COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES; APPROVAL OF TARIFF REVISIONS; AND OTHER GENERAL RELIEF	**)** **)** **)** **)** **)**	**CASE NO. 2024-00276**

DIRECT TESTIMONY

AND EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE

OFFICE OF THE ATTORNEY GENERAL OF THE COMMONWEALTH OF KENTUCKY

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

January 27, 2025

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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 RAB-1 summarizes my expert testimony experience.

Q. On whose behalf are you testifying?

A. I am submitting Direct Testimony on behalf of the Office of the Attorney General of the Commonwealth of Kentucky ("OAG").

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to address the allowed return on equity ("ROE") and overall rate of return on rate base for the Kentucky operations of Atmos Energy Corporation ("Atmos" or "Company"). In so doing, I will also address the Company's proposed capital structure. Finally, I will offer my response to the proposed cost of equity and capital structure recommended by Atmos witnesses Dylan D'Ascendis and Joe T. Christian.

Q. Please summarize your conclusions and recommendations.

A. I recommend that the Kentucky Public Service Commission ("Commission" or "KPSC") authorize an allowed ROE for Atmos of 9.40%. My recommended ROE

is based on: (1) the results of a discounted cash flow ("DCF") analysis applied to a proxy group of seven natural gas distribution companies and (2) Capital Asset Pricing Model ("CAPM") analyses using historical and forecasted risk premiums as well as publicly available estimates of market risk premiums from other sources. My recommendation fully reflects current economic and financial market conditions at the time I prepared my testimony, which I will describe in more detail in Section II. A 9.40% ROE provides a fair return to investors on a low-risk regulated gas distribution utility investment like Atmos. Section III presents my ROE analyses and discusses my recommended equity ratio as well.

Turning to the Company's requested cost of capital, Mr. D'Ascendis recommended a ROE of 10.95%. I will demonstrate in Section IV of my testimony that this is an excessive recommendation, is inconsistent with current capital market conditions, and serves to inflate the Company's revenue requirement to the detriment of Kentucky's ratepayers. His recommended ROE should be rejected by the Commission.

Company witness Christian presented Atmos' requested capital structure. He recommended a common equity ratio of 60.88%. This common equity ratio is unreasonable, excessive, and should be rejected by the Commission. Mr. Christian's recommended common equity ratio is in direct conflict with the KPSC's Order in Case No. 2021-00214, in which the Commission clearly ordered that Atmos' common equity ratio be reduced and that in a subsequent case be further reduced toward the common equity ratio of a proxy group of companies. Instead, Atmos actually increased its common equity ratio over and above what it requested

in its last rate case before the KPSC. I strongly recommend that the Commission order that Atmos' ratemaking common equity ratio be reduced in this case consistent with the Order in Case No. 2021-00214. I recommend that the Commission adopt a common equity ratio of 52.5%, which is consistent with the common equity ratios recently filed by Columbia Gas of Kentucky last year and Delta Gas Company this year. A 52.5% common equity ratio makes additional progress toward the common equity ratio of the proxy group as well, which is approximately 49% - 50%. I will present more detailed support for my recommended common equity ratio in Section III.

Finally, I recommend that the Commission continue its practice from Atmos' last rate case and approve a ROE for the Company's Pipeline Replacement Program rider that is 10 basis points lower than my recommended ROE of 9.40%, or 9.30% in this case.

II. ROE GUIDELINES AND REVIEW OF ECONOMIC CONDITIONS

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

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 ROE. One measures the opportunity cost of an investment equal to what one would have obtained in the next best alternative. For example, suppose that an investor decides to purchase the stock of a publicly traded regulated gas utility. That investor will make 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 regulated gas distribution utility stock like Atmos 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 on equity that is equivalent to that being offered by other risk-comparable firms.

Q. Please provide the Commission an overview of important economic factors that affect your estimate of the allowed ROE for Atmos.

A. The following discussion presents my overview of certain key factors in the economy that are important influences on the current investor required ROE. These factors include the current level of interest rates, current levels of inflation, the effects of unemployment and economic growth, and stock market volatility.

Q. Does the level of interest rates affect the allowed ROE for regulated utilities?

A. Generally, yes. The common stock of regulated utilities tends to be interest rate sensitive. This means that the cost of equity for regulated utilities tends to rise and fall with changes in interest rates. For example, as interest rates rise, the cost of equity will also rise, and vice versa when interest rates fall. This relationship is due in large part to the capital-intensive nature of regulated industries, including gas distribution companies, that rely heavily on both debt and equity to finance their regulated investments.

Q. Before you continue, please provide a brief explanation of how the Federal Reserve Board ("Fed") uses interest rates to affect conditions in the financial markets.

A. Generally, the Fed uses monetary policy to implement certain economic goals. The Fed explained its monetary policy as follows:

> Monetary policy in the United States comprises the Federal Reserve's actions and communications to promote maximum employment, stable prices, and moderate long-term interest rates--the economic goals the Congress has instructed the Federal Reserve to pursue.[1]

One of the Fed's primary tools for conducting monetary policy is setting the federal funds rate. The federal funds rate is the interest rate set by the Fed that banks and credit unions charge each other for overnight loans of reserve balances. Traditionally the federal funds rate directly influences short-term interest rates,

[1] Monetary Policy (Aug. 2, 2024), https://www.federalreserve.gov/monetarypolicy.htm.

such as the Treasury bill rate and interest rates on savings and checking accounts. The federal funds rate has a more indirect effect on long-term interest rates, such as the 30-Year Treasury bond and private and corporate long-term debt. Long-term interest rates are set more by market forces that influence the supply and demand of loanable funds.

Q. Describe the trend in interest rates over the last 10 years.

A. Until recently, the overall trend in interest rates in the U.S. and the world economy had been lower and this continued into 2020-2021 as governments and central banks, including the Fed, instituted programs in response to the economic shocks brought about by the COVID-19 pandemic. The trend of lower interest rates was precipitated by the 2007 financial crisis and severe recession that followed in December 2007. In response to this economic crisis, the 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."[2]

In 2022, however, the Fed began an aggressive policy of raising short-term interest rates in response to concerns about persistently high inflation in the economy, which began to be a problem in 2021. After the Fed reduced the federal

[2] *Credit and Liquidity Programs and the Balance Sheet*, Monetary Policy, FED. RESERVE BD., (May 10, 2021). https://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm.

funds rate to nearly 0% through 2021, it was increased several times in 2022 and 2023, rising to a target range of 5.25% - 5.50%.

As inflation began to ease in 2023 and 2024, the Fed cut the federal funds rate by 50 basis points, or 0.50% on September 18, 2024 to a range of 4.75% to 5.00%, noting progress on reducing inflation toward its goal of 2.0%.[3] The Fed further lowered the federal funds rate on November 7 and December 18 of 2024 to its current level of 4.25% - 4.50%. In its press release issued on December 18, 2024, the Fed stated the following:

> Recent indicators suggest that economic activity has continued to expand at a solid pace. Since earlier in the year, labor market conditions have generally eased, and the unemployment rate has moved up but remains low. Inflation has made progress toward the Committee's 2 percent objective but remains somewhat elevated.
>
> The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. The Committee judges that the risks to achieving its employment and inflation goals are roughly in balance. The economic outlook is uncertain, and the Committee is attentive to the risks to both sides of its dual mandate.
>
> In support of its goals, the Committee decided to lower the target range for the federal funds rate by 1/4 percentage point to 4-1/4 to 4-1/2 percent. In considering the extent and timing of additional adjustments to the target range for the federal funds rate, the Committee will carefully assess incoming data, the evolving outlook, and the balance of risks.[4]

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[3] https://www.federalreserve.gov/monetarypolicy/files/monetary20240918a1.pdf

[4] *Federal Reserve issues FOMC statement,* Press Release, FED. RESERVE BD., (December 18, 2024), https://www.federalreserve.gov/monetarypolicy/files/monetary20241218a1.pdf**.**

Figure 1 below presents a graph that tracks the 30-Year Treasury bond yield and the Mergent average utility bond yield. The graph covers the ten-year period from January 2015 through December 2024.

