BEFORE THE

PUBLIC SERVICE COMMISSION OF THE

COMMONWEALTH OF KENTUCKY

IN RE:	**APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES AND TARIFF MODIFICATIONS**	**)** **)** **)** **)**	**DOCKET NO. 2017-00349**

DIRECT TESTIMONY

AND EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE

OFFICE OF THE ATTORNEY GENERAL

J. Kennedy and Associates, Inc.
570 Colonial Park Drive, Suite 305
Roswell, GA 30075

JANUARY 17, 2018

BEFORE THE

PUBLIC SERVICE COMMISSION OF THE

COMMONWEALTH OF KENTUCKY

IN RE:	**APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES AND TARIFF MODIFICATIONS**	**)** **)** **)** **)**	**DOCKET NO. 2017-00349**

TABLE OF CONTENTS

BEFORE THE

PUBLIC SERVICE COMMISSION OF THE

COMMONWEALTH OF KENTUCKY

IN RE:	**APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES AND TARIFF MODIFICATIONS**	**)** **)** **)** **)**	**DOCKET NO. 2017-00349**

DIRECT TESTIMONY OF RICHARD A. BAUDINO

I. QUALIFICATIONS AND SUMMARY

Q. Please state your name and business address.

A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates, Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

Q. What is your occupation and by whom are you employed?

A. I am a consultant with Kennedy and Associates.

Q. Please describe your education and professional experience.

A. I received my Master of Arts degree with a major in Economics and a minor in Statistics from New Mexico State University in 1982. I also received my Bachelor of Arts Degree with majors in Economics and English from New Mexico State in 1979.

I began my professional career with the New Mexico Public Service Commission Staff in October 1982 and was employed there as a Utility Economist. During my employment with the Staff, my responsibilities included the analysis of a broad range of issues in the ratemaking field. Areas in which I testified included cost of service, rate of return, rate design, revenue requirements, analysis of sale/leasebacks of generating plants, utility finance issues, and generating plant phase-ins.

In October 1989, I joined the utility consulting firm of Kennedy and Associates as a Senior Consultant where my duties and responsibilities covered substantially the same areas as those during my tenure with the New Mexico Public Service Commission Staff. I became Manager in July 1992 and was named Director of Consulting in January 1995. Currently, I am a consultant with Kennedy and Associates.

Exhibit No. ___(RAB-1) summarizes my expert testimony experience.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the Office of the Attorney General of the Commonwealth of Kentucky ("AG").

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to address the allowed return on equity for regulated gas distribution operations for Atmos Energy ("Atmos" or "Company"). I will also address certain capital structure issues as well as the cost of long-term and

short-term debt. Finally, I will respond to the Direct Testimony of Dr. James Vander Weide, witness for the Company.

Q. Please summarize your conclusions and recommendations.

A. My conclusions and recommendations are as follows.

First, I recommend that the Kentucky Public Service Commission ("KPSC" or "Commission") adopt a fair rate of return on equity of 8.80% for Atmos Energy. My recommended return on equity ("ROE") is based on a Discounted Cash Flow analysis using a proxy group consisting of gas distribution companies. This is the same proxy group used by Dr. Vander Weide in his Direct Testimony on behalf of Atmos, with one modification. My recommended 8.80% ROE is fully supported by current stock market data and expected growth rates and is consistent with the low interest rate environment that is present today.

Second, I recommend that the commitment and banking fees expenses that Atmos included in its cost of short-term debt be removed and placed into operations and maintenance expenses. I also recommend that the Commission adopt the Company's proposed cost of short-term debt, excluding the commitment and banking fees.

Third, I recommend that an 8.50% long-term debt issue that matures in March 2019 be adjusted downward to reflect the current average long-term utility debt yield. This high cost debt issue will be retired within Atmos' future test period and will likely be replaced by one at much lower cost to ratepayers. I made the assumption

that Atmos would replace this 8.50% debt issue with one that yields 4.0%, reflecting the approximate current average long-term utility debt yield. This lowered Atmos' requested cost of long-term debt from 5.11% to 4.55%.

Fourth, my recommended adjusted weighted cost of capital for Atmos is 6.62%.

Fifth, I recommend that the Commission reject Dr. Vander Weide's recommended 10.3% cost of equity. For reasons that I shall explain in Section IV of my testimony, a cost of equity of 10.3% is overstated, inconsistent with current market required returns, and would result in an excessive revenue requirement for Atmos.

II. REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS

Q. Mr. Baudino, what has the trend been in long-term capital costs over the last few years?

A. Long-term capital costs as measured by the general level of interest rates in the economy have declined over the last few years. Exhibit No. ___(RAB-2) presents a graphic depiction of the trend in interest rates from January 2008 through November 2017. The interest rates shown in this exhibit are for the 20-year U.S. Treasury Bond and the average public utility bond from the Mergent Bond Record. In January 2008, the average public utility bond yield was 6.08% and the 20-year Treasury Bond yield was 4.35%. As of November 2017, the average public utility bond yield was 3.88%, representing a decline of 220 basis points, or 2.20%, from January 2008. Likewise, the 20-year Treasury bond stood at 2.60% in November 2017, a decline of 1.75% (175 basis points) from January 2008.

Bond yields did not change significantly in December 2017. The yield on the 20-Year Treasury bond was 2.60% at the end of December according to data from the Federal Reserve. Moody's Credit Trends reported on December 29, 2017 that the average utility bond yield was 3.81%.

Q. Was there a significant change in Federal Reserve policy during the historical period shown in Exhibit No. ___(RAB-2) that affected the general level of interest rates?

A. Yes. In response to the 2007 financial crisis and severe recession that followed in December 2007, the Federal Reserve ("Fed") undertook a series of steps to stabilize the economy, ease credit conditions, and lower unemployment and interest rates.

These steps are commonly known as Quantitative Easing ("QE") and were implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose of QE was "to support the liquidity of financial institutions and foster improved conditions in financial markets."[1]

QE1 was implemented from November 2008 through approximately March 2010. During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased $1.25 trillion of mortgage-backed securities and $175 billion of agency debt purchases.

QE2 was implemented in November 2010 with the Fed announcing that it would purchase an additional $600 billion of Treasury securities by the second quarter of 2011.[2]

Beginning in September 2011, the Fed initiated a "maturity extension program" in which it sold or redeemed $667 billion of shorter-term Treasury securities and used the proceeds to buy longer-term Treasury securities. This program, also known as "Operation Twist," was designed by the Fed to lower long-term interest rates and support the economic recovery.

---

[1] (http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm).

[2] (http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm)

QE3 began in September 2012 with the Fed announcing an additional bond purchasing program of $40 billion per month of agency mortgage backed securities. The Fed began to pare back its purchases of securities in the last few years. On January 29, 2014 the Fed stated that beginning in February 2014 it would reduce its purchases of long-term Treasury securities to $35 billion per month. The Fed continued to reduce these purchases throughout the year and in a press release issued October 29, 2014 announced that it decided to close this asset purchase program in October.[3]

Q. Has the Fed recently indicated any important changes to its monetary policy?

A. Yes. In March 2016, the Fed began to raise its target range for the federal funds rate, increasing it to 1/4% - 1/2% from 0% - 1/4%. The Fed further increased the target range to 1/2% to 3/4% in a press release dated December 14, 2016. On June 14, 2017, the Fed announced a further increase to 1% - 1 ¼%.

On December 13, 2017 the Fed announced yet another increase to the federal funds rate of ¼%. In its announcement, the Fed stated the following:

> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. Hurricane-related disruptions and rebuilding have affected economic activity, employment, and inflation in recent months but have not materially altered the outlook for the national economy. Consequently, the Committee continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace and labor market conditions will remain strong. Inflation on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook

[3] (http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm)

appear roughly balanced, but the Committee is monitoring inflation developments closely.

In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate to 1-1/4 to 1-1/2 percent. The stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation.

In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. *The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.* (italics added)[4]

Q. Mr. Baudino, why is it important to understand the Fed's actions since 2008?

A. The Fed's monetary policy actions since 2008 were deliberately undertaken to lower interest rates and support economic recovery. The Fed's actions have been successful in lowering interest rates given that the 20-year Treasury Bond yield in June 2007 was 5.29% and the public utility bond yield was 6.34%. The U.S. economy is currently in a low interest rate environment. As I will demonstrate later in my testimony, low interest rates have also significantly lowered investors' required return on equity for the stocks of regulated utilities.

[4] Federal Reserve press release, December 13, 2017 (**https://www.federalreserve.gov/newsevents/pressreleases/monetary20171213a.htm**).

