders, the greater the return required by shareholders in order to be compensated for the added financial risk imparted by the greater use of senior debt financing. In other words, the greater the debt ratio, the greater is the return required by equity investors. Higher risk necessarily means higher return!

Q. WHAT IS THE MAGNITUDE OF THE REQUIRED ADJUSTMENT TO ACCOUNT FOR MR. KLEIN'S MORE LEVERAGED CAPITAL STRUCTURE FOR CGC?

A. Mr. Klein attributes a capital structure for CGC that consists of 48% common

equity, compared to the industry average capital structure that consists of 53% common equity. Therefore, the differential between the common equity component of Mr. Klein's proposed capital structure for CGC and the common equity component of the average capital structure for the industry is 5%.

Several researchers have studied the empirical relationship between the cost of capital, capital-structure changes, and the value of the firm's securities.[1] The results of these studies suggest that when the debt ratio increases from 40% to 50%, required equity returns increase between 34 to 237 basis points. The empirical studies suggest an average increase of 76 basis points, or 7.6 basis points per one percentage point increase in the debt ratio. The theoretical studies suggest an average increase of 138 basis points, or 13.8 basis points per one percentage point increase in the debt ratio. In other words, equity return requirements increase between 7.6 and 13.8 basis points for each increase in the debt ratio by one percentage point, and more recent studies indicate that the upper end of that range is more indicative of the repercussions on required equity returns.

The average equity ratio for Mr. Klein's peer group is 53%, and the equity ratio he imputes to CGC is 48%, a difference of 5%. The above-described research suggests that Mr. Klein should adjust his recommended ROE upward by 38 basis points (7.6 x 5) to 69 basis points (13.8 x 5) to reflect CGC's more leveraged capital structure, with a midpoint of 53 basis points. Had Mr. Klein adjusted his ROE upward by 53 basis points (0.53%) in order to account for the

highly leveraged capital structure he imputes to CGC, his ROE recommendation would have increased from 9.50% to 10.03% from this correction alone.

10. ALIGNMENT AND USAGE ADJUSTMENT

Q. DR. MORIN, DO YOU AGREE WITH MR. KLEIN'S 50 BASIS POINTS DOWNWARD RISK ADJUSTMENT ON ACCOUNT OF THE COMPANY'S PROPOSED ALIGNMENT AND USAGE ("AUA") ADJUSTMENT TARIFF ?

A. No, I do not, it is far too high. Mr. Klein argues that a steep downward ROE adjustment of 50 basis points is required to account for what he considers to be the risk-reducing effect of the AUA mechanism. I seriously disagree with the inclusion of such an adjustment because it has already been reflected in the capital market data (stock prices) on which Mr. Klein relies. In other words, the adjustment is redundant, and Mr. Klein has double-counted its impact.

Most, if not all, natural gas distribution utilities in the industry and in Mr. Klein's sample are under some form of revenue decoupling mechanisms and/or risk-mitigating rate design mechanisms, such as a straight fixed-variable (SFV) design. The approval of adjustment clauses, riders, and risk-mitigating mechanisms by regulatory commissions is widespread and mainstream policy in the natural gas utility business and is already largely embedded in financial data, such as stock prices, bond rating and business risk scores.

Moreover, while adjustment clauses, riders, and cost tracking mechanisms may mitigate (on an absolute basis but not on a relative basis) a portion of the risk and uncertainty related to the day-to-day management of

[1] *See* Roger A. Morin, *The New Regulatory Finance* (2006) Chapter 16 section 16-4 for a summary of the comprehensive and rigorous empirical studies of the relationship between cost of capital and leverage for

CGC's operations, there is another significant factor to consider that works in the reverse direction for CGC, namely the Company's small size. This additional factor, ignored by Mr. Klein, would more than offset the presence of the aforementioned risk-mitigating mechanisms, even if such an adjustment were warranted in the first place.

Q. WHAT IS THE BASIS FOR MR. KLEIN'S DOWNWARD ROE ADJUSTMENT?

A. This number rests on a statistical regression analysis shown on Exhibit 8 which is based on a mere five observations, that is, only four degrees of freedom. Such an analysis is essentially meaningless from a statistical reliability viewpoint. No other foundation, empirical support, studies, or publications are offered to justify this unreasonable adjustment. If Mr. Klein's downward adjustment of 50 basis points was ever adopted, Mr. Klein's recommended ROE of 9.5% would become 9.0%, which is completely outside any reasonable limits of probability and would constitute the lowest allowed ROE that I am aware of in the gas industry.