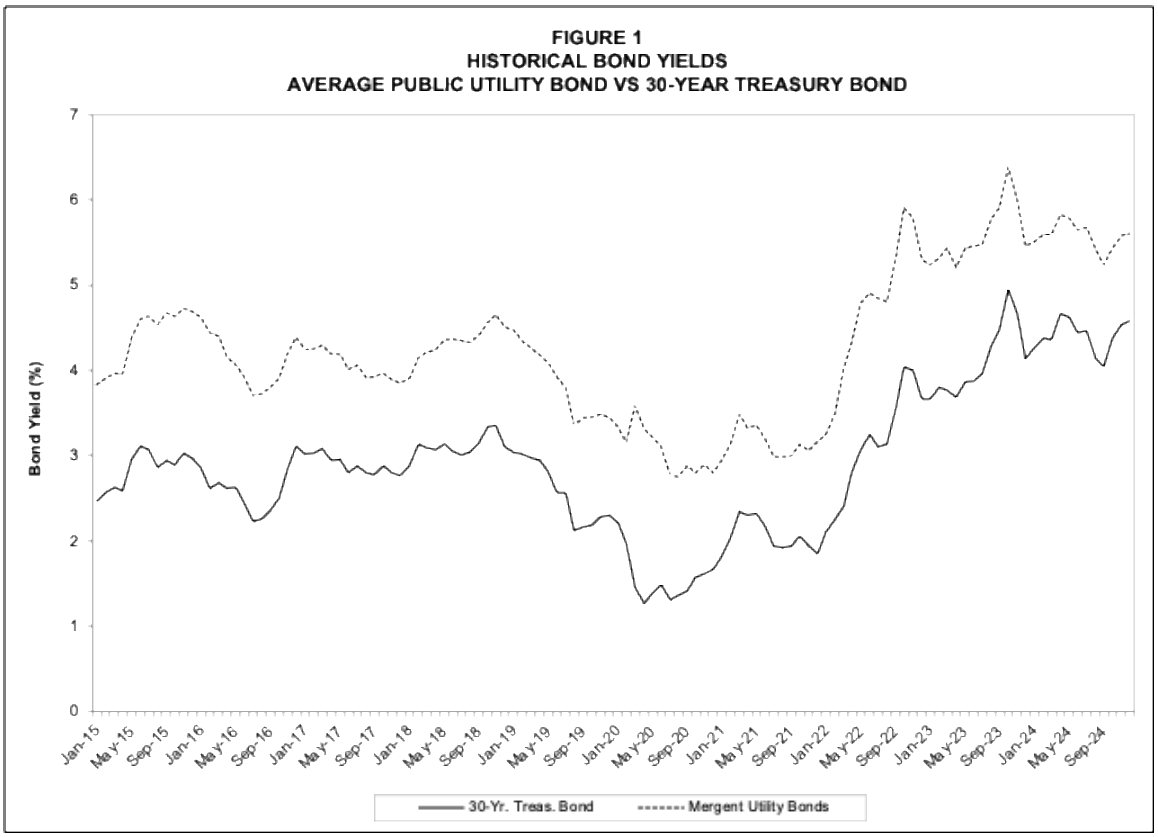

Figure 1 graphically shows the steep increase in long-term bond yields since 2022. The 30-year Treasury Bond yield increased from 2.10% in January 2022 to 4.95% in October 2023, an increase of 2.85%, or 285 basis points. The Mergent average public utility bond yield increased during that same period from 3.25% to 6.38%, an increase of 3.25%, or 318 basis points.

Recent long-term bond yields have been lower since October 2023, with the 30-year Treasury Bond yield at 4.58% in December 2024. The Mergent average public utility bond yield was 5.60% in December 2024.

Q. What has been the recent experience with inflation?

A. Figure 2 presents monthly annualized inflation data from January 2021 through November 2024, the most recent monthly data that was available to me when I prepared my Direct Testimony.

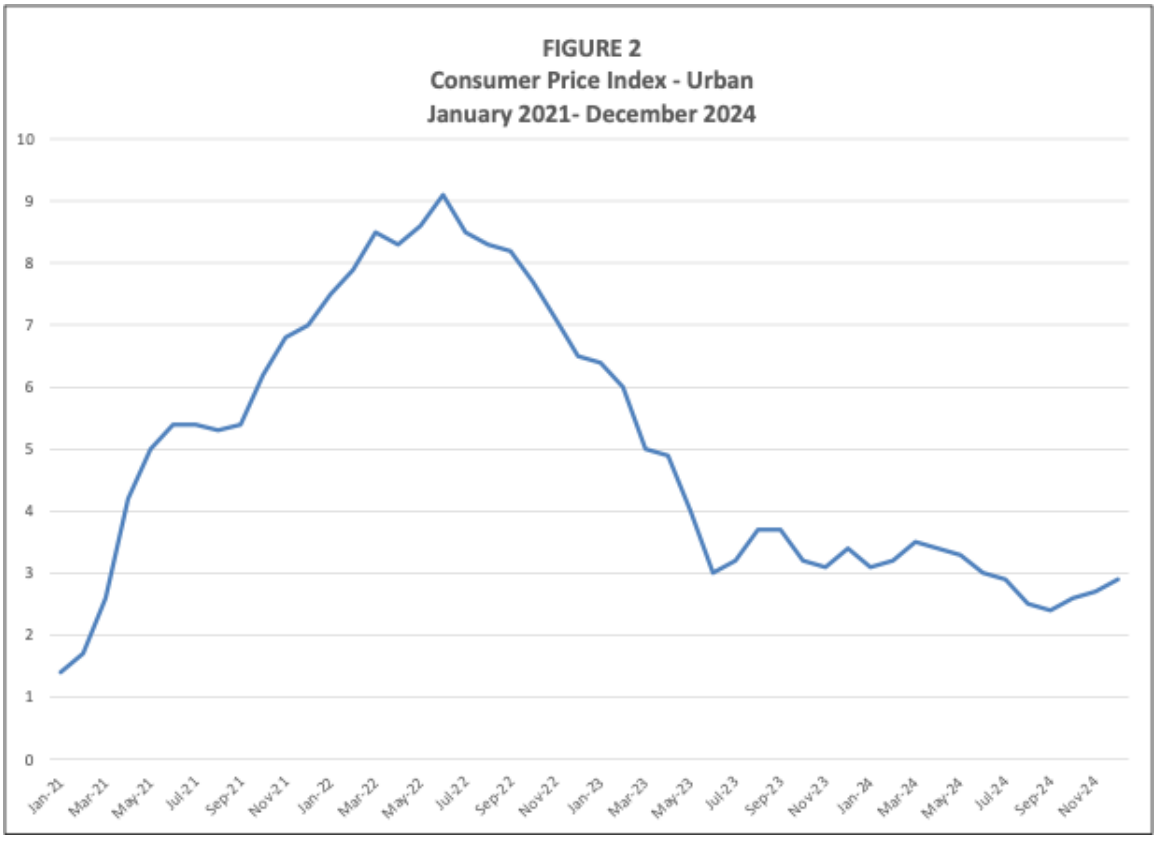

Figure 2 shows that inflation greatly accelerated in 2021, peaked in June 2022 at 9.1%, then declined substantially through June 2023 to 3.0%. Inflation was 2.9% for December 2024.

Q. What are the expectations for inflation, interest rates, and other economic indicators going forward?

A. The Federal Reserve Bank of Philadelphia publishes the *Survey of Professional Forecasters* ("Survey"), in which a panel of 33 forecasters provide projections for several economic variables, including growth in Gross Domestic Product ("GDP"),

inflation, and unemployment, as well as short-term and long-term interest rates. The most recent edition of the Survey, dated November 15, 2024, provided the following forecasts:

- Consumer Price Index ("CPI") inflation is expected to average 2.4% for 2025 and 2.3% for 2026 and 2.23% per year over the period of 2024 – 2033.
- 10-Year Treasury bond yield is forecasted to be 4.0% in 2025 and 3.80% in 2026.
- An unemployment rate of 4.3% is forecasted for 2025 and 4.2% for 2026.
- Real growth in GDP of 2.2% is forecasted in 2025 and 2.1% in 2026.[5]

The Fed's economic projections as of December 18, 2024 showed the following median forecasts:

- Personal Consumption Expenditures ("PCE") inflation rate of 2.5% for 2025, 2.1% for 2026, and longer run inflation at 2.0%;
- Unemployment rate of 4.3% for 2025 and 2026, with a longer run unemployment rate of 4.2%; and
- Growth in real GDP of 2.1% for 2025, 2.0% for 2026 with a longer run growth rate of 1.8%.[6]

Q. Based on the interest rate data and the forecasts you presented, what are your conclusions with respect to general economic conditions at this time?

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[5] Fourth Quarter Survey of Professional Forecasters, Federal Reserve Bank of Philadelphia (November 15, 2024**),** https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/spf-q4-2024**.**

[6] Summary of Economic Projections, Federal Reserve Board (December 18, 2024), https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20241218.pdf**.**

A. There appears to be a consensus for around 2.0% growth in real GDP in 2025 – 2026 and longer term as well. The U.S. unemployment rate forecasted to be about 4.2% - 4.3% through 2026. CPI Inflation is forecasted to be 2.5% through 2025 but decline below that level in 2026 and thereafter.

Q. Please provide the Commission with some additional background information regarding market volatility since the beginning of 2023.

A. A widely used measure of market volatility is the Chicago Board Options Exchange ("CBOE") Volatility Index ("VIX"), also called the "fear index" or "fear gauge." Basically, the VIX measures the market's expectations for volatility over the next 30-day period. The higher the VIX, the greater the expectation of volatility and market risk. Figure 3 presents the VIX from January 1, 2023 through December 31, 2024.[7]

FIGURE 3
January 2023 - December 2024 VIX

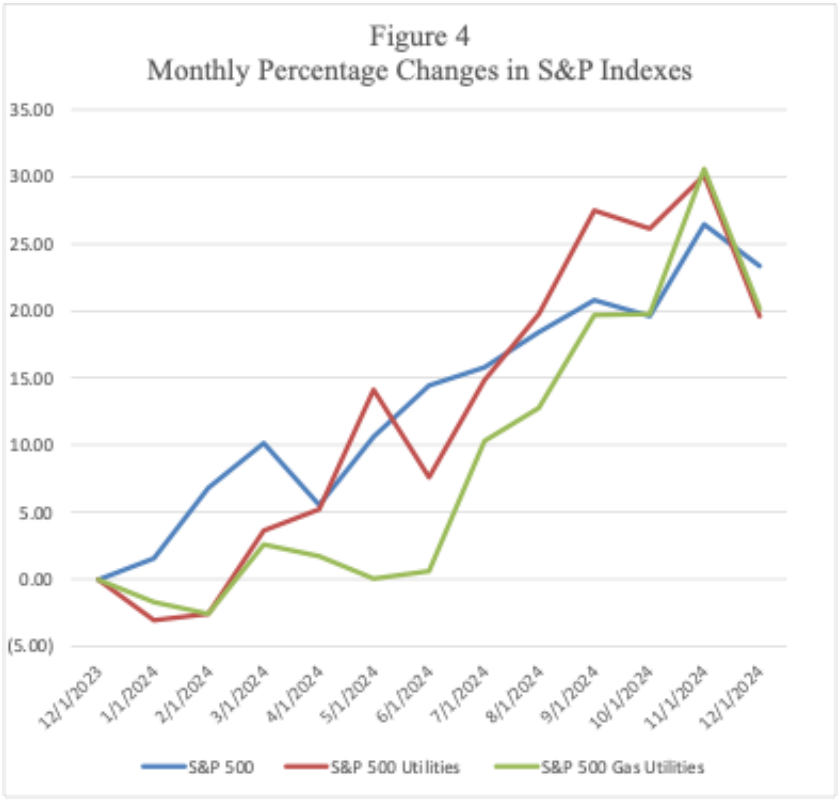
[7] Historical Data for Cboe VIX Index and Other Volatility Indices, CBOE, https://www.cboe.com/tradable_products/vix/vix_historical_data/.