Q. Are current interest rates indicative of investor expectations regarding the future direction of interest rates?

A. Yes. Securities markets are efficient and most likely reflect investors' expectations about future interest rates. As Dr. Morin pointed out in *New Regulatory Finance:*

> "A considerable body of empirical evidence indicates that U.S. capital markets are efficient with respect to a broad set of information, including historical and publicly available information."[5]

Dr. Morin also noted the following:

"There is extensive literature concerning the prediction of interest rates. From this evidence, it appears that the no-change model of interest rates frequently provides the most accurate forecasts of future interest rates while at other times, the experts are more accurate. Naïve extrapolations of current interest rates frequently outperform published forecasts. The literature suggests that on balance, the bond market is very efficient in that it is difficult to consistently forecast interest rates with greater accuracy than a no-change model. The latter model provides similar, and in some cases, superior accuracy than professional forecasts."[6]

The U.S. economy continues to operate in a low interest rate environment. It is important to realize that investor expectations of higher future interest rates, if any, are already embodied in current securities prices, which include debt securities and stock prices.

Moreover, the current low interest rate environment favors lower risk regulated utilities. It would not be advisable for utility regulators to raise ROEs in anticipation of higher interest rates that may or may not occur**.**

---

[5] Morin, Roger A., *New Regulatory Finance*, Public Utilities Reports, Inc. (2006) at 279.

[6] *Ibid* at 172.

Q. How has the increase in interest rates last year affected utility stocks in terms of bond yields and stock prices?

A. Table 1 below tracks movements in the 20-year Treasury bond yield, the Mergent average utility bond yield, and the Dow Jones Utilities Average ("DJUA") from January 2016 through November 2017.

TABLE 1

Bond Yields and DJUA

	20-Year Treasury %	Avg. Utility Bond %	DJUA
2016			
January	2.49	4.62	611.35
February	2.20	4.44	620.70
March	2.28	4.40	668.57
April	2.21	4.16	654.44
May	2.22	4.06	659.44
June	2.02	3.93	716.52
July	1.82	3.70	711.42
August	1.89	3.73	666.87
September	2.02	3.80	668.13
October	2.17	3.90	675.23
November	2.54	4.21	632.67
December	2.84	4.39	645.86
2017			
January	2.75	4.24	668.87
February	2.76	4.25	703.16
March	2.83	4.30	697.28
April	2.67	4.19	704.35
May	2.70	4.19	726.62
June	2.54	4.01	706.91
July	2.65	4.06	726.48
August	2.55	3.92	743.24
September	2.53	3.93	723.60
October	2.65	3.97	753.20
November	2.60	3.88	770.39

Table 1 shows that the 20-year Treasury bond yield was slightly higher in November 2017 than it was in January 2016 before the Fed began raising short-term interest

rates. However, the yield on the Mergent average public utility bond was substantially lower in November 2017 (3.88%) than in January 2016 (4.62%). Similarly, the DJUA was substantially higher in November 2017 (770.39) than it was in January 2016 (611.35). Further, I noted earlier that long-term interest rates did not change significantly in December. The DJUA finished December 2017 at 723.37, somewhat lower than November.

My conclusion from this data is that even though the Federal Reserve has raised short-term interest rates since March 2016, utility bond yields are lower and the DJUA is higher than they were at the beginning of 2016. Utility stocks and bonds have not been adversely affected by the Fed's raising of the federal funds rate.

Q. How does the investment community regard the regulated gas distribution industry as a whole?

A. The Value Line Investment Survey's December 1, 2017 summary report on the Natural Gas Utility industry noted the following:

> Many stocks in Value Line's Natural Gas Utility Industry have been trading at relatively high levels of late. We believe those price movements are attributable partially to improved corporate earnings during 2017, and expectations of more good things in the coming year. A better performance across the financial markets has also provided a boost. It's worth mentioning that several of the equities in our category are favorably ranked for Timeliness. But the main draw here is the attractive dividends, which tend to act like an anchor, so to speak, when the financial markets encounter heightened volatility, which is sometimes the case. Of course, no sector (even the most defensive) is invulnerable.

Q. What do you conclude from the aforementioned quote from Value Line?

A. Utilities in general and gas utilities in particular continue to be safe, solid stock choices for investors. Even with the Federal Reserve slowly increasing short-term interest rates, utilities' prices have made solid gains since the beginning of 2016. It

appears that the Fed will continue a relatively accommodating stance with respect to monetary policy in 2018.

Q. What are the current credit ratings and bond ratings for Atmos Energy?

A. Atmos Energy's current credit ratings are A from Standard and Poor's ("S&P") and A2 from Moody's. These are strong investment grade ratings for the Company.

Q. Please present recent statements to investment analysts from Atmos Energy's December 2017 Analyst Update.

A. Please refer to Exhibit No. ___(RAB-3) for two selected pages from Atmos Energy's December 2017 Analyst Update. I downloaded this document from the Company's web site. Atmos highlighted its "[a]ttractive total return proposition of 8% - 10%", the fact that its earnings are "100% regulated and rate base driven", and its "[h]igh investment-grade credit ratings (A, A2) with ample liquidity." I note that my recommended ROE for Atmos of 8.80% is near the middle of the total return proposition cited in this document from the Company.

III. DETERMINATION OF FAIR RATE OF RETURN

Q. Please describe the methods you employed in estimating a fair rate of return for Atmos.

A. I employed a Discounted Cash Flow ("DCF") analysis using a proxy group of regulated gas distribution utilities. With one adjustment, this is the same group used by Dr. Vander Weide in his Direct Testimony. My DCF analysis is my standard constant growth form of the model that employs four different growth rate forecasts from the Value Line Investment Survey, Yahoo! Finance, and Zacks. I also employed Capital Asset Pricing Model ("CAPM") analyses using both historical and forward-looking data. Although I did not rely on the CAPM for my recommended 8.80% ROE for Atmos, the results from the CAPM tend to support this recommendation.

Q. What are the main guidelines to which you adhere in estimating the cost of equity for a firm?

A. Generally speaking, the estimated cost of equity should be comparable to the returns of other firms with similar risk structures and should be sufficient for the firm to attract capital. These are the basic standards set out by the United States Supreme Court in *Federal Power Comm'n v. Hope Natural Gas Co*., 320 U.S. 591 (1944) and *Bluefield W.W. & Improv. Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

From an economist's perspective, the notion of "opportunity cost" plays a vital role in estimating the return on equity. One measures the opportunity cost of an investment equal to what one would have obtained in the next best alternative. For example, let us suppose that an investor decides to purchase the stock of a publicly

traded electric utility. That investor made the decision based on the expectation of dividend payments and perhaps some appreciation in the stock's value over time; however, that investor's opportunity cost is measured by what she or he could have invested in as the next best alternative. That alternative could have been another utility stock, a utility bond, a mutual fund, a money market fund, or any other number of investment vehicles.

The key determinant in deciding whether to invest, however, is based on comparative levels of risk. Our hypothetical investor would not invest in a particular utility company stock if it offered a return lower than other investments of similar risk. The opportunity cost simply would not justify such an investment. Thus, the task for the rate of return analyst is to estimate a return that is equal to the return being offered by other risk-comparable firms.

Q. What are the major types of risk faced by utility companies?

A. In general, risk associated with the holding of common stock can be separated into three major categories: business risk, financial risk, and liquidity risk. Business risk refers to risks inherent in the operation of the business. Volatility of the firm's sales, long-term demand for its product(s), the amount of operating leverage, and quality of management are all factors that affect business risk. The quality of regulation at the state and federal levels also plays an important role in business risk for regulated utility companies.

Financial risk refers to the impact on a firm's future cash flows from the use of debt in the capital structure. Interest payments to bondholders represent a prior call on the firm's cash flows and must be met before income is available to the common shareholders. Additional debt means additional variability in the firm's earnings, leading to additional risk.

Liquidity risk refers to the ability of an investor to quickly sell an investment without a substantial price concession. The easier it is for an investor to sell an investment for cash, the lower the liquidity risk will be. Stock markets, such as the New York and American Stock Exchanges, help ease liquidity risk substantially. Investors who own stocks that are traded in these markets know on a daily basis what the market prices of their investments are and that they can sell these investments fairly quickly. Many regulated gas distribution utility stocks are traded on the New York Stock Exchange and are considered liquid investments.

Q. Are there any sources available to investors that quantify the total risk of a company?

A. Bond and credit ratings are tools that investors use to assess the risk comparability of firms. Bond rating agencies such as Moody's and Standard and Poor's perform detailed analyses of factors that contribute to the risk of a particular investment. The end result of their analyses is a bond and/or credit rating that reflect these risks.