Q. WHAT ELSE IS WRONG WITH THIS ADJUSTMENT?

A. If we take Mr. Klein's adjustment of 50 basis points at face value and apply it to the utility cost of debt, we end up with an implausible scenario. The yield on utility bonds rated A is approximately 5.9% at this time. If we apply Mr. Klein's downward adjustment of 50 basis points to the yield on utility bonds to account for the risk-reducing effects of the AUA, we end up with a bond yield of 5.4%. The latter yield would almost equal the yield on risk-free Treasury bonds. In

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public utilities.

short, Mr. Klein's downward ROE adjustment of 50 basis points should be rejected by the Commission.

11. SIZE ADJUSTMENT AND THE STAND-ALONE PRINCIPLE

Q. MR. KLEIN CLAIMS THAT NO UPWARD ADJUSTMENT FOR THE COMPANY'S SMALL SIZE IS NECESSARY. IS HE RIGHT?

A. On page 17 lines 6-8 of his testimony, Mr. Klein claims that no upward adjustment is necessary because he views CGC as an inseparable part of AGL. This is incorrect for two reasons. First, it violates the long-standing principle of *stand-alone* in financial economics. This is a recurring theme throughout Mr. Klein's testimony. He claims that CGC functions as a division of AGL, and that only AGL counts, and that I treat CGC as if it was independent of AGL. What Mr. Klein is doing in effect is estimating AGL's cost of capital and not CGC's. In addition, Mr. Klein cannot have it both ways; he performs a ROE analysis for AGL, but then performs a AUA adjustment based on CGC circumstances. This is nonsensical; if you are performing an analysis on AGL, the adoption of a AUA for CGC will have very little, if any, impact.

Stand-Alone Approach

Q. DR. MORIN, COULD YOU DESCRIBE THE STAND-ALONE APPROACH?

A. Under the Stand Alone approach, a subsidiary such as CGC is viewed as an independent operating company, and its cost of equity is inferred as the cost of equity of comparable risk firms. The methodology rests on the basic premise that the required return on an investment depends on its risk, rather than on the parent's financing costs. The identity of the shareholders is immaterial in determining the

equity return. The equity return reflects the risk to which the equity capital is exposed and the opportunity return foregone by the company's shareholders in investments of similar risk.

Q. HOW DOES CGC'S COST OF CAPITAL RELATE TO THAT OF ITS PARENT COMPANY, AGL RESOURCES?

A. CGC should be treated as a separate stand-alone entity, distinct from the parent company AGL because it is the cost of capital for CGC that we are attempting to measure and not the cost of capital for AGL's consolidated activities. Financial theory clearly establishes that the cost of equity is the risk-adjusted opportunity cost to the investor, in this case, AGL. The true cost of capital depends on the use to which the capital is put, in this case CGC's gas utility business. The specific source of funding an investment and the cost of funds to the investor are irrelevant considerations.

The required return on CGC is the return foregone in comparable risk gas utility operations, and is unrelated to the parent's cost of capital. The cost of capital is governed by the risk to which the capital is exposed and not by the source of funds. The identity of the shareholders has no bearing on the cost of equity.

Just as individual investors require different returns from different assets in managing their personal affairs, corporations should behave in the same manner. A parent company frequently invests money in many operating companies of varying sizes and varying risks. These operating subsidiaries pay different rates for the use of investor capital, such as long-term debt capital, because investors

recognize the differences in capital structure, risk, and prospects between subsidiaries. Therefore, the cost of investing funds in an operating utility subsidiary such as CGC is the return foregone on investments of similar risk and is unrelated to the identity of the investor, in this case AGL.

Q. DOES MR. KLEIN VIOLATE THE STAND ALONE APPROACH IN FAILING TO MAKE ANY RETURN ADJUSTMENT TO ACCOUNT FOR CGC'S SMALL SIZE?

A. Yes, he does. On page 17 lines 6-8 of his testimony, Mr. Klein claims that no upward size adjustment is necessary because he views CGC as an inseparable part of AGL. Not only is this is incorrect because it violates the stand-alone principle but also because it ignores the plethora of empirical evidence of the relationship between return and size.