Figure 3 shows the significant increase in market volatility during March 2023 and again in December 2024. The yearly average VIX for 2024 was 15.55. By way of comparison, the average VIX values for 2022 and 2023 were 25.64 and 16.84, respectively. Overall, there was lower stock market volatility on average in 2024 than the last two years.

Q. How have utilities fared recently compared to the overall stock market?

A. Utilities fared well in 2024. For the year 2024, the Standard and Poor's ("S&P") 500 Utilities index rose 20.16% and the S&P Gas Utilities Index rose 19.58%. In comparison, the S&P's 500 index increased 23.3%. Figure 4 below presents the monthly percentage changes in these three indexes in 2024. This data was obtained from S&P Capital IQ.

Figure 4
Monthly Percentage Changes in S&P Indexes



The robust 2024 returns for the stock market and the accompanying S&P utility indexes were all well above the long-run historical average yearly return on the S&P 500, which is about 12%.

III. DETERMINATION OF FAIR RATE OF RETURN

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

A. I employed two methods of estimating the ROE for Atmos: the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). I applied these ROE estimation techniques to a group of seven proxy gas distribution companies that was developed by Company witness D'Ascendis and supplemented by me with an additional company. My DCF analyses are based on the standard constant growth form of the model that employs four different growth rate forecasts from the Value Line Investment Survey, S&P Capital IQ, and Zacks. I also employed Capital Asset Pricing Model ("CAPM") analyses using both historical and forward-looking data, as well as sources that provide additional recommendations for the market risk premium portion of the CAPM. The results from the DCF and CAPM support the reasonableness of my ROE recommendation to the Commission.

DCF Model

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 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 different 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

Using this formula, it is apparent that "k" must reflect 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. Please describe your approach for selecting a proxy group of companies.

A. My first step was to choose a proxy group of companies with a risk profile that is reasonably reflective of the risks facing a low risk, regulated gas distribution utility such as Atmos. I reviewed the gas proxy group selected by Mr. D'Ascendis and the selection criteria he used. This proxy group consisted of regulated natural gas distribution companies from the Value Line Investment Survey. Mr. D'Ascendis presented his selection criteria for this group on page 14 of his Direct Testimony.

Mr. D'Ascendis' selection criteria are reasonable. However, the proxy group consists of only six companies, which could raise concerns regarding the relatively small size of the group. I reevaluated Chesapeake Utilities in this case and decided that it could reasonably be included in my gas proxy group. First, according to Value Line, 70.6% of Chesapeake Utilities' revenue is derived from regulated energy operations consisting of gas distribution and transmission operations and electric operations. Second, Chesapeake Utilities carries a Value Line Safety Rank of 2, consistent with the other companies in the proxy group. Third, although Chesapeake Utilities does not have a credit rating from Moody's or S&P, it is a financially healthy company based upon my review of its 2023

Annual Report. There was nothing in its financial reports that would suggest it would not carry an investment grade credit rating. Thus, I chose to include Chesapeake Utilities in my proxy group, bringing the total number of companies to seven.

Finally, although I expanded the proxy group from the group used by Mr. D'Ascendis, I evaluated the DCF and CAPM applications to the proxy group he used as well. This will provide additional information to the Commission regarding the ROE results for our two proxy groups.

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_0/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 1 through December 31, 2024. I averaged daily stock prices from S&P Capital IQ for 1-month, 2-month, 3-month, and 6-month periods. The current dividend for each company was taken from the December 27, 2024 issue of Value Line's *Summary and Index.*

The resulting average 6-month dividend yield for the proxy group is 3.53%. For Mr. D'Ascendis' proxy group, the 6-month average dividend yield is 3.76%. These calculations are shown in Exhibit RAB-2.

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: Value Line, S&P Capital IQ, and Zacks.

Q. Please briefly describe Value Line, S&P Capital IQ, and Zacks.

A. Value Line 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 water 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, S&P Capital IQ also compiles and reports consensus analysts' forecasts of earnings growth.

In the past I used Yahoo! Finance to obtain consensus analysts earnings growth forecasts. However, at the time I prepared my analyses and testimony Yahoo! Finance no longer presented these forecasts.

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

A. ROE analysis is a forward-looking process. Five-year or ten-year historical growth rates may not accurately represent investor expectations for future dividend and earnings 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.

Mr. D'Ascendis also relied on analysts' forecasts for growth, although he did not use Value Line's forecasted dividend growth. I will address this further in Section IV of my testimony.

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

Q. Columns (1) through (4) of Exhibit RAB-3 show the forecasted dividend and earnings growth rates from Value Line and the earnings growth forecasts from S&P Capital IQ and Zacks for the companies in the proxy group. It is important to include dividend growth forecasts in the DCF model since the model calls for forecasted cash flows and Value Line is the only source of which I am aware that forecasts dividend growth.

There were Zacks forecasts that were unavailable for three companies in the proxy group: Chesapeake Utilities, New Jersey Resources, and Northwest Natural

Holding Co. With three out of the seven Zacks forecasts missing, I chose to use the S&P Capital IQ growth rates for these companies to fill out the missing Zacks numbers. In my view, this is a reasonable approach since the S&P Capital IQ growth rates are consensus forecasts similar to Zacks.

Q. Using this information, how did you determine the DCF ROE 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 RAB-3 presents my standard method of calculating dividend yields, growth rates, and ROE for the proxy group. The proxy group DCF ROE section shows the application of each of four growth rates to the current dividend yield of 3.53% to calculate the expected dividend yield. I then added the expected growth rates to the expected dividend yield. My DCF ROE was calculated using two different methods. Method 1 uses the average growth rates for the proxy group and Method 2 utilizes the median growth rates.

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

A. For Method 1 (average growth rates), the results range from 8.25% to 9.75%, with the average of these results being 9.33%. For Method 2 (median growth rates), the results range from 8.11% to 10.14%, with the average of these results being 9.46%.[8]

I also applied this approach to Mr. D'Ascendis' proxy group and the ROE results are shown on page 2 of Exhibit RAB-3. The average results are somewhat lower, ranging from 9.23% to 9.36%.

Capital Asset Pricing Model

Q. Briefly summarize the 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.

[8] Refer to Exhibit RAB-4, page 1 for these results.

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. 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 ("MRP"). The general level of risk aversion in the economy determines the MRP. If the risk-free rate of return is 3.0% and the required return on the total market is 10%, then the risk premium is 7%. Any

stock's risk premium can be determined by multiplying its beta by the MRP. Its total return may then be estimated by adding the risk-free rate to that 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 ROE?

A. Yes. There is some controversy surrounding the use of the CAPM and its accuracy regarding expected returns. There is substantial 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. Dr. Burton Malkiel, author of *A Random Walk Down Wall Street* noted the following in his best-selling book on investing:

> Second, as Professor Richard Roll of UCLA has argued, we must keep in mind that it is very difficult (indeed probably impossible) to measure beta with any degree of precision. The S&P 500 Index is not "the market." The total stock market contains many thousands of additional stocks in the United States and thousands more in foreign countries. Moreover, the total market includes bonds, real estate, commodities, and assets of all sorts, including one of the most important assets any of us has - the human capital built up by education, work, and life experience. Depending on exactly how you measure "the market" you can obtain very different beta values.[9]

Shannon Pratt and Roger Grabowski, authors of *Cost of Capital*, also stated the following with respect to the CAPM:

> Even though the capital asset pricing model (CAPM) is the most widely used method of estimating the cost of equity capital, the

[9] Burton G. Malkiel, A Random Walk Down Wall Street, 219 (2023 ed.)

> accuracy and predictive power of beta as the sole measure of risk have increasingly come under attack. As a result, alternative measures of risk have been proposed and tested. That is, despite its wide adoption, academics and practitioners alike have questioned the usefulness of CAPM in accurately estimating the cost of equity capital and the use of beta as a reliable measure of risk.[10]

As a practical matter, there is substantial judgment involved in estimating the required market return and MRP. 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 analyst to estimate such a broad-based return. Often in utility cases, a market return is estimated using the S&P 500. However, as Dr. Malkiel pointed out, this is a limited source of information with respect to estimating the investor's required return for all investments. In practice, the total market return and MRP estimates face limitations to estimation and, ultimately, their usefulness in quantifying the investor required CAPM ROE.

In the final analysis, a considerable amount of judgment must be employed in determining the market return and expected risk premium elements of the CAPM equation. The analyst's application of judgment can significantly influence the results obtained from the CAPM. My 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 challenge in obtaining a reliable estimate from the CAPM.

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

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[10] Shannon Pratt & Roger Grabowski, Cost of Capital 269 (5th ed 2014).

A. I used three approaches to estimate the MRP portion of the CAPM equation. First, I will present an approach that uses the expected return on the market and is forward-looking. Second, I will present an approach that employs three historical MRPs based on actual stock and bond returns. Third, I will present four published sources that estimate the current investor required MRP.

Q. Please describe your forward-looking approach to estimating the MRP.

A. The first source I used was the Value Line *Summary and Index* dated December 27, 2024. The Value Line *Summary and Index* provides data with which one may calculate a DCF estimate on the companies that Value Line follows. Value Line presents a median estimated dividend yield for all dividend paying stocks (2.00%) and the median estimated 3–5-year price appreciation potential of all stocks in the Value Line universe (40%). The estimated 3-5-year appreciation estimate translates into an annualized appreciation number, or growth rate, of 8.78%. I present Value Line's projected annual returns on page 1 of Exhibit RAB-4. The DCF ROE result for the market is 10.78%.