<u>Discounted Cash Flow ("DCF") Model</u>

Q. Please describe the basic DCF approach.

A. The basic DCF approach is rooted in valuation theory. It is based on the premise that the value of a financial asset is determined by its ability to generate future net cash flows. In the case of a common stock, those future cash flows generally take the form of dividends and appreciation in stock price. The value of the stock to investors is the discounted present value of future cash flows. The general equation then is:

$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \cdots \frac{R}{(1+r)^n}$$

Where: *V = asset value*
R = yearly cash flows
r = discount rate

This is no difference from determining the value of any asset from an economic point of view; however, the commonly employed DCF model makes certain simplifying assumptions. One is that the stream of income from the equity share is assumed to be perpetual; that is, there is no salvage or residual value at the end of some maturity date (as is the case with a bond). Another important assumption is that financial markets are reasonably efficient; that is, they correctly evaluate the cash flows relative to the appropriate discount rate, thus rendering the stock price efficient relative to other alternatives. Finally, the model I typically employ also assumes a constant growth rate in dividends. The fundamental relationship employed in the DCF method is described by the formula:

$$k = {}^{D_1}/_{P_0} + g$$

Where: D_1 *= the next period dividend*
P_0 *= current stock price*
g *= expected growth rate*
k *= investor-required return*

Embodied in this formula, it is assumed that "k" reflects the investors' expected return. Use of the DCF method to determine an investor-required return is complicated by the need to express investors' expectations relative to dividends, earnings, and book value over an infinite time horizon. Financial theory suggests that stockholders purchase common stock on the assumption that there will be some change in the rate of dividend payments over time. We assume that the rate of growth in dividends is constant over the assumed time horizon, but the model could easily handle varying growth rates if we knew what they were. Finally, the relevant time frame is prospective rather than retrospective.

Q. What was your first step in conducting your DCF analysis for Atmos?

A. My first step was to construct a proxy group of companies with a risk profile that is reasonably similar to Atmos. I reviewed the proxy group used by Dr. Vander Weide and found it to be a reasonable basis for estimating the investor required ROE for Atmos.

Q. Did you make any adjustments to the proxy group used by Dr. Vander Weide?

A. Yes. In constructing his proxy group, Dr. Vander Weide excluded companies from his group that were involved in merger activity, a selection criterion that I also use. Since Dr. Vander Weide filed his Direct Testimony, South Jersey Industries, a member of the proxy group, announced a significant $1.5 billion acquisition of

Elizabethtown Gas Company. Given South Jersey Industries' current total capital of $2.5 billion, this acquisition will significantly expand the company and affect its stock price and its dividend and earnings growth prospects. Therefore, I excluded South Jersey Industries from my proxy group.

Q. What was your first step in determining the DCF return on equity for the proxy group?

A. I first determined the current dividend yield, D_1/P_0, from the basic equation. My general practice is to use six months as the most reasonable period over which to estimate the dividend yield. The six-month period I used covered the months from July through December 2017. I obtained historical prices and dividends from Yahoo! Finance. The annualized dividend divided by the average monthly price represents the average dividend yield for each month in the period.

The resulting average dividend yield for the proxy group is 2.37%. These calculations are shown in Exhibit No. ___(RAB-4).

Q. Having established the average dividend yield, how did you determine the investors' expected growth rate for the proxy group?

A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of growth in dividends. The dividend growth rate is a function of earnings growth and the payout ratio, neither of which is known precisely for the future. We refer to a perpetual growth rate since the DCF model has no arbitrary cut-off point. We must estimate the investors' expected growth rate because there is no way to know with absolute certainty what investors expect the growth rate to be in the short term, much less in perpetuity.

For my analysis in this proceeding, I used three major sources of analysts' forecasts for growth. These sources are The Value Line Investment Survey, Zacks, and Yahoo! Finance. This is the method I typically use for estimating growth for my DCF calculations.

Q. Please briefly describe Value Line, Zacks, and Yahoo! Finance.

A. The Value Line Investment Survey is a widely used and respected source of investor information that covers approximately 1,700 companies in its Standard Edition and several thousand in its Plus Edition. It is updated quarterly and probably represents the most comprehensive of all investment information services. It provides both historical and forecasted information on a number of important data elements. Value Line neither participates in financial markets as a broker nor works for the utility industry in any capacity of which I am aware.

Zacks gathers opinions from a variety of analysts on earnings growth forecasts for numerous firms including regulated electric utilities. The estimates of the analysts responding are combined to produce consensus average estimates of earnings growth. I obtained Zacks' earnings growth forecasts from its web site.

Like Zacks, Yahoo! Finance also compiles and reports consensus analysts' forecasts of earnings growth.

Q. Why did you rely on analysts' forecasts in your analysis?

A. Return on equity analysis is a forward-looking process. Five-year or ten-year historical growth rates may not accurately represent investor expectations for future dividend growth. Analysts' forecasts for earnings and dividend growth provide better proxies for the expected growth component in the DCF model than historical growth rates. Analysts' forecasts are also widely available to investors and one can reasonably assume that they influence investor expectations. In this regard, I am in agreement with Dr. Vander Weide.

Q. Please explain how you used analysts' dividend and earnings growth forecasts in your constant growth DCF analysis.

Q. Columns (1) through (5) of Exhibit No.____(RAB-5) show the forecasted dividend, earnings, and retention growth rates from Value Line and the earnings growth forecasts from Yahoo! Finance and Zacks. In my analyses I used four of these growth rates: dividend and earnings growth from Value Line and earnings growth from Zacks and Yahoo! Finance. It is important to include dividend growth forecasts in the DCF model since the model calls for forecasted cash flows. Value Line is the only source of which I am aware that forecasts dividend growth and my approach gives this forecast equal weight with each of the three earnings growth forecasts.

Q. How did you proceed to determine the DCF return on equity for the proxy group?

A. To estimate the expected dividend yield (D_1), the current dividend yield must be moved forward in time to account for dividend increases over the next twelve months. I estimated the expected dividend yield by multiplying the current dividend yield by one plus one-half the expected growth rate.

Exhibit No.___(RAB-5) presents my standard method of calculating dividend yields, growth rates, and return on equity for the proxy group. The DCF Return on Equity Calculation section shows the application of each of four growth rates I used in my analysis to the current group dividend yield of 2.37% to calculate the expected dividend yield. I then added the expected growth rates to the expected dividend yield. In evaluating investor expected growth rates, I use both the average and the median values.

Q. What are the results of your constant growth DCF model?

A. Referring to Exhibit No.____(RAB-5), for the average growth rates the results range from 8.13% to 9.01%, with the average of these results being 8.48%. Using the median growth rates, the results range from 7.68% to 9.20%, with the average of these results being 8.45%.

Capital Asset Pricing Model

Q. Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.

A. The theory underlying the CAPM approach is that investors, through diversified portfolios, may combine assets to minimize the total risk of the portfolio. Diversification allows investors to diversify away all risks specific to a particular company and be left only with market risk that affects all companies. Thus, the CAPM theory identifies two types of risks for a security: company-specific risk and market risk. Company-specific risk includes such events as strikes, management errors, marketing failures, lawsuits, and other events that are unique to a particular firm. Market risk includes inflation, business cycles, war, variations in interest rates,

and changes in consumer confidence. Market risk tends to affect all stocks and cannot be diversified away. The idea behind the CAPM is that diversified investors are rewarded with returns based on market risk.

Within the CAPM framework, the expected return on a security is equal to the risk-free rate of return plus a risk premium that is proportional to the security's market, or non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a security and measures the volatility of a particular security relative to the overall market for securities. For example, a stock with a beta of 1.0 indicates that if the market rises by 15%, that stock will also rise by 15%. This stock moves in tandem with movements in the overall market. Stocks with a beta of 0.5 will only rise or fall 50% as much as the overall market. So with an increase in the market of 15%, this stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more than the overall market. Thus, beta is the measure of the relative risk of individual securities vis-à-vis the market.

Based on the foregoing discussion, the equation for determining the return for a security in the CAPM framework is:

$$K = Rf + \beta(MRP)$$

Where: K = *Required Return on equity*
Rf = *Risk-free rate*
MRP = *Market risk premium*
β = *Beta*

This equation tells us about the risk/return relationship posited by the CAPM. Investors are risk averse and will only accept higher risk if they expect to receive higher returns. These returns can be determined in relation to a stock's beta and the market risk premium. The general level of risk aversion in the economy determines the market risk premium. If the risk-free rate of return is 3.0% and the required return on the total market is 15%, then the risk premium is 12%. Any stock's required return can be determined by multiplying its beta by the market risk premium. Stocks with betas greater than 1.0 are considered riskier than the overall market and will have higher required returns. Conversely, stocks with betas less than 1.0 will have required returns lower than the market as a whole.

Q. In general, are there concerns regarding the use of the CAPM in estimating the return on equity?

A. Yes. There is some controversy surrounding the use of the CAPM.[7] There is evidence that beta is not the primary factor for determining the risk of a security. For example, Value Line's "Safety Rank" is a measure of total risk, not its calculated beta coefficient. Beta coefficients usually describe only a small amount of total investment risk.