Mr. Klein ignores the fact that CGC's investment risks are higher than those of his sample of gas utilities because of its relatively very small size, understating CGC's ROE by at least 25 basis points as discussed in my direct testimony. Small companies earn different returns than large ones and on average the actual returns of small companies have been higher, a fact that is well documented in the finance literature and is fully discussed in Chapter 6 of my book The New Regulatory Finance and fully discussed in the Ibbotson Valuation 2009 Yearbook referenced by Mr. Klein. The greater risk of small stocks does not fully account for their higher returns over many historical periods. The average small stock premium is very significant over the average stock, more than could be expected by risk differences alone, suggesting that the cost

of equity for small stocks is considerably larger than for large capitalization stocks. In addition to earning the highest average rates of return, small stocks have the highest volatility, as measured by the standard deviation of returns.

CGC has a much smaller revenue and asset base than the companies in Mr. Klein's comparable group. On account of these size-related risks, Mr. Klein should have increased his recommended return by at least 25 basis points in order to recognize CGC's very small size.

Comparable Groups

Q. DO YOU AGREE WITH MR. KLEIN ON THE ISSUE OF COMPARABLE GROUPS?

A. Yes, in part. We both define a virtually identical group of natural gas distribution utilities with some minor differences. However, Mr. Klein disagrees with my group of combination gas & electric utilities as proxies for CGC and dismisses its comparability. I disagree. Given the Company's relatively small size, it is reasonable to postulate that the Company's natural gas distribution business possesses an investment risk profile that is at least as risky as investment-grade combination gas and electric utilities. The latter possess economic characteristics similar to those of natural gas distribution utilities, notwithstanding their larger size. They are both involved in the distribution of energy services products at regulated rates in a cyclical and weather-sensitive market. They both employ a capital-intensive network with similar physical characteristics. They are both subject to rate of return regulation. They have both been granted virtually identical rates of return of common equity by regulators in the last decade.

Because of this similarity, all these utilities are lumped in the same group by Standard and Poor's in defining bond rating benchmarks and assigning business risk scores, further attesting to their risk comparability. Not only are the betas of combination utilities and distribution utilities very similar, but so are their standard deviation of returns, another widely-used measure of risk by investors.

Q. HOW DO YOU RESPOND TO MR. KLEIN'S CRITICISM OF YOUR RISK PREMIUM ANALYS?

A. On page 15-16, Mr. Klein argues that the problem with my risk premium analysis is that utility bond returns and utility stock returns are not independent. To illustrate his point, he provides the following example. If utility bond yields decline due to lower industry risk, utility stock prices will increase because profits are now high. So, according to Mr. Klein, the risk premium for utility stocks will appear to increase even though overall risk has declined. This argument is totally erroneous. What Mr. Klein has failed to recognize is that the increase in utility stock prices will lower the dividend yield component of the DCF return, keeping the risk premium constant. All securities move in tandem in an efficient market. When bond returns decline, so do stock returns, and conversely.

CONCLUSIONS

Q. WHAT DO YOU CONCLUDE FROM MR. KLEIN'S RATE OF RETURN TESTIMONY?

A. The evidence from both the DCF and CAPM frameworks, if implemented properly, is that investors expect substantially higher returns than what Mr. Klein has found. The following table recapitulates the understatements of equity costs

and the principal reasons why Mr. Klein's recommended ROE understates an appropriate ROE for CGC and should be rejected:

ROE Understatements

Source of Error	Basis Points Impact
DCF Results: Understated Dividend Yield	30
DCF Results: Stale Analysts Growth Forecasts	45
DCF Results: Failure to Use Quarterly Timing Adjustment	20
DCF Results: Failure to Include Flotation Costs	30
TOTAL DCF	**125**
CAPM: Use of an Inappropriate Risk-Free Rate	260
CAPM: Empirical CAPM adjustment	50
TOTAL CAPM	**310**

Correction of these errors would increase Mr. Klein's DCF results by 125 basis points, and Mr. Klein's CAPM results by 310 basis points. Moreover, Mr. Klein has failed to account for the higher leverage he imputes to CGC, and as a result his ROE recommendation is understated by another 53 basis points. Moreover, his downward risk adjustment for the AUA rider is far too high and redundant as it is already factored in market data. Finally, Mr. Klein has failed to adjust CGC's required equity return to reflect its smaller size.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does