Q. Please continue with your MRP analysis.

A. The second source I considered came from Kroll, which compiled a study of historical returns on the stock market in its *Cost of Capital Navigator: U.S. Cost of Capital Module* and is part of its Cost of Capital Navigator subscription service. Kroll provides services to clients in 140 countries covering valuation, compliance and regulation, corporate finance and restructuring, and other areas. Kroll now

provides the Cost of Capital Navigator service that was formerly provided by Duff and Phelps.

Some analysts employ historical data to estimate the MRP of stocks over the risk-free rate. The assumption is that a risk premium calculated over a long period of time is reflective of investor expectations going forward. Exhibit RAB-4, page 2, presents the calculation of the market returns and MRPs using the historical data from Kroll.

Q. Please explain how these historical MRPs are calculated.

A. Exhibit RAB-4, page 2, shows the arithmetic average of yearly historical stock market returns over the historical period from 1926 – 2023. The average annual income return for the 20-year Treasury bond is subtracted from these historical stock returns to obtain the historical MRP of stock returns over long-term Treasury bond income returns. The resulting historical MRP is 7.17%.

Q. Did you add any additional measures of historical risk premiums in this case?

A. Yes. Kroll 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.[11] Kroll noted that this growth in the P/E ratio for stocks was subtracted out of the historical risk premium to arrive at an

[11] *Kroll Cost of Capital Navigator: U.S. Cost of Capital Module*, Basic Building Blocks of the Cost of Equity Capital – Risk-free Rate and Equity Risk Premium (Abridged), pp. 4 – 6.

adjusted "supply side" historical arithmetic MRP. The most recent "supply side" historical MRP is 6.22%, which I have also included in Exhibit RAB-4, page 2.

Q. Is there additional evidence that the growth in the P/E ratio should be removed from the historical risk premium?

A. Yes. William Goetzman and Roger Ibbotson wrote the following regarding the supply-side approach to estimating the equity risk premium:

> There are several ways in which one might estimate an expected risk premium used for forecasting. One way is to extrapolate historical risk premiums, as did Ibbotson and Sinquefield. Another is to use investor demand models based upon investor risk aversion, as did Mehra and Precott. A third way is to look at the type of returns that the corporate sector supplies. Diermeir, Ibbotson, and Siegel (1984) and later Ibbotson and Chen (2003) used this supply approach. They extrapolated the cash flows and earnings growth generated by companies themselves. These forecasts tend to give somewhat lower historical risk premiums, primarily because part of the total return of the stock market has come from price-to-earnings ratio expansion. This expansion is not predicated to continue on indefinitely and is removed from the expected risk premium.[12]

Q. Are there other concerns regarding using the use of historical MRPs for estimating the investor required ROE?

A. Yes. A historical MRP calculated over a long period of time may not reflect current investor expectations and requirements. For example, Pratt and Grabowski presented a detailed discussion of the sources of potential upward bias and overstatement of the long-term historical risk premium.[13] One potential source of bias they analyzed was the historical period of 1942 – 1951, which included

[12] William N. Goetzmann & Roger G. Ibbotson, Handbook of the Equity Risk Premium 522-523 (Rajnish Mehra ed., Elsevier B.V., 2008).

[13] Pratt and Grabowski, Cost of Capital, 119 (Wiley, 5th ed.)

government-imposed stability in interest rates for government bonds during the Second World War. Pratt and Grabowski named this period "WWII Interest Rate Bias" and estimated that it resulted in an overstatement of the long-run historical risk premium of 117 basis points, or 1.17%. Pratt and Grabowski also considered the supply-side MRP, which I considered and presented earlier.

Kroll analyzed and calculated the so-called World War II Interest Rate Bias and subtracted it from the supply-side ERP of 6.22%, resulting in an adjusted historical ERP of 5.24%. I also present this historical ERP on page 2 of Exhibit RAB-4.

In addition to the foregoing discussions, Dr. Aswath Damodaran of the Stern Business School observed the following regarding the use of historical MRPs:

> Given how widely the historical risk premium approach is used, it is surprising that the flaws in the approach have not drawn more attention. Consider first the underlying assumption that investors' risk premiums have not changed over time and that the average risk investment (in the market portfolio) has remained stable over the period examined. We would be hard pressed to find anyone who would be willing to sustain this argument with fervor. The obvious fix for this problem, which is to use a more recent time period, runs directly into a second problem, which is the large noise associated with historical risk premium estimates. While these standard errors may be tolerable for very long time periods, they clearly are unacceptably high when shorter periods are used.[14]

Although the simple, unadjusted long-run historical risk premium is widely used and available to investors, it is flawed and likely to overstate the investor

[14] *Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – The 2022 Edition, Updated: March 23, 2022*, Aswath Damodaran, Stern School of Business.

expected risk premium for forecasting purposes. It should be viewed with caution and supplemented with other sources as I have done here.

Q. Did you consider any other sources for estimating the MRP?

A. Yes, I also considered four other sources for estimating the MRP.

First, Kroll provides a recommendation for the MRP for the United States. Its recommended MRP as of June 6, 2024 is 5.00%.[15]

Second, KMPG Corporate Finance and Evaluations produces an estimate of the MRP based on its market valuation analyses. The markets included in KMPG's analyses are the S&P 500, Financial Times Stock Exchange (FTSE), and STOXX 600. As of September 30, 2024, KMPG recommended a MRP of 5.0%.[16]

Third, Dr. Aswath Damodaran provides monthly estimates of the MRP using what he calls an implied risk premium approach. Dr. Damodaran is a professor of finance at the Stern School of Business at New York University and is a researcher on the topic of MRPs, among other things. As of January 1, 2025, Dr. Damodaran estimated an MRP in the range of 3.81% - 6.15%, with an average of 4.49%.[17]

Fourth, Pablo Fernandez, Diego Garcia, and Lucia Acin prepared and published a study entitled *Survey: Market Risk Premium and Risk-Free Rate used*

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[15] https://www.kroll.com/-/media/kroll-images/pdfs/kroll-lowers-its-recommended-us-equity-risk-premium-effective-june-5-2024.pdf

[16] https://indialogue.io/clients/reports/public/5d9da61986db2894649a7ef2/5d9da63386db2894649a7ef5.

[17] Aswath Damodaran, Damodaran Online (last visited January 4, 2025), https://pages.stern.nyu.edu/~adamodar/New_Home_Page/home.htm.

for 96 countries in 2024.[18] This is a comprehensive survey of finance and economics professors, analysts, and managers of companies regarding their expectations for the market risk premium and risk-free rate for purposes of calculating the required return on equity in various countries. This survey has been published yearly since 2008. The authors received 1,287 survey responses for the MRP and risk-free rate for the United States. The average and median MRP for 2024 was 5.50%.

These MRPs are presented on page 3 of Exhibit RAB-4.

Q. How did you determine the risk-free rate?

A. I considered a six-month average of the 30-year Treasury bond yield from July through December 2024. These yields are shown in Exhibit RAB-4, page 1. The six-month average 30-Year Treasury Bond yield is 4.36%. This six-month period tracks the six-month period I used for stock prices in my DCF analyses. However, the yield rose significantly from September (4.04%) to December (4.58%). Given the sharp rise in yield, I have chosen to use the December 2024 yield as the risk-free rate in this case.

Q. Please summarize your calculated MRP estimates with the forward-looking data from Value Line, the historical MRPs, and the four other sources you described.

A. The MRPs from Exhibit RAB-4, pages 1 through 3 are as follows:

- Value Line forward-looking risk premium 6.20%
- Historical risk premium 5.24% - 7.17%

[18] Fernandez, Garcia, and Acin, *Survey: Market Risk Premium and Risk-Free Rate used for 96 countries in 2024*, IESE Business School, March 10, 2024. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4754347.

- Kroll 5.00%
- KMPG 5.00%
- IESE Survey 5.50%
- Average Damodaran MRP 4.49%

Q. How did you determine the value for beta?

A. I used two sources in this case. I obtained the betas for the companies in the proxy group from the most recent Value Line report (November 22, 2024) at the time I prepared my Direct Testimony and analyses. The average of the Value Line betas for the proxy group is 0.90.[19]

The second source, which is new for me, is from S&P Capital IQ. S&P publishes 5-year betas for each company in the proxy group. These betas, however, are what is known as "raw betas", which means they are not adjusted for beta's tendency to rise toward the market beta of 1.0 over time. Value Line adjusts its betas for this tendency and an adjusted beta is thought to be superior for forecasting purposes to the "raw" unadjusted beta. In order to adjust the raw S&P Capital IQ betas, I employed a commonly used formula called "the Blume Adjustment" or "the Bloomberg Adjustment". The formula is as follows:

Adjusted beta = (Raw beta * 0.67) + .33

[19] Refer to Exhibit RAB-4, page 1.

This formula results in upward adjustments to beta values less than 1.0, which is the case for all the gas distribution companies in the proxy group. The adjusted betas are shown on page 1 of Exhibit RAB-4. The average adjusted beta for the proxy group is 0.76.

For the CAPM I used the average of these two sources for beta, which was 0.83.

Q. Please summarize the CAPM results.

A. The forward-looking CAPM ROE estimate is 9.71%.[20] Using historical risk premiums, the CAPM results range from 8.92% to 10.52%.[21] For the Kroll, KMPG, IESE Survey, and Damodaran MRPs, the CAPM estimates range from 8.30% to 9.14%.[22]

Recommended ROE and Capitalization

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

A. Table 1 summarizes my ROE results using the DCF and CAPM for the proxy group.

[20] *Id*.

[21] *Id*. at page 2.

[22] *Id*. at page 3.