There is also substantial judgment involved in estimating the required market return. In theory, the CAPM requires an estimate of the return on the total market for investments, including stocks, bonds, real estate, etc. It is nearly impossible for the

[7] For a more complete discussion of some of the controversy surrounding the use of the CAPM, refer to *A Random Walk Down Wall Street* by Burton Malkiel, pp. 206 - 211, 2007 edition.

analyst to estimate such a broad-based return. Often in utility cases, a market return is estimated using the S&P 500 or the return on Value Line's stock market composite. However, these are limited sources of information with respect to estimating the investor's required return for all investments. In practice, the total market return estimate faces significant limitations to its estimation and, ultimately, its usefulness in quantifying the investor required ROE.

In the final analysis, a considerable amount of judgment must be employed in determining the risk-free rate and market return portions of the CAPM equation. The analyst's application of judgment can significantly influence the results obtained from the CAPM. My past experience with the CAPM indicates that it is prudent to use a wide variety of data in estimating investor-required returns. Of course, the range of results may also be wide, indicating the difficulty in obtaining a reliable estimate from the CAPM.

Q. How did you estimate the market return portion of the CAPM?

A. The first source I used was the Value Line Investment Analyzer, Plus Edition, for November 30, 2017. This edition covers several thousand stocks. The Value Line Investment Analyzer provides a summary statistical report detailing, among other things, forecasted growth rates for earnings and book value for the companies Value Line follows as well as the projected total annual return over the next 3 to 5 years. I present these growth rates and Value Line's projected annual return on page 2 of Exhibit No. ___(RAB-6). I included median earnings and book value growth rates.

The estimated market returns using Value Line's market data range from 8.80% to 9.90%. The average of these market returns is 9.35%.

Q. Why did you use median growth rate estimates rather than the average growth rate estimates for the Value Line companies?

A. Using median growth rates is likely a more accurate method of estimating the central tendency of Value Line's large data set compared to the average growth rates. Average earnings and book value growth rates may be unduly influenced by very high or very low 3 - 5-year growth rates that are unsustainable in the long run. For example, Value Line's Statistical Summary shows both the highest and lowest value for earnings and book value growth forecasts. For earnings growth, Value Line showed the highest earnings growth forecast to be 90.5% and the lowest growth rate to be -26.5%. The highest book value growth rate was 96.5% and the lowest was -26%. None of these levels of growth is compatible with long-run growth prospects for the market. The median growth rate is not influenced by such extremes because it represents the middle value of a very wide range of earnings growth rates.

Q. Please continue with your market return analysis.

A. I also considered a supplemental check to the Value Line projected market return estimates. Duff and Phelps compiled a study of historical returns on the stock market in its 2017 SBBI Yearbook. Some analysts employ this historical data to estimate the market risk premium of stocks over the risk-free rate. The assumption is that a risk premium calculated over a long period is reflective of investor expectations going forward. Exhibit No. ___(RAB-7) presents the calculation of the market returns using the historical data.

Q. Please explain how this historical risk premium is calculated.

A. Exhibit No. ___(RAB-7) shows both the geometric and arithmetic average of yearly historical stock market returns over the historical period from 1926 - 2016. The average annual income return for 20-year Treasury bond is subtracted from these historical stocks returns to obtain the historical market risk premium of stock returns over long-term Treasury bond income returns. The historical market risk premium range is 5.0% - 7.0%.

Q. Did you add an additional measure of the historical risk premium in this case?

A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr. Peng Chen indicating that the historical risk premium of stock returns over long-term government bond returns has been significantly influenced upward by substantial growth in the price/earnings ("P/E") ratio for stocks from 1980 through 2001.[8] Duff and Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the historical risk premium because "it is not believed that P/E will continue to increase in the future." The adjusted historical arithmetic market risk premium is 5.97%, which I have also included in Exhibit No. ___(RAB-7). This risk premium estimate falls near the middle of the market risk premium range.

Q. How did you determine the risk free rate?

A. I used the average yields on the 20-year Treasury bond and five-year Treasury note over the six-month period from June through November 2017. The 20-year and 30-

[8] *2017 SBBI Yearbook*, Duff and Phelps, pp. 10-28 through 10-30.

year Treasury bonds are often used by rate of return analysts as the risk-free rate, but they contain a significant amount of interest rate risk. The five-year Treasury note carries less interest rate risk than the 20-year bond and is more stable than three-month Treasury bills. Therefore, I have employed both securities as proxies for the risk-free rate of return in my forward-looking CAPM analysis in Exhibit No. ___(RAB-6). This approach provides a reasonable range over which the CAPM return on equity may be estimated.

Q. How did you determine the value for beta?

A. I obtained the betas for the companies in the proxy group from most recent Value Line reports. The average of the Value Line betas for the proxy group is 0.73.

Q. Please summarize the CAPM results.

A. For my forward-looking CAPM return on equity estimates, the CAPM results are 7.29% - 7.49%. Using historical risk premiums, the CAPM results are 6.21% - 7.66%.

ROE Conclusions and Recommendations

Q. Please summarize the cost of equity results for your DCF and CAPM analyses.

A. Table 2 below summarizes my return on equity results using the DCF and CAPM for my comparison group of companies.

TABLE 2

ATMOS ENERGY
PROXY GROUP
ROE RESULTS SUMMARY

DCF Results:	
Method 1, Avg. Growth Rates	
- High	9.01%
- Low	8.13%
- Average	8.48%
Method 2, Median Growth Rates	
- High	9.20%
- Low	7.68%
- Average	8.45%
CAPM:	
- 5-Year Treasury Bond	7.29%
- 20-Year Treasury Bond	7.49%
- Historical Returns	6.21% - 7.66%

Q. What is your recommended return on equity for Atmos?

A. I recommend that the Commission approve an 8.80% return on equity for Atmos. My recommendation is higher than the proxy group DCF results for Methods 1 and 2. In this case, the low-end results for Methods 1 and 2, 8.13% and 7.68%, respectively, appear to be understated given the range of the DCF results using earnings growth forecasts. Therefore, I have not considered those low-end results in my recommendation. The remaining DCF estimates reflect investor required returns of 8.24% - 9.20%. My 8.80% is near the midpoint of that range. Based on current

market evidence, an 8.80% return on equity is fair and reasonable for an A/A2-rated regulated gas distribution company like Atmos.

Q. Mr. Baudino, are you concerned that your recommended cost of equity is too low?

A. No. All the market evidence I examined fully supports my ROE recommendation for Atmos in this proceeding. As I described in Section II of my testimony, the U. S. economy is in a low interest rate environment, one that has been supported in a deliberate and considered fashion by Federal Reserve monetary policy. Both my DCF and CAPM ROE estimates show that the investor required ROE for Atmos, as well as other regulated gas and water utilities, reflect this low interest rate environment. An 8.80% ROE recommendation for Atmos is by no means too low in the current economic and financial environment.

Cost of Short-Term Debt

Q. Please explain how you adjusted the Company's cost of short-term debt.

A. According to Schedule J-2 F Atmos included commitment fees of $2.604 million in its requested cost of short-term debt. These fixed fees should not be included in the cost of short-term debt. Including these largely fixed fees in short-term debt costs requires the Commission to recalculate the percentage cost of short-term debt whenever it changes the rate base or modifies the amount of short-term debt.

Instead, I recommend that these fees be collected in O&M expenses. In this manner, the Commission ensures that the Company fully recovers these fixed expenses. At the same time, only the short-term debt interest rate itself is reflected in the weighted

cost of capital regardless of the adjustments to rate base or the modifications to the capital structure.

Excluding commitment fees, Atmos' cost of short-term debt is 0.92%. This is the cost rate I recommend the Commission adopt for the Company's weighted cost of capital in this case.

Cost of Long-term Debt

Q. Does Atmos' requested cost of long-term debt require an adjustment?

A. Yes. In its cost of debt calculation in Schedule J-3 F Atmos included a $450 million senior note maturing on March 15, 2019 with a coupon rate of 8.50%. This coupon rate for this debt issue is significantly higher than the current cost of debt for an A-rated company like Atmos Energy. For example, according to Moody's Credit Outlook as of December 29, 2017 the average long-term utility bond yield was 3.81%. The 8.50% debt issue matures within the future test year. Thus, it is reasonable to assume that Atmos Energy will refinance this debt issue with one at a significantly lower cost to ratepayers. For purposes of this case, I assumed that this issue would be refinanced in its entirety at a coupon rate of 4.0%. This lowered the cost of debt from 5.11% as filed by the Company to 4.45%. I recommend that the Commission approve this lower adjusted cost of debt for Atmos in this case.

Capital Structure and Weighted Cost of Capital

Q. What is your recommended weighted cost of capital?

A. My weighted cost of capital recommendation is 6.62%. It is based on an adjusted short-term debt cost of 0.92%, and adjusted long-term debt cost of 4.45%, and my recommended ROE of 8.80%.