TABLE 1
SUMMARY OF ROE ESTIMATES

DCF Methodology	
Average Growth Rates	
- High	9.75%
- Low	8.25%
- Average	9.33%
Median Growth Rates:	
- High	10.14%
- Low	8.11%
- Average	9.46%
CAPM Methodology	
Forward-lookng Market Return:	9.71%
Historical Risk Premium:	
- Arithmetic Mean	10.52%
- Supply side MRP	9.73%
- Supply side Less WWI Bias	8.92%
Kroll MRP	8.72%
KMPG MRP	8.72%
IESE MRP Survey	9.14%
Damodaran MRP	8.30%

Q. What is your recommended ROE for Atmos?

A. I recommend that the Commission adopt an ROE of 9.40% for Atmos. This recommendation is consistent with the midpoint between the average and median growth rate DCF ROE estimates and falls within the range of CAPM estimates as well.

Q. Did you review the Company's requested capital structure in this case?

A. Yes. I reviewed the Direct Testimony of Atmos witness Christian. Mr. Christian recommended that the Commission approve a capital structure that includes 60.88% common equity.

Q. Is a 60.88% common equity reasonable?

A. No, a 60.88% common equity ratio is unreasonable and should be rejected by the Commission.

Q. Briefly review the Commission's Order regarding the Company's capital structure in Case No. 2021-00214.

A. In Atmos' last rate case, the Commission rejected the Company's request for a capital structure consisting of 57.59% common equity ratio and instead approved 54.50%. On page 37 of its Order, the Commission stated the following:

> In the final Order of Case No. 2018-00281, the Commission voiced its concern over the size of Atmos Kentucky's common equity ratio and agreed with the Attorney General that it was excessive compared to its peers and results in an increase in the cost of capital and base revenue requirement. The Commission accepted the filed equity component but cautioned Atmos Kentucky about the high common equity ratio and placed Atmos Kentucky on notice that in a future rate filing, the Commission may make adjustments to Atmos Kentucky's common equity ratio, for ratemaking purposes, to be comparable to its peers.

The Commission found the following regarding Atmos' common equity ratio on page 38:

> The Commission finds that the proposed capital structure as filed and revised upon rebuttal is not reasonable nor does it result in fair and just rates for Kentucky's consumers. The Commission finds Atmos Kentucky's common equity ratio shall be reduced to 54.50 percent. This represents the median for the 2024-2026 prospective period. In addition, in subsequent rate case filings, the Commission will review the proxy group common equity ratios and will further transition down to the average common equity ratio of 50.0 percent or a median or average, whichever the facts merit. The Commission will place the equity balance onto long-term debt at Atmos Kentucky's current average long-term debt rate of 3.84 percent.

In this case, Atmos is asking the Commission to increase its common equity ratio over and above the 57.59% common equity that was very clearly rejected in the last case as being excessive and unreasonable. Mr. Christian provided no

substantive basis or other analysis that would have the Commission reverse itself from its Order in Atmos' last rate case.

Q. Did you analyze the common equity ratios for the companies in your proxy group?

A. Yes. Table 2 provides the 2023 and 2024 common equity ratios for the proxy group from the Value Line Investment Survey.

Table 2
Atmos Energy
OAG Equity Ratio Analysis

	2023	2024	2027 - 2029
Company			
Atmos Energy	62.10%	60.00%	60.00%
Chesapeake Utilities	51.20%	53.50%	52.00%
New Jersey Resources	41.80%	42.50%	45.00%
NiSource	45.50%	46.00%	45.00%
Northwest Natural Holding Company	47.40%	47.50%	45.00%
One Gas, Inc.	56.20%	54.00%	49.00%
Spire	41.30%	45.00%	45.00%
Average	49.36%	49.79%	48.71%
D'Ascendis Proxy Group Average	49.05%	49.17%	48.17%

Sources: Value Line Investment Survey

Table 3 shows that the 2024 average common equity ratio is expected to be 49.79% for my proxy group and 49.17% for Mr. D'Ascendis' proxy group. For the forecasted 2027 – 2029 period the common equity ratios are expected to decline slightly. Similar to Case No. 2021-00214, Atmos has by far the highest common equity ratio in either proxy group.

Q. Are you familiar with recent or current gas distribution cases before the Commission in which the companies requested lower common equity ratios than Atmos is requesting in this case?

A. Yes. In Case No. 2024-00092, Columbia Gas of Kentucky requested a common equity ratio of 52.64%.[23] I testified in that proceeding in support of the company's request.

Case No. 2024-00346 involves Delta Gas Company and is currently pending before this Commission. Intervenor testimony has yet to be filed. In that proceeding, Delta is requesting common equity ratio of 52.76%.[24]

Q. Given your discussion, what is your recommendation for Atmos' common equity ratio?

A. I recommend that the Commission approve a common equity ratio of 52.5% for Atmos. My recommendation is consistent with the Commission Order in Case No. 2021-00214, as it continues to move Atmos' common equity ratio toward the average of the proxy group. In addition, a 52.5% common equity ratio is consistent with recent capital structure requests from gas distribution companies as I have just described.

Mr. Christian's recommended common equity ratio of 60.88% is excessive when compared to the proxy group and to other gas distribution companies in Kentucky. A 60.88% common equity ratio would simply inflate the Company's revenue requirement to the detriment of Kentucky ratepayers. The Company's requested common equity ratio should be rejected.

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[23] See the Direct Testimony of Vincent Rea, page 53.

[24] See the Direct Testimony of Paul Moul, page 15.

Q. Please summarize the Commission's finding regarding Atmos' Pipeline Replacement Rider ("PRP") from Case No. 2021-00214.

A. In its Order in Case No. 2021-00214, the Commission stated the following:

"… the Commission finds that an ROE of 9.23 percent for Atmos Kentucky's base rates and an ROE of 9.13 percent for its natural gas capital riders is fair, just and reasonable."[25]

In the Company's last rate case, I argued that the PRP should carry a lower ROE than Atmos' overall ROE due to its lower risk of cost recovery. Specifically, I testified as follows:

"The PRP Rider enables Atmos to include qualifying investments for collection though the rider, with yearly filings that are approved by the Commission. This treatment enables the Company to collect the costs of these investments without filing yearly full rate cases. Investments included in the PRP Rider are allowed to earn a return based on Atmos's approved weighted cost of capital."[26]

A lower ROE on capital riders like the PRP is consistent with Commission policy. I recommend that the Commission continue its practice and authorize a lower ROE of 9.30% on its allowed investments collected through the PRP.

In addition, Mr. Kollen is addressing the Company's proposed Pipeline Modernization ("PM") rider in his Direct Testimony. The OAG is opposed to this new rider. However, if the Commission decides to adopt this rider, I recommend that a 9.30% ROE be applied to investments collected through it in a similar fashion to the existing PRP.

[25] Case No. 2021-00214, Order dated May 19, 2022, page 48.

[26] Baudino Direct Testimony, page 33, lines 1 through 5, Case No. 2021-00214.

IV. RESPONSE TO ATMOS ENERGY ROE TESTIMONY

Q. Please summarize your conclusions with respect to Mr. D'Ascendis' ROE recommendation.

A. Mr. D'Ascendis' recommended 10.95% ROE is grossly excessive, would inflate Atmos' revenue requirement, harm Kentucky ratepayers, and should be rejected by the Commission. The remainder of this Section of my testimony will present my points of disagreement with Mr. D'Ascendis and how his CAPM and risk premium analyses in particular contributed significantly to an inflated ROE recommendation for Atmos.

Q. How did Mr. D'Ascendis develop his recommended ROE range for the Companies?

A. On page 4 of his Direct Testimony, Mr. D'Ascendis presented the range from the application of the models he used, which was 9.93% to 12.05%, then increased this range by 0.05% for a size adjustment, by -0.04% for a credit risk adjustment, and by 0.06% for flotation costs. This resulted in an adjusted ROE range for the Company of 10.12% to 12.12%. From this range of results, he recommended a 10.95% ROE for Atmos.

Q. How did Mr. D'Ascendis develop his recommended range of 10.12% to 12.12% from the results of his various ROE analytical methods?

A. Table 2 in Mr. D'Ascendis' Direct Testimony provides the following summary of results from his analyses:

DCF Model	9.93%
Risk Premium Model	10.80%
CAPM	11.36%

Market Models Applied to Non-Price Regulated Group 12.05%

In footnote 3, Mr. D'Ascendis noted that his recommended range excluding the Predictive Risk Premium Model ("PRPM") is 9.93% to 11.97%.

I calculated that the midpoint of Mr. D'Ascendis' ROE range is 11.12%. His recommended ROE is below this midpoint.

Q. Did Mr. D'Ascendis provide recently commission-allowed ROEs in his work papers?

A. Yes. Mr D'Ascendis provided commission-allowed ROEs in his work papers supporting one of his market risk premium estimates. For 2023, the average commission-allowed ROE was 9.71%. For 2024, Mr. D'Ascendis provided three ROE awards, two ranging from 9.40% to 9.50% and one at 11.88%. The 11.88% ROE award was for a small gas utility in Alaska, ENSTAR Natural Gas Company. This ROE is a clear and obvious outlier when compared to the range of commission-allowed ROEs in Mr. D'Ascendis' work papers from 2023 – 2024, which is 9.38% - 10.50% excluding ENSTAR.

I do not recommend that the KPSC base its ROE award for Atmos on the ROE awards from other commissions around the country. Rather, I recommend that the Commission base its decision on the evidence provided in this case. Nevertheless, the ROE data shows that Mr. D'Ascendis' recommended ROE of 10.95% significantly higher than the top end of the allowed ROE range. Indeed, Mr. D'Ascendis' recommendation is also a clear and obvious outlier.

DCF Analyses

Q. Please comment on Mr. D'Ascendis' DCF analyses.

A. Mr. D'Ascendis presented the results of his DCF analyses in his Exhibit DWD-2. He presented both the average (9.95%) and median (9.91%) results for the proxy group. The average of these two results are 9.93%. Mr. D'Ascendis utilized earnings growth rates from Value Line, S&P Capital IQ, Yahoo! Finance, and Zacks to develop his DCF ROE estimates. These are all commonly cited sources of earnings growth forecasts. While Mr. D'Ascendis relied upon Value Line's earnings growth forecasts, which I support, he also should have considered Value Line's dividend growth forecast as I did. I agree with Mr. D'Ascendis' statement on page 18 of his Direct Testimony that security analysts' earnings growth forecasts have a more significant influence on market prices than dividend expectations. However, because dividend payments are such a significant portion of the total return to utility shareholders, forecasted dividend growth should also be considered and Value Line is a trusted source of this information to investors.

I note that my DCF results are lower than Mr. D'Ascendis' results. This is primarily owed to my using updated stock prices and growth rates, as well as Value Line's projected dividend growth rates. Limiting his DCF analysis by not including dividend growth forecasts overstated his DCF results.

Risk Premium Model Analyses

Q. Before you address the specifics of Mr. D'Ascendis' risk premium model ("RPM") analyses, do you have any general comments regarding the risk premium method of estimating the investor required ROE for regulated utilities?

A. Yes. The bond yield plus RP approach is imprecise and can only provide very general guidance on the current authorized ROE for a regulated electric utility.

Historical risk premiums can change substantially over time based on investor preferences and market conditions. As such, this approach is a "blunt instrument," if you will, for estimating the ROE in regulated proceedings. In my view, a properly formulated DCF model using current stock prices and growth forecasts is far more reliable and accurate than the bond yield plus risk premium models that rely on an historical analysis of risk premiums.

As I will explain, much of Mr. D'Ascendis' RPM analyses are based on historical risk premium analyses that may have no relevance in today's marketplace. Regarding his use of more forward-looking analyses, Mr. D'Ascendis systematically overstated his risk premiums. Both of these general problems led directly to excessive MRP ROEs for Atmos.

Q. Summarize and describe Mr. D'Ascendis' approach to estimating the expected Risk Premium Method ("RPM") ROE.

A. First, Mr. D'Ascendis described the total market using beta approach to estimating the RP beginning on page 20 of his Direct Testimony. This method adds the prospective yield on a public utility bond (5.59%) to the average of (1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, (2) an equity risk premium based on the S&P Utilities Index, and (3) an equity risk premium based on authorized ROEs for natural gas distribution utilities.

The beta-adjusted total market equity risk premium is actually composed of three historical market data-based equity risk premiums, a Value Line-based equity risk premium, and a combined Value Line, Bloomberg, and S&P Capital IQ-based equity risk premium. These RPs are summarized on page 31, Table 6 of Mr.

D'Ascendis' Direct Testimony. The risk premiums range from 5.96% to 10.33%, with an average of 7.70%.

Mr. D'Ascendis included a RP approach using the PRPM, which I mentioned earlier in my testimony.

Q. Did Mr. D'Ascendis use historical market returns as one method of estimating the MRP?

A. Yes. In Exhibit DWD-3, page 6 Mr. D'Ascendis showed that he used the "Ibbotson Equity Risk Premium" as one way of determining the MRP. He explained in that exhibit that the MRP was based on historical monthly returns on large company common stocks from Kroll and Bloomberg less the arithmetic mean monthly yield of Moody's average Aaa/Aa2 corporate bonds from 1928 – 2023.

Q. Did Mr. D'Ascendis address the potential for the overstatement of historical risk premiums that you addressed in discussing the CAPM MRP earlier in your testimony?

A. No. There is credible analysis that historical risk premiums may be overstated due to (1) rising price/earnings ratios that are not expected to persist and (2) the "World War II bias", both of which I explained in Section III of my Direct Testimony. Mr. D'Ascendis did not address these two potential sources of overstatement of the MRPs in his historical analysis.

Q. Did Mr. D'Ascendis use regression analyses to forecast risk premiums?

A. Yes. Mr. D'Ascendis explained the derivation of his regression-based market risk premium on page 23 of his Direct Testimony. He calculated an MRP of 6.98% by attempting to model the relationship between interest rates and the MRP using the

yield on Moody's Aaa/Aa-rated corporate bonds as the independent variable and the monthly market risk premium as the dependent variable. I examined Mr. D'Ascendis' analysis and regression results included in his work paper MRP ERP WP.

Q. Was Mr. D'Ascendis' regression analysis statistically valid and does it form a sound basis for forecasting the expected risk premium?

A. No. There are statistical tests that are part of regression analyses that are designed to test the validity of the model and how well the model explains and predicts what is going on with the data set. One bedrock test is called the R-squared statistic, also referred to as the coefficient of determination. R-squared measures the proportion of variance in the dependent variable (the monthly risk premium) that is explained by the independent variable (corporate bond yields). R-squared results fall between 0 and 1. A higher value indicates that the model explains more of the total variation in the dependent variable. For example, an R-squared of .80 means that the model explains 80% of the variation and may be a good predictive model.

However, Mr. D'Ascendis' regression analysis has an R-squared of only .0276, meaning that his model only explains about 2.76% of the total variation in historical market risk premiums. This is a poor result and means that his model cannot and should not be relied upon to predict market risk premiums based on changes in bond yields.

Another measure of statistical accuracy, the t-statistic, shows that the independent variable, bond yields, is statistically significant in his regression model. This means it is a factor in predicting market risk premiums, but the overall

explanatory power of the model is so poor that it cannot be used accurately for forecasting purposes. The Commission should reject Mr. D'Ascendis' regression-based risk premium of 6.98%.

Q. Did Mr. D'Ascendis use regression equations to estimate risk premiums elsewhere in his analyses?

A. Yes. Mr. D'Ascendis employed two other regression analyses to estimate risk premiums. These are as follows:

- Regression analysis of monthly historical equity risk premiums between the S&P Utility Index and Moody's A2-rated public utility bond yields. This resulted in a risk premium of 4.86%.
- Regression analysis of the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government Securities. This analysis resulted in a market equity risk premium of 7.99% that was used in Mr. D'Ascendis' CAPM analysis.

Q. Were these two regression analyses similarly flawed in terms of low R-squared statistics?

A. Yes. The regression analysis of monthly historical equity risk premiums between the S&P Utility Index and Moody's A2-rated public utility bond yields had an R-squared value of only 0.013. Regression analysis of the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government Securities had an R-squared value of only 0.019. These two R-squared values are even lower than the 0.0276 R-squared value I mentioned previously.

To sum up, the two regression analyses Mr. D'Ascendis used to estimate risk premiums for his Risk Premium ROE and the one he used for his CAPM ROE have little, if any, predictive value and should not be relied upon by the Commission.

Q. Briefly summarize Mr. D'Ascendis' PRPM analysis.

A. Mr. D'Ascendis described his PRPM approach beginning on page 24 of his Direct Testimony. According to Mr. D'Ascendis, the PRPM estimates the risk-return relationship by predicting volatility or risk. Mr. D'Ascendis testified that the PRPM is not based on an estimate of investor behavior, "but rather on an evaluation of the results of that behavior (*i.e.*, the variance of historical equity risk premiums.)"[27] The historical annual equity risk premium is generated using GARCH, generalized autoregressive conditional heteroscedasticity, and Eviews© statistical software. Mr. D'Ascendis relied on the monthly risk premiums between historical returns on the Ibbotson large company stocks and average Aaa and Aa corporate monthly bond yields, from January 1928 through July 2024. The PRPM risk premium result was 8.11%.

Q. Should the Commission rely on the PRPM developed and presented by Mr. D'Ascendis?

A. No. Mr. D'Ascendis did not show that the model he developed is relied upon by investors to determine their required ROE for regulated gas utilities. Neither did

[27] Direct Testimony of Dylan W. D'Ascendis, p. 24, lines 12 to 14.

he demonstrate that his PRPM is a widely accepted approach by regulatory commissions. The Kentucky Public Service Commission ("KY PSC") expressly rejected Mr. D'Ascendis' PRPM approach in Case Nos. 2021-00190 and 2021-00214. In its Order in Case No. 2021-00214, the Commission stated the following:

> Even though the Commission supports the use and presentation of multiple modeling approaches, the Commission finds that Atmos Kentucky's use of the Predictive Risk Premium Model (PRPM) should be rejected. Though the PRPM model has been published and presented in multiple forums, it has been rejected by this Commission and only been addressed by three other regulatory commissions thus far and is not universally accepted.[28]

Mr. D'Ascendis' PRPM approach was also rejected by the Florida Public Service Commission ("FPSC") in Docket No. 20200139-WS, with the FPSC made the following conclusion with respect to the PRPM:

> The only cost of equity model analysis that supports a 10.75 percent ROE is UIF witness D'Ascendis' Predictive Risk Premium Model (PRPM) with an average result of 11.66 percent. However, the record showed that the PRPM is based on the GARCH model, which used Eviews statistical software to derive a predictive equity risk premium, which is added to a projected risk-free rate. This method is akin to a black box calculation where the inputs were entered and a result was produced using statistical software. Witness D'Ascendis and his colleagues developed the PRPM method and admitted that it is used primarily by himself and other colleagues familiar with the methodology. The record failed to support that witness D'Ascendis' PRPM methodology is widely accepted by other jurisdictions as a method to estimate the equity risk premium. Therefore, we find that the cost of equity models using the PRPM shall be discounted in this case.[29]

[28] Case No. 2021-00214, Order, pages 47-48.

[29] Docket No. 20200139-WS, Order No. PSC-2021-0206-FOF-WS, June 4, 2021, page 94.

The "black box" aspect of Mr. D'Ascendis' PRPM is indeed a valid concern. Mr. D'Ascendis' workpapers contain variance results, GARCH series, and GARCH coefficients that were generated from the Eviews© software. Whether or not this information accurately portrays investor required returns and expectations is highly questionable. In fact, the "predictive" part of the PRPM consists of analyzing historical variances in risk premiums. The implicit assumption is that this historical behavior will persist into the future, which may not be correct.