TABLE 3

ATMOS ENERGY
WEIGHTED COST OF CAPITAL

	Percentage	Cost	Wtd. Cost
Short-term Debt	3.48%	0.92%	0.03%
Long-term Debt	43.95%	4.45%	1.96%
Common Equity	52.57%	8.80%	4.63%
Total	100.00%		6.62%

IV. RESPONSE TO ATMOS ENERGY TESTIMONY

Q. Please summarize your conclusions with respect to Dr. Vander Weide's testimony and return on equity recommendation.

A. My conclusions regarding Dr. Vander Weide's testimony and return on equity recommendations are as follows.

First, Dr. Vander Weide's recommended ROE of 10.3% is overstated and does not reflect the return requirement of investors in today' marketplace.

Second, Dr. Vander Weide's DCF results are overstated. This overstatement is due mainly to the use of quarterly compounding and the inclusion of flotation costs.

Third, Dr. Vander Weide's risk premium results are grossly overstated and should be rejected. Dr. Vander Weide's use of a forecasted A-rated utility bond yield inflated his risk premium results. For reasons I will explain later, the use of forecasted bond yields in the risk premium and CAPM estimates of the allowed ROE should be rejected.

Fourth, Dr. Vander Weide included a size adjustment that inflated his CAPM results. He also testified that the CAPM results are likely understated for companies such as regulated utilities that have betas less than 1.0. I disagree with this conclusion.

Q. Please summarize Dr. Vander Weide's approach to the DCF model and its results.

A. As I stated earlier in my testimony, Dr. Vander Weide employed a proxy group of gas distribution companies to estimate the cost of equity for Atmos. Dr. Vander Weide confined his growth rate analysis to earnings forecasts from IBES for the proxy utility group. He also utilized quarterly compounding and included a 5% adjustment for flotation costs in his DCF calculations.

Q. On page 19, Dr. Vander Weide rejected the annual DCF model and recommended that the Commission accept a quarterly DCF calculation. Is a quarterly version of the DCF model appropriate for determining the allowed ROE for regulated utility companies?

A. No. The quarterly DCF model proposed by Dr. Vander Weide is unnecessary, overcompensates investors, and results in excessive costs for ratepayers.

Dividends are paid quarterly and, of course, investors can reinvest those dividends. This means that through quarterly compounding, if a utility company is allowed a 10% return on equity then investors will realize slightly more than a 10% return due to their ability to reinvest quarterly dividends. However, this effect should not be added to the annual model that uses the 1 + 0.5 times growth adjustment, which I used in my DCF calculations. Quarterly compounding is likely already accounted for in a company's stock price since investors know that dividends are paid quarterly and that they may reinvest those cash flows. Adding an incremental return for quarterly compounding merely serves to inappropriately and unnecessarily enhance the expected return on equity.

Q. Beginning on page 24 of his Direct Testimony, Dr. Vander Weide discussed his inclusion of a flotation cost adjustment in his DCF analyses. Do you agree with a flotation cost adjustment?

A. No, definitely not. I recommend that the Commission reject a flotation cost adjustment in setting the cost of equity for Atmos.

In my opinion it is likely that flotation costs are already accounted for in current stock prices and that adding an adjustment for flotation costs amounts to double counting. A DCF model using current stock prices should already account for investor expectations, if any, regarding the collection of flotation costs. Multiplying the dividend yield by a 5% flotation cost adjustment as Dr. Vander Weide did essentially assumes that the current stock price is wrong and that it must be adjusted downward to increase the dividend yield and the resulting cost of equity. I do not believe that this is an appropriate assumption. Current stock prices most likely already account for flotation costs, to the extent that such costs are even accounted for by investors.

Q. What is the overstatement of Dr. Vander Weide's DCF results due to the inclusion of quarterly compounding and flotation costs?

A. I eliminated quarterly compounding and flotation costs and recalculated Dr. Vander Weide's DCF results from his Schedule 1. These revisions resulted in a DCF ROE range of 8.8% - 9.3%. This is quite close to my recommended ROE of 8.80% for Atmos.

Risk Premium Model

Q. Please present your conclusions regarding the results of Dr. Vander Weide's ex-ante risk premium analyses.

A. Dr. Vander Weide's ex-ante risk premium results are grossly overstated and should not be relied upon by the Commission for setting Atmos' allowed ROE in this case. His results are overstated due to:

1. Use of a "forecasted" A-rated bond yield.
2. Inclusion of flotation costs.
3. Use of quarterly compounding in his DCF calculation.

I have already discussed items 2 and 3 previously in my testimony and this discussion also applies to the way Dr. Vander Weide calculated the DCF return for his portfolio of proxy companies using the ex-ante risk premium method. Dr. Vander Weide's inclusion of flotation costs and quarterly compounding inflates his proxy group DCF results, thereby overstating the risk premium he used in his analysis.

Q. How does the use of a forecasted A-rated bond yield overstate the risk premium return on equity?

A. Dr. Vander Weide's use of a forecasted A-rated utility bond yield should be rejected.

Current, observable bond yields should be used for any risk premium analysis. Current bond yields reflect all relevant current market information, including expectations about future interest rates. If investors really expected A-rated utility bonds to be significantly higher than they are now, they likely would have already adjusted the current bond yield to avoid or minimize capital losses in the future.

Q. How does the forecasted A-rated utility bond yield used by Dr. Vander Weide compare to current A-rated utility bond yields?

A. The December 29, 2017 yield on Moody's average public utility bond was 3.81%. Dr. Vander Weide's forecasted A-rated utility bond yield is 5.80%, *which is about 200 basis points higher than the current yield on the average public utility bond*. On

its face, Dr. Vander Weide's forecasted bond yield is so far removed from current interest rates that the Commission should simply reject his risk premium analysis out of hand.

Q. Did Dr. Vander Weide recommend the use of a forecasted bond yield in Atmos Energy's last rate case?

A. Yes. In Case No. 2015-00343 Dr. Vander Weide recommended that the Commission employ a forecasted A-rated utility bond yield of 6.2% in the risk premium ROE. Obviously, this forecasted A-rated bond yield was substantially incorrect given today's public utility bond yields. In recommending his forecasted A-rated utility bond yield of 6.2% in that case, Dr. Vander Weide testified as follows:

> Because current interest rates are depressed as a result of the Federal Reserve's extraordinary efforts to keep interest rates low in an effort to stimulate the economy, current interest rates at this time are likely a poor indicator of future interest rates. Economists project that future interest rates will be higher than current interest rates as the Federal Reserve allows interest rates to rise in order to prevent inflation. Thus, the use of forecasted interest rates is consistent with the fair rate of return standard, whereas the use of current interest rates at this time is not.[9]

Experience shows that Dr. Vander Weide's forecasted A-rated bond yield back in 2015 significantly overshot actual bond yields today. Increases in the federal funds rate since 2015 did not have the anticipated effect on long-term interest rates that economic forecasts predicted. Reliance on forecasted interest rates would have resulted in an inflated ROE that, if adopted, would have significantly harmed Kentucky ratepayers.

[9] Direct Testimony of Dr. James Vander Weide, Docket No. 2015-00343, page 32, line 18 through page 33, line 2.

Q. What are your conclusions with respect to Dr. Vander Weide's ex-post risk premium approach?

A. First, it is risky to assume that investors require an unchanging risk premium based on long-term historical returns of stocks over bonds. Changing economic conditions will likely affect investors' risk premium requirement. What investors require today may be quite different from a long-term historical risk premium.

Second, Dr. Vander Weide calculated an historical risk premium using the S&P 500 stock portfolio. Investor expected risk premiums for gas distribution utility stocks over bonds are likely much lower than the expected risk premium for unregulated companies in the S&P 500. Indeed, Dr. Vander Weide's risk premium for the S&P Utility stock portfolio, 4.0%, is lower than the S&P 500 risk premium of 4.6%. Using the S&P 500 risk premium overstated the risk premium ROE for a lower-risk gas company such as Atmos.

Third, Dr. Vander Weide's ex-post risk premium results are significantly overstated due to his inappropriate use of a forecasted A-rated bond. *Using the December 29, 2017 average utility bond yield of 3.81% and adding this to his risk premium range of 4.0% - 4.6% results in an ex-post risk premium return on equity range of 7.81% - 8.41%.*

CAPM Analysis

Q. On pages 35 and 36 of his Direct Testimony Dr. Vander Weide described his approach to using a forecasted 20-year Treasury bond yield in his CAPM

analyses. Is it appropriate to use a forecasted Treasury bond yield for the CAPM?

A. No. My arguments for rejecting Dr. Vander Weide's forecasted A-rated utility bond yield apply equally with respect to using a forecasted Treasury bond yield. The Commission should reject the use of forecasted bond yields in this proceeding.

Q. On page 38 of his Direct Testimony Dr. Vander Weide presented a CAPM ROE of 10.6% that included an adjustment to account for the smaller size of gas distribution companies as measured by market capitalization. Is this an appropriate adjustment?

A. No. Dr. Vander Weide provided no evidence to suggest that a size premium applies to smaller regulated utility companies, which on average are quite different from the groups of companies included in the Duff and Phelps' research on size premiums. I reviewed the discussion of size premiums from Chapter 7 of the *2017 SBBI Yearbook,* the source I used for my historical CAPM analyses. The data from Duff and Phelps shows the following betas for groups of smaller capitalization stocks[10]:

Mid-level capitalization	1.12
Low capitalization	1.22
Micro-capitalization	1.35

The groups of smaller capitalization stocks have much higher betas than regulated utility companies. The average beta for my proxy group is 0.73, which is far below even the mid-level capitalization groups of stocks studied by Duff and Phelps. The low and micro capitalization stocks have even higher betas. This shows that the many unregulated stocks included in the Duff and Phelps study are far more risky

[10] *2017 SBBI Yearbook,* Duff and Phelps, pg. 7-16.

than regulated utilities like Atmos. I recommend that the Commission reject Dr. Vander Weide's size premium adjustment in the CAPM.

Q. On pages 39 through 41 of his Direct Testimony, Dr. Vander Weide cited several studies in support of his proposition that the CAPM underestimates required returns for securities with betas less than 1.0. Please address Dr. Vander Weide's testimony in this area.

A. Although Dr. Vander Weide cited a number of studies on page 39, the problem is that there is no evidence that the CAPM bias he alleges has any applicability to regulated utility companies. Regulated gas utilities have betas lower than 1.0 because they are lower in risk than the market as a whole. Thus, the average gas utility group beta from my proxy group, 0.73, reflects the lower risk of regulated gas distribution operations vis-à-vis the unregulated market.

Q. On page 41 of his Direct Testimony, Dr. Vander Weide presented an analysis of historical risk premiums for the S&P Utilities stock index that supported his conclusion that the CAPM understated the expected ROE for regulated utilities. He recommended using a beta of 0.90, rather than the proxy group beta of 0.74 to estimate the CAPM ROE for Atmos. Please comment on Dr. Vander Weide's analysis.

A. I would counsel extreme caution on using a beta of 0.90 for regulated gas distribution companies. Value Line's published betas are widely available to investors and one may reasonably assume that they influence investor expectations and rate of return requirements. Using a much higher beta of 0.90 based on historical returns assumes that Value Line's published betas are incorrect and that investors should not rely on them. It also assumes that utility stocks are more volatile and more risky relative to the market as a whole than they really are. In my opinion, realized returns and risk premiums may not be indicative of investor expectations and future return requirements. There is also no evidence that investors

expect or rely upon Dr. Vander Weide's calculated beta of 0.90 for regulated gas utilities.

I would further note than even if one used a beta of 0.90 in Dr. Vander Weide's CAPM, it is still grossly overstated due to the inappropriate use of a forecasted 20-year Treasury bond yield. Using the November 2017 20-year Treasury yield of 2.60%, the CAPM using a 0.90 beta would yield the following result:

$$2.60\% + (0.90 \times 6.9) = 8.81\%$$

Note that I excluded Dr. Vander Weide's proposed flotation cost adjustment of 0.14 from the CAPM calculation. For the reasons I explained earlier, flotation costs should not be added to the CAPM ROE calculation.

Q. On pages 42 and 43 of his Direct Testimony Dr. Vander Weide discussed his CAPM analyses and results using a DCF return on the S&P 500. Please comment on this portion of Dr. Vander Weide's testimony.

A. Dr. Vander Weide's second CAPM formulation also suffers from the use of a forecasted 20-year Treasury yield, a beta of 0.90, and the inclusion of flotation costs. Using the more current 20-year Treasury yield, a proxy group beta of 0.74, and excluding flotation costs, Dr. Vander Weide's DCF-based CAPM results are:

$$2.60\% + .74 * (11.9\% - 2.60\%) = 9.48\%$$

Q. On page 44 of his Direct Testimony, Dr. Vander Weide stated that his recommended ROE of 10.3% was conservative because the market value capital structure of his proxy companies contains a higher equity percentage than Atmos' book value capital structure. Please comment on Dr. Vander Weide's testimony on this point.

A. I disagree with Dr. Vander Weide on this point. First, ratemaking does not use the market value equity ratio for Atmos or any of the other companies in the proxy group that Dr. Vander Weide and I used to estimate the cost of equity. Regulation uses book value equity ratios to calculate the regulated cost of capital. In this sense, Atmos is no different from the utilities in the gas company proxy group. Thus, Dr. Vander Weide's discussion of the market value of his proxy companies is irrelevant with respect to the allowed ROE in this proceeding. Atmos Energy's A/A2 rating is a solid investment grade rating and Atmos' requested 52.57% equity ratio supports that rating. A further upward adjustment to Atmos' ROE in this proceeding is unwarranted and would result in excessive costs for Kentucky ratepayers.

Q. Does this complete your Direct Testimony?

A. Yes.

AFFIDAVIT

STATE OF GEORGIA)

COUNTY OF FULTON)

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.

Richard A. Baudino

Richard A. Baudino

Sworn to and subscribed before me on this
16th day of January 2018.

Jessica K. Inman

Notary Public

JESSICA K INMAN
NOTARY PUBLIC
CHEROKEE COUNTY, GEORGIA
MY COMMISSION EXPIRES
JULY 31, 2019

BEFORE THE

PUBLIC SERVICE COMMISSION OF THE

COMMONWEALTH OF KENTUCKY

IN RE:	**APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES AND TARIFF MODIFICATIONS**	**)** **)** **)** **)**	**DOCKET NO. 2017-00349**

EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE

OFFICE OF THE ATTORNEY GENERAL

J. Kennedy and Associates, Inc.
570 Colonial Park Drive, Suite 305
Roswell, GA 30075

JANUARY 17, 2018

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.
Major in Economics
Minor in Statistics

New Mexico State University, B.A.
Economics
English

Thirty-two years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies
Electric, Gas, and Water Utility Cost Allocation and Rate Design
Revenue Requirements
Gas and Electric industry restructuring and competition
Fuel cost auditing
Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to Present: **Kennedy and Associates: Director of Consulting, Consultant** - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to 1989: **New Mexico Public Service Commission Staff: Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System
Air Products and Chemicals, Inc.
Arkansas Electric Energy Consumers
Arkansas Gas Consumers
AK Steel
Armco Steel Company, L.P.
Assn. of Business Advocating Tariff Equity
Atmos Cities Steering Committee
Canadian Federation of Independent Businesses
CF&I Steel, L.P.
Cities of Midland, McAllen, and Colorado City
Climax Molybdenum Company
Cripple Creek & Victor Gold Mining Co.
General Electric Company
Holcim (U.S.) Inc.
IBM Corporation
Industrial Energy Consumers
Kentucky Industrial Utility Consumers
Kentucky Office of the Attorney General
Lexington-Fayette Urban County Government
Large Electric Consumers Organization
Newport Steel
Northwest Arkansas Gas Consumers
Maryland Energy Group
Occidental Chemical
PSI Industrial Group
Large Power Intervenors (Minnesota)
Tyson Foods
West Virginia Energy Users Group
The Commercial Group
Wisconsin Industrial Energy Group
South Florida Hospital and Health Care Assn.
PP&L Industrial Customer Alliance
Philadelphia Area Industrial Energy Users Gp.
West Penn Power Intervenors
Duquesne Industrial Intervenors
Met-Ed Industrial Users Gp.
Penelec Industrial Customer Alliance
Penn Power Users Group
Columbia Industrial Intervenors
U.S. Steel & Univ. of Pittsburg Medical Ctr.
Multiple Intervenors
Maine Office of Public Advocate
Missouri Office of Public Counsel
University of Massachusetts - Amherst
WCF Hospital Utility Alliance
West Travis County Public Utility Agency
Steering Committee of Cities Served by Oncor
Utah Office of Consumer Services
Healthcare Council of the National Capital Area
Vermont Department of Public Service

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jornada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/ GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343-000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.,Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States,Inc.	Cost of debt.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
10/99	R-00994782	PA	Peoples Industrial Intervenors	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenors	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD & United States	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HeallthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T	WV	West Virginia Energy Users Group	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
03/10	09-1352-	WV E-42T	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co,	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