In any event, using the 8.11% PRPM risk premium results in an excessive ROE result as follows:

(8.11% * .79) + 5.59% = 12.0% PRPM ROE

This ROE result is excessive in light of recent commission-allowed ROEs in 2023 and 2024. According to the commission-allowed ROE data supplied by Mr. D'Ascendis in his work papers, one would have to go back to 2004 to find commission-allowed ROEs in that range. The PRPM merely serves to inflate Mr. D'Ascendis' RPM results.

To conclude, the PRPM is based on historical risk premium relationships that may or may not hold for the future. We do not really know if investors expect the variance of historical risk premiums to continue or if they even use this information to assist them in determining their required ROE. We also do not know if investors would model the PRPM using Mr. D'Ascendis' assumptions. I

recommend that the Commission not gamble with considering the PRPM and continue to reject it in this proceeding.

Q. Did Mr. D'Ascendis' other RP estimates produce unreasonable results with respect to his total market using beta RPM ROE?

A. Yes. Earlier I cited the top end of Mr. D'Ascendis' RP range of 10.33%, which was the result for the combined Value Line, Bloomberg, and S&P Capital IQ-based equity risk premium. He also included a RP estimate of 7.15% based on Total Market Returns from Value Line's *Summary and Index*. Evaluating these RPs on their own would render the following RPM ROEs:

(10.33% * .79) + 5.59% = 13.75% ROE

(7.15% * .79) + 5.59% = 11.24% ROE

These ROE results are so far removed from current commission-allowed ROE and from the reality of current capital markets that they should be summarily rejected. These ROE results, along with the untenable ROE result from Mr. D'Ascendis' PRPM analysis heavily bias upward his RPM recommendation from the total market approach using beta.

To provide the Commission with some perspective, I reviewed the allowed ROEs and corresponding A-rated utility bond yields provided by Mr. D'Ascendis in his electronic work papers. Going back to 1991, the average commission-allowed ROE that year was 12.34%. The corresponding average A-rated bond yield was 9.36%. With the December 2024 Mergent A-rated utility bond yield at 5.60%,

it is implausible that investors would expect ROEs in the range of 12.12% - 13.75% in the current economic environment. The 12.12% and 13.75% RP ROE results are outliers, are completely unrepresentative of current investor required ROEs for regulated gas utilities and should be rejected by the Commission.

Q. Why are Mr. D'Ascendis' projected MRPs from Value Line's *Summary and Index* and Value Line, Bloomberg, and S&P Capital IQ so high?

A. The problem with Mr. D'Ascendis' projected MRP stems from overstated expected market returns of 12.24% (*Summary and* Index) and 15.42% (Value Line, Bloomberg and S&P). The expected average earnings growth rates that Mr. D'Ascendis used were 10.11% and 13.99%, respectively. I calculated these expected growth rates from Mr. D'Ascendis' workpapers. These earnings growth rates from Value Line, Bloomberg, and S&P Capital IQ are unsustainably high in that they vastly exceed both the historical capital appreciation for the S&P 500 as well as historical and projected GDP growth rates. Kroll's historical analysis shows that the arithmetic average capital appreciation for the S&P 500 was 7.9% for the historical period 1926 to 2022.[30] Geometric, or compound growth was 6.1%. This historical experience stands in stark contrast to Mr. D'Ascendis' forecasted growth rate of 13.99%.

Mr. D'Ascendis' unsustainable earnings growth forecasts are not supportable when one further considers both historical and forecasted GDP growth for the U.S. Based on data from the Bureau of Economic Analysis, U.S.

[30] Summary Statistics of Annual Total Returns, Income Returns, and Capital Appreciation Returns of Basic U.S. Asset Classes, 1926 - 2022, Cost of Capital Navigator: U.S. Cost of Capital Module.

Department of Commerce, I calculated that the compound yearly growth rate for U.S. GDP from 1929 to 2023 was 6.1%. It is noteworthy that this growth rate matched the historical compound growth rate for capital appreciation for the S&P 500 of 6.1% from Kroll.

Regarding forecasts of GDP, projections that I referenced in Section II of my testimony show even lower forecasted GDP growth than the historical average I calculated. For example, the Fed projections called for longer-run real GDP growth of 1.8% and PCE inflation of 2.0%. This translates into forecasted nominal GDP growth of 3.80% per year. The Congressional Budget Office also projects growth in real GDP through 2033 of 1.80% and CPI inflation of 2.0%.[31] If we assume forecasted long-run nominal GDP growth of around 4.0%, then Mr. D'Ascendis' constant growth rates for the market of 10.11% and 13.99% simply cannot be sustained over the long-run. Using such inflated growth rates will inevitably lead to an overstatement in the long-run expected market return, the associated MRP, and the ROE result.

In *Cost of Capital*, Pratt and Grabowski noted the following with respect to growth rates that significantly exceed growth in GDP:

> The growth rate assumed in calculating the terminal value is a compound growth rate *in perpetuity*, which is a very long time. At a growth rate of 20% compounded annually, the company's revenues would soon exceed the gross domestic product (GDP) of the United States and eventually that of the world. Long-term growth rates exceeding the real growth in GDP plus inflation are generally not sustainable. Most analysts use more conservative growth rates in calculating the terminal value. Generally, the long-term growth rate only applies to the existing enterprise or core business net cash

[31] Congressional Budget Office, *An Update to The Budget and Economic Outlook: 2024 - 2033*, June 2024. https://www.cbo.gov/publication/60419

> flows, consistent with the net cash flow projections in the discounted cash flow method . . . . [32]

Since the constant growth DCF requires a sustainable long-run growth rate, which Mr. D'Ascendis does not use, his projected market returns and MRP estimates are overstated and should be rejected.

Q. Beginning on page 33 of his Direct Testimony, Mr. D'Ascendis described an RP approach based on state utility regulatory commission-authorized ROEs. Please summarize and respond to this RP approach.

A. Mr. D'Ascendis explained that he conducted a regression analysis based on regulatory awarded ROEs related to the yields on Moody's A2-rated public utility bonds. This analysis purports to show the inverse relationship between utility bond yields and the investor required ROE. In other words, as bond yields decline the RP increases and vice versa.

This analysis assumes that investor required ROEs are deterministically based on historical average state utility regulatory commission-allowed ROEs and the RP relationship posited by Mr. D'Ascendis' regression analyses. Mr. D'Ascendis presented no evidence that investors in gas utility stocks adopt this mechanistic approach to formulate their expected ROEs.

CAPM and Empirical CAPM ("ECAPM")

Q. Please summarize the results of Mr. D'Ascendis' CAPM/ECAPM analyses.

[32] Shannon Pratt and Roger Grabowski, Cost of Capital 1195 (Wiley, 5th ed.)

A. Mr. D'Ascendis' Exhibit DWD-4, page 1, presents a summary of his CAPM/ECAPM analyses. The results range from 11.27% to 11.37%.

Q. Before you further analyze Mr. D'Ascendis' approach to the CAPM/ECAPM, please comment on the range of ROE results he presented.

A. In a similar fashion to his RP results that I discussed earlier, Mr. D'Ascendis' CAPM/ECAPM results are so grossly overstated for regulated gas utilities like Atmos that they should be rejected out of hand by the Commission. I referred back to the data Mr. D'Ascendis provided on commission-allowed ROEs and reviewed the average yearly allowed ROEs. One would have to go back to the year 2002 for an average allowed ROE anywhere close to the CAPM results Mr. D'Ascendis presented. In 2002, the average allowed ROE was 11.08% and the average A-rated utility bond yield was 6.66%. Compared to the December 2024 Mergent average utility bond yield of 5.60%, the average utility bond yield in 2002 was 1.06%, or 106 basis points higher. With current utility bond yields so much lower currently, CAPM ROE results in the 11.27% - 11.37% range are implausible and serve to inflate Mr. D'Ascendis' ROE recommendations.

Q. Summarize and describe Mr. D'Ascendis' approach to estimating the expected MRP for his CAPM/ECAPM analyses.

A. Mr. D'Ascendis presented five different RP analyses that he used to estimate the expected MRP for the CAPM/ECAPM. Mr. D'Ascendis explained on pages 39 and 40 of his Direct Testimony that his MRP was derived from an average of three historical data-based MRPs, one Value Line data-based MRPs, and one Value Line/Bloomberg/S&P Capital IQ data-based MRP.

The MRPs for each method are shown on the following page in Table 3.

TABLE 3

D'Ascendis CAPM MRP Results

Ibbotson Historical Data	7.17%
Regression Analysis on Ibbotson Historical Data	7.99%
Application of PRPM to Ibbotosn Historical Data	9.04%
Value Line Summary & Index	7.88%
MRP Based on Value Line/Bloomberg/S&P Data	11.06%
Average	8.63%

Q. Referring to the Ibbotson Historical MRP of 7.17%, did Mr. D'Ascendis evaluate the potential for overstatement based on the "supply-side" MRP and the "supply-side MRP less WWII bias" you discussed in the section on the CAPM?

A. No. I included the 7.17% MRP in my historical MRPs for the CAPM and also included the lower MRPs from the "supply-side" MRP and the "supply-side less WWII bias" MRP. These MRPs should be included in an objective evaluation of historical MRPs in the context of the CAPM. Mr. D'Ascendis' 7.17% Ibbotson MRP is thus very likely overstated and contributes to an excessive CAPM result.

Q. What is the CAPM result using the average of Mr. D'Ascendis' projected MRPs for the S&P 500, Value Line Data and Bloomberg Data?