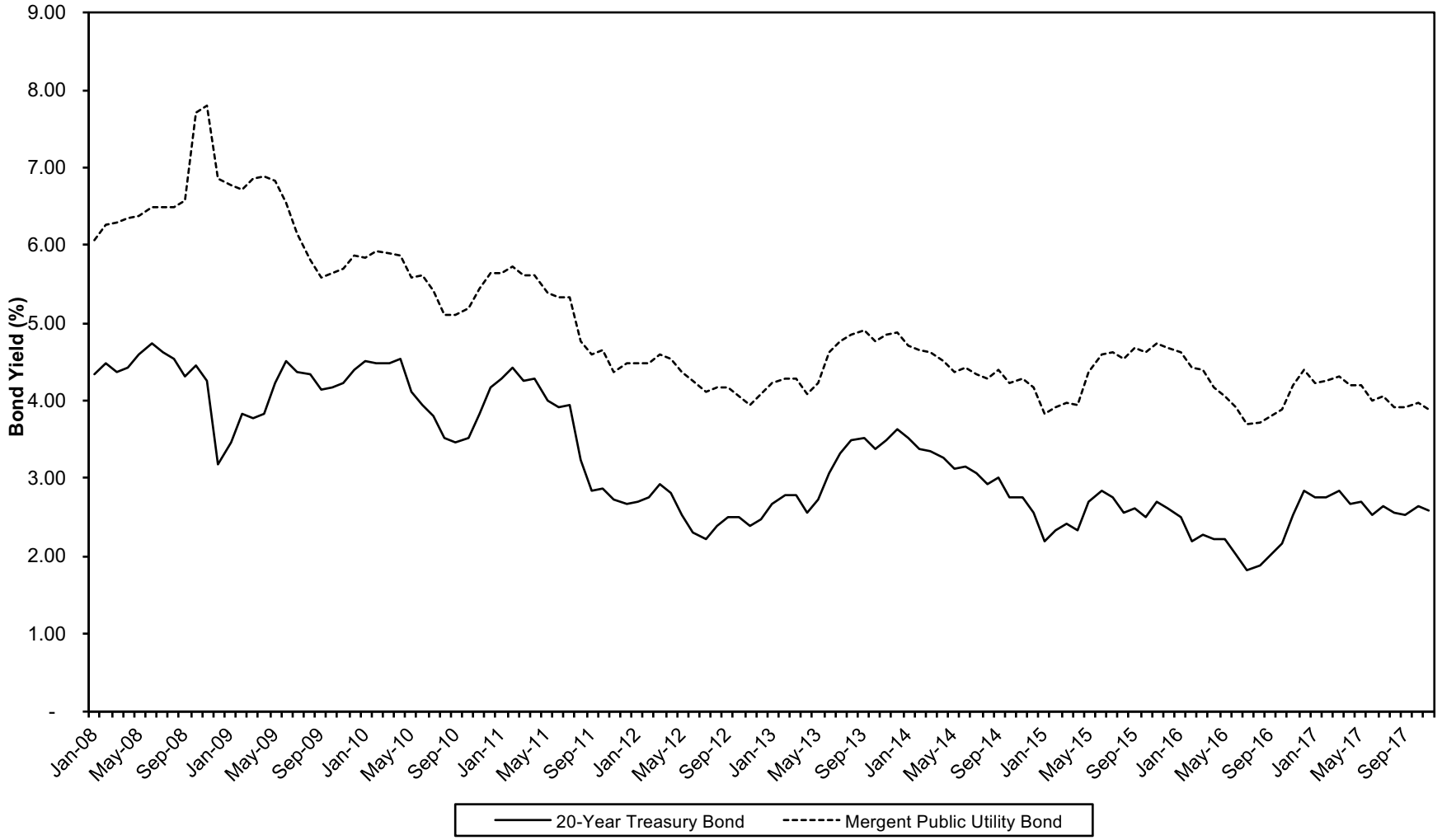
Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2018

Date	Case	Jurisdict.	Party	Utility	Subject
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital

HISTORICAL BOND YIELDS
AVERAGE PUBLIC UTILITY BOND VS 20-YEAR TREASURY BOND



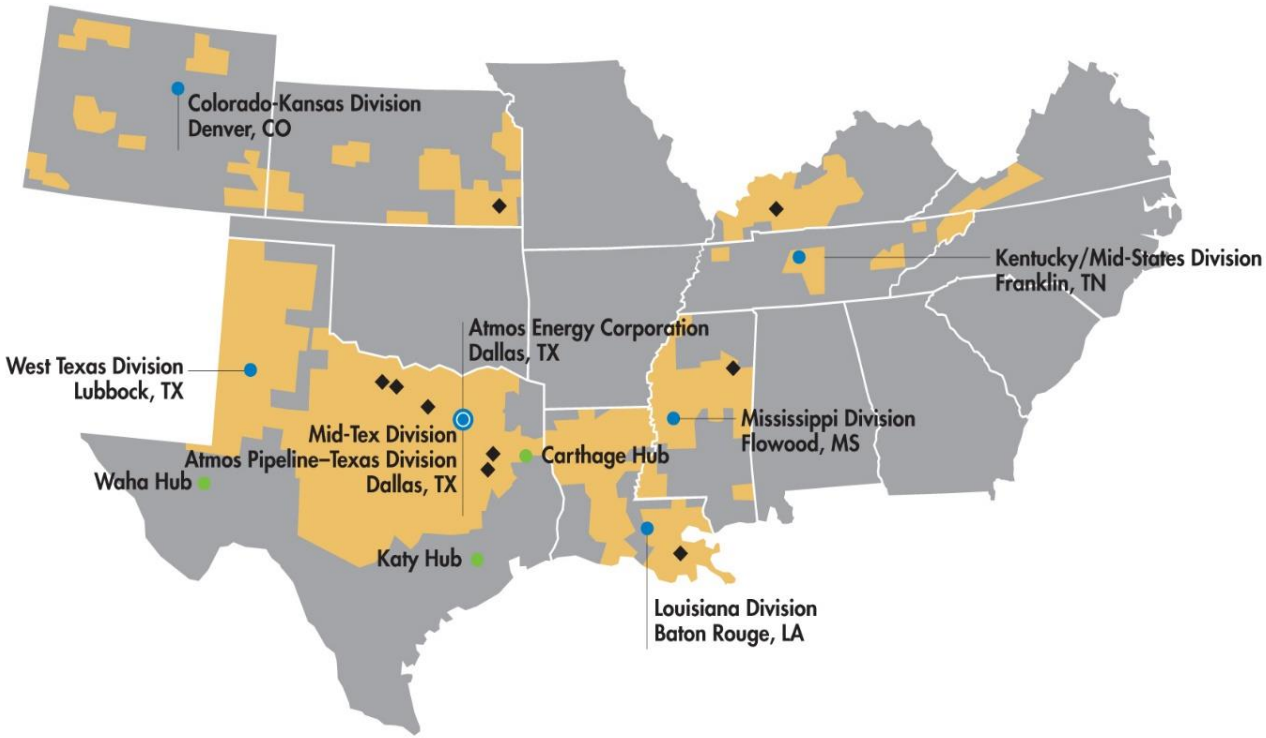
Atmos Energy Corporation

Delivering clean, safe and economical energy to over 3 million homes and businesses

ATO
LISTED
NYSE

Atmos Energy

A multi-state regulated natural gas delivery company achieving strong financial growth through infrastructure investment, enhancing the safety and reliability of our system



ATMOS energy

December 2017

Investment Highlights

A Pure-Play, High-Growth Natural Gas Delivery Investment Proposition

Attractive pure-play total return

- Attractive total return proposition of 8 - 10%
- 6 - 8% forecasted EPS growth through Fiscal 2022; attractive dividend yield
- Earnings are 100% regulated and rate base driven

Diversified asset base with constructive regulation

- Regulated distribution assets in 8 states serving over 3 million customers
- Favorably positioned regulated pipeline spans Texas shale gas supply basins
- Constructive rate mechanisms reduce or eliminate regulatory lag

Strong rate base growth

- Strong forecasted rate base growth through Fiscal 2022
- Annual capital expenditures of ~$1.3 billion - $1.9 billion through Fiscal 2022; ~80% spent on safety and reliability
- Earning on over 95% of annual capex within 6 months; ~99% within 12 months

Strong financial foundation with consistent track record

- 15 consecutive years of EPS growth; 34 consecutive years of dividend growth
- 7.8% indicated dividend increase for 2018E
- High investment-grade credit ratings (A, A2) with ample liquidity

As of November 8, 2017

ATMOS ENERGY
PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
Atmos Energy	High Price ($)	87.220	89.000	88.620	87.640	92.410	93.560
	Low Price ($)	82.140	86.300	83.370	83.600	86.330	84.520
	Avg. Price ($)	84.680	87.650	85.995	85.620	89.370	89.040
	Dividend ($)	0.450	0.450	0.450	0.450	0.485	0.485
	Mo. Avg. Div.	2.13%	2.05%	2.09%	2.10%	2.17%	2.18%
	6 mos. Avg.	2.12%					
Chesapeake Utilities	High Price ($)	77.600	81.100	81.950	82.150	86.350	86.000
	Low Price ($)	74.800	77.150	76.950	77.650	78.600	75.000
	Avg. Price ($)	76.200	79.125	79.450	79.900	82.475	80.500
	Dividend ($)	0.325	0.325	0.325	0.325	0.325	0.325
	Mo. Avg. Div.	1.71%	1.64%	1.64%	1.63%	1.58%	1.61%
	6 mos. Avg.	1.63%					
New Jersey Resources	High Price ($)	42.530	44.300	43.850	44.650	45.450	45.400
	Low Price ($)	39.500	42.100	41.450	41.900	42.350	38.600
	Avg. Price ($)	41.015	43.200	42.650	43.275	43.900	42.000
	Dividend ($)	0.255	0.255	0.273	0.273	0.273	0.273
	Mo. Avg. Div.	2.49%	2.36%	2.56%	2.52%	2.49%	2.60%
	6 mos. Avg.	2.50%					
NiSource Inc.	High Price ($)	26.560	27.250	27.290	26.860	27.760	27.680
	Low Price ($)	24.960	25.750	25.220	25.250	26.390	24.630
	Avg. Price ($)	25.760	26.500	26.255	26.055	27.075	26.155
	Dividend ($)	0.175	0.175	0.175	0.175	0.175	0.175
	Mo. Avg. Div.	2.72%	2.64%	2.67%	2.69%	2.59%	2.68%
	6 mos. Avg.	2.66%					
Northwest Natural Gas	High Price ($)	63.500	66.600	68.600	67.000	69.500	69.400
	Low Price ($)	59.150	62.950	64.080	64.280	65.150	58.550
	Avg. Price ($)	61.325	64.775	66.340	65.640	67.325	63.975
	Dividend ($)	0.470	0.470	0.470	0.473	0.473	0.473
	Mo. Avg. Div.	3.07%	2.90%	2.83%	2.88%	2.81%	2.96%
	6 mos. Avg.	2.91%					
ONE Gas Inc.	High Price ($)	73.340	76.060	75.750	78.260	79.510	79.460
	Low Price ($)	68.450	71.600	73.550	70.660	75.830	72.260
	Avg. Price ($)	70.895	73.830	74.650	74.460	77.670	75.860
	Dividend ($)	0.420	0.420	0.420	0.420	0.420	0.420
	Mo. Avg. Div.	2.37%	2.28%	2.25%	2.26%	2.16%	2.21%
	6 mos. Avg.	2.25%					
Spire Inc.	High Price ($)	72.950	78.000	77.630	79.350	82.380	82.850
	Low Price ($)	68.300	72.550	73.750	74.300	76.800	73.650
	Avg. Price ($)	70.625	75.275	75.690	76.825	79.590	78.250
	Dividend ($)	0.525	0.525	0.525	0.525	0.525	0.563
	Mo. Avg. Div.	2.97%	2.79%	2.77%	2.73%	2.64%	2.88%
	6 mos. Avg.	2.80%					

ATMOS ENERGY
PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
UGI Corp.	High Price ($)	51.110	51.100	49.750	48.610	49.060	49.770
	Low Price ($)	47.520	47.760	46.590	46.570	47.330	46.430
	Avg. Price ($)	49.315	49.430	48.170	47.590	48.195	48.100
	Dividend ($)	0.250	0.250	0.250	0.250	0.250	0.250
	Mo. Avg. Div.	2.03%	2.02%	2.08%	2.10%	2.07%	2.08%
	6 mos. Avg.	2.06%					

Average Dividend Yield 2.37%

Source: Yahoo! Finance

ATMOS ENERGY
PROXY GROUP
DCF Growth Rate Analysis

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Value Line B x R	(4) Zacks	(5) Yahoo! Finance
Atmos Energy	6.50%	6.00%	5.50%	7.00%	6.50%
Chesapeake Utilities	5.50%	8.00%	8.00%	6.00%	8.10%
New Jersey Resources	3.50%	2.00%	5.50%	6.00%	6.00%
NiSource Inc.	6.50%	5.50%	2.50%	5.90%	7.70%
Northwest Natural Gas	1.00%	7.00%	3.50%	4.50%	4.00%
ONE Gas Inc.	13.50%	9.50%	4.00%	5.80%	6.00%
Spire Inc.	5.00%	8.00%	4.50%	5.00%	4.52%
UGI Corp.	4.00%	6.50%	8.00%	6.20%	6.20%
Average Growth Rates	5.69%	6.56%	5.19%	5.80%	6.13%
Median Growth Rates	5.25%	6.75%	5.00%	5.95%	6.10%

Sources: Zacks and Yahoo! Finance earnings growth rates retrieved December 28, 2017
Yahoo! Finance growth rate was used for UGI's Zacks growth rate, which was not available
Value Line Investment Survey, December 1, 2017

ATMOS ENERGY
PROXY GROUP
DCF RETURN ON EQUITY CALCULATION

	(1) Value Line Dividend Gr.	(2) Value Line Earnings Gr.	(3) Zack's Earning Gr.	(4) Yahoo! Earning Gr.	(5) Average of All Gr. Rates
Method 1:					
Dividend Yield	2.37%	2.37%	2.37%	2.37%	2.37%
Average Growth Rate	5.69%	6.56%	5.80%	6.13%	6.04%
Expected Div. Yield	2.44%	2.45%	2.44%	2.44%	2.44%
DCF Return on Equity	***8.13%***	***9.01%***	***8.24%***	***8.57%***	***8.48%***
Method 2:					
Dividend Yield	2.37%	2.37%	2.37%	2.37%	2.37%
Median Growth Rate	5.25%	6.75%	5.95%	6.10%	6.01%
Expected Div. Yield	2.43%	2.45%	2.44%	2.44%	2.44%
DCF Return on Equity	***7.68%***	***9.20%***	***8.39%***	***8.54%***	***8.45%***

PROXY GROUP
Capital Asset Pricing Model Analysis

20-Year Treasury Bond, Value Line Beta

Line No.		
1	Market Required Return Estimate	9.35%
2	Risk-free Rate of Return, 20-Year Treasury Bond	
3	Average of Last Six Months	2.59%
4	Risk Premium	
5	(Line 1 minus Line 3)	6.76%
6	Comparison Group Beta	0.73
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	4.90%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.49%

5-Year Treasury Bond, Value Line Beta

11	Market Required Return Estimate	9.35%
12	Risk-free Rate of Return, 5-Year Treasury Bond	
13	Average of Last Six Months	1.88%
14	Risk Premium	
15	(Line 1 minus Line 3)	7.47%
16	Comparison Group Beta	0.73
17	Comparison Group Beta * Risk Premium	
18	(Line 5 * Line 6)	5.42%
19	CAPM Return on Equity	
20	(Line 3 plus Line 8)	7.29%

PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

20 Year Treasury Bond Data

	Avg. Yield
June-17	2.54%
July-17	2.65%
August-17	2.55%
September-17	2.53%
October-17	2.65%
November-17	2.60%
6 month average	2.59%

Source: www.federalreserve.gov

5 Year Treasury Bond Data

	Avg. Yield
June-17	1.77%
July-17	1.87%
August-17	1.78%
September-17	1.80%
October-17	1.98%
November-17	2.05%
6 month average	1.88%

Value Line Market Return Data:

Forecasted Data:

Value Line Median Growth Rates:	
Earnings	10.50%
Book Value	7.50%
Average	9.00%
Average Dividend Yield	0.86%
Estimated Market Return	9.90%
Value Line Projected 3-5 Yr. Median Annual Total Return	8.00%
Average Annual Total Return	9.60%
Average	8.80%
Average of Projected Mkt. Returns	9.35%

Source: Value Line Investment Survey for Windows retreived Nov. 30, 2017

Comparison Group Betas:

Atmos Energy	0.70
Chesapeake Utilities	0.70
New Jersey Resources	0.80
NiSource Inc.	0.60
Northwest Natural Gas	0.70
ONE Gas Inc.	0.70
Spire Inc.	0.70
UGI Corp.	0.90
Average	0.73

Source: Value Line Investment Survey, December 1, 2017

PROXY GROUP
CAPITAL ASSET PRICING MODEL ANALYSIS
Historic Market Premium

	Geometric Mean	Arithmetic Mean	Adjusted Arithmetic Mean
Long-Term Annual Return on Stocks	10.00%	12.00%	
Long-Term Annual Income Return on Long-Term Treas	5.00%	5.00%	
Historical Market Risk Premium	5.00%	7.00%	5.97%
Gas Distribution Group Beta, Value Line	0.73	0.73	0.73
Beta * Market Premium	3.63%	5.08%	4.33%
Current 20-Year Treasury Bond Yield	2.59%	2.59%	2.59%
CAPM Cost of Equity, Value Line Beta	**6.21%**	**7.66%**	**6.91%**

Source: *2017 SBBI Yearbook, Stocks, Bonds, Bills, and Inflation*, Duff and Phelps; pp. 2-6, 6-17, 10-30