A. The average of the projected MRPs for the Value Line *Summary and Index* and Value Line/Bloomberg/S&P data is 9.47%. Using Mr. D'Ascendis' risk-free rate of 4.36%, a proxy group average beta of 0.78, and the average projected MRP of 9.47%, the traditional CAPM result is:

*CAPM ROE = 4.36% + (0.79 * 9.47%) = 11.84%*

Mr. D'Ascendis' CAPM result using his projected Value Line *Summary and Index* and Value Line/Bloomberg/S&P MRPs is very much out of line with the allowed ROEs I cited earlier. Once again, I do not recommend that the Commission base its ROE determination on the allowed returns in other regulatory jurisdictions. Rather, I cited historical allowed returns as a rough benchmark by which the Commission can judge the reasonableness of Mr. D'Ascendis' CAPM results and how excessive they are compared to both past and recent experience. Indeed, a CAPM result of 11.84% is clearly unreasonable.

The source of the ROE overstatement is the excessive earnings growth rates that I described earlier in my response to Mr. D'Ascendis' MRP results. Mr. D'Ascendis used the same expected market returns here, resulting in the same excessive market ROEs and risk premiums.

Q. Did Mr. D'Ascendis consider the MRPs from sources that you presented in your testimony?

A. No. As I cited earlier in my Direct Testimony, Kroll and KMPG currently recommend an MRP of 5.0%, the average of the Damodaran MRPs is 4.49%, and the historical MRPs range from 5.24% to 7.17%. The U.S. MRP was 5.5% from the IESE Business School Survey in 2024. Mr. D'Ascendis' average recommended MRP of 8.63% is obviously in far in excess of these MRPs.

Finally, I note that in the authoritative corporate finance textbook by Brealey, Myers, Allen and Edmans, the authors stated: "We have no official position on the issue, but we believe that a range of 5 to 8 percent is reasonable for the risk premium in the United States."[33] Mr. D'Ascendis' recommended average MRP of 8.63% exceeds the top end of this range.

Q. Please address Mr. D'Ascendis' use of the ECAPM.

A. The ECAPM is designed to account for the possibility that the CAPM understates the ROE for companies with betas less than 1.0. Mr. D'Ascendis provided a discussion of the ECAPM beginning on page 36 of his Direct Testimony. My review of Mr. D'Ascendis' Exhibit DWD-4 indicates that he applied an ECAPM formula included in *Modern Regulatory Finance* by Dr. Roger Morin, which is set forth on page 37 of his Direct Testimony.

The argument that an adjustment factor is needed to "correct" the CAPM results for companies with betas less than 1.0 is further evidence of the lack of accuracy inherent in the CAPM itself and with beta in particular, as I pointed out in Section III of my Direct Testimony. The ECAPM adjustment also suggests that published betas by such sources as Value Line, Bloomberg, and S&P Capital IQ are incorrect and that investors should not rely on them in formulating their estimates using the CAPM. Finally, although Mr. D'Ascendis cited the source of the ECAPM formula he used, he provided no evidence that investors favor this version of the ECAPM over the standard CAPM.

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[33] Richard A. Brealey, Stewart C. Myers, Franklin Allen and Alex Edmans, *Principles of Corporate Finance*, page 189; McGraw-Hill/Irwin, 14th Edition, 2023.

Non-Utility Group ROE

Q. Beginning at page 41 of his Direct Testimony, Mr. D'Ascendis presented a proposal for including a group of 53 domestic, non-price regulated companies in his ROE analyses. Is it appropriate to use a group of unregulated companies to estimate a fair ROE for the Companies?

A. No. Mr. D'Ascendis' inclusion of unregulated non-utility companies as an additional method of evaluating the fair rate of return for the Companies is inappropriate and should be rejected by the Commission.

Utilities have protected markets, *e.g.*, service territories, and may increase the prices they charge in the face of falling demand or loss of customers. This is contrary to competitive, unregulated companies who often lower their prices when demand for their products decline. Obviously, the non-utility companies face risks that lower risk regulated gas utilities like Atmos do not face. As a consequence, non-utility companies will have higher required returns from their shareholders. According to Mr. D'Ascendis' Exhibit DWD-6, page 1, the average ROE results for his non-price regulated group range from 11.29% to 12.53%. These results are far higher than the utility proxy group DCF results for both myself and Mr. D'Ascendis and are far in excess of my CAPM results. Further, both my DCF and CAPM include the effects of increasing bond yields this year. Mr. D'Ascendis' analysis makes it very clear that investors require higher returns for the members of this group of unregulated companies and that these returns should in no way be applied to Atmos.

Adjustments to the Cost of Equity

Q. Did Mr. D'Ascendis propose additional adjustments to his recommended ROE in this case?

A. Yes. Mr. D'Ascendis proposed the following adjustments to his recommended ROE: a size adjustment of 0.05%, or 5 basis points; a credit risk adjustment that reduced the ROE by 0.04%, or 4 basis points; and a flotation cost adjustment of 0.06%, or six basis points. These are very small adjustments to Mr. D'Ascendis' recommended ROE and net out to a total upward adjustment to his ROE range of 0.07%, or just 7 basis points.

Q. Has the KPSC rejected these adjustments in past rate cases?

A. Yes, the Commission has consistently rejected these adjustments and Mr. D'Ascendis acknowledged this, citing language from the Commission Orders in Case Nos. 2021-00214 and 2022-00432.[34]

Q. Did Mr. D'Ascendis provide any additional information in his Direct Testimony that, in your view, would be persuasive enough for the Commission to reverse its position in this case?

A. No. In this case, Mr. D'Ascendis provided similar arguments in favor of these adjustments as he did in the two cases he cited in his Direct Testimony in this case.

Q. Should the Commission reject these adjustments in this case consistent with its Orders in Case Nos. 2021-00214 and 2022-00432?

A. Yes. Although these adjustments should be rejected by the Commission consistent with past rate cases, I will still offer my arguments as to why these adjustments should be rejected in this case.

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[34] D'Ascendis Direct Testimony, page 45, lines 9 through 20.

Size Adjustment

Q. Beginning on page 46 of his Direct Testimony, Mr. D'Ascendis presented his position on including a small size RP adjustment designed to compensate for the alleged additional risk associated with the small size of Atmos' Kentucky operations relative to the utility proxy group. Should the Commission consider increasing the ROE for Atmos' Kentucky operations based on its size relative to the proxy group?

A. No. It is inappropriate to inflate the ROE for Atmos' Kentucky operations by evaluating it as a stand-alone company. For purposes of the cost of capital, Atmos' Kentucky operations represent one of seven operating divisions within Atmos Energy. The Kentucky division does not issue its own debt and equity, as Mr. Christian pointed out in his Direct Testimony:

> Although this proceeding only affects the rates which may be charged by the Company for its regulated utility operations in Kentucky, the appropriate capital structure for each of the Atmos Energy utility operating divisions, including its Kentucky/Mid-States Division, is equivalent to the consolidated capital structure for Atmos Energy as a whole. Atmos Energy's consolidated capital structure is appropriate for use in setting rates for the Company's Kentucky customers because Atmos Energy provides the debt and equity capital that supports the assets serving those customers.[35]

If the Company's position is that Atmos Energy's consolidated capital structure and costs of short-term and long-term debt should be used for ratemaking purposes in Kentucky, then it is consistent to treat the ROE in the same fashion.

Atmos witness Dobbs also provided Direct Testimony describing the benefits to its operating divisions from the Atmos Energy corporate structure:

> Atmos Energy's corporate offices are located in Dallas, Texas, and provide services such as accounting, legal, human resources, rate administration, procurement, information technology and customer service organizations. The Company also has two customer contact centers located in Amarillo and Waco, Texas. These

[35] Christian Direct Testimony, page 7, line 15 through page 8, line 2.

centralized services are shared with the other Atmos Energy operating divisions in order to avoid having to staff and maintain these functions at each division level. These centralized services are the technical and administrative services that would be required by each division if it were a stand-alone company. Atmos Energy believes that this structure provides it with an efficiency advantage and enables it to be a low-cost, high-quality provider of natural gas.[36]

Moreover, there is no basis for Mr. D'Ascendis' assumption that investors would somehow carve out and require a small company ROE premium for an unincorporated operating division that is part of a much larger company like Atmos Energy. Taking his position even further, if investors did that for Kentucky operations, then they would also do it for Atmos Energy's six other operating divisions. Each of the seven operating divisions would have a small size premium relative to Atmos Energy as a whole. In such a scenario, the summed ROE plus size premiums of the seven divisions would indeed be greater than the whole of Atmos Energy's consolidated ROE. Mr. D'Ascendis' small size premium should be rejected once again in this case.

Q. Is Mr. D'Ascendis' size adjustment consistent with his credit risk adjustment?

A. No. Mr. D'Ascendis based his downward credit risk adjustment on the credit ratings of Atmos Energy (total company) compared to the average credit ratings of his proxy group. It is inconsistent to evaluate a credit risk adjustment on an Atmos Energy total company basis, yet add a small size premium to the Kentucky operations based on a stand-alone assessment.

[36] Dobbs Direct Testimony at page 4, lines 1 through 10.

Flotation Costs

Q. Beginning on page 56 of his Direct Testimony, Mr. D'Ascendis discussed flotation costs and the need for including a flotation cost adjustment to the Company's allowed ROE. Are flotation costs a legitimate consideration for the Commission's determination of ROE in this proceeding?

A. No. Mr. D'Ascendis recommended that the Commission consider adding an adjustment of 0.06% to the Atmos' ROE to recognize flotation costs. A flotation cost adjustment attempts to recognize and collect the costs of issuing common stock. Such costs typically include legal, accounting, and printing costs as well as broker fees and discounts.

It is likely that flotation costs are already accounted for in current stock prices and that adding an adjustment for flotation costs is double counting. A DCF model using current stock prices should already account for investor expectations regarding the collection of flotation costs. Multiplying the dividend yield by a 4% flotation cost adjustment, for example, 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. This is not an appropriate assumption regarding investor expectations or current stock prices. Stock prices most likely already account for flotation costs, to the extent that such costs are even considered by investors.

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

27th day of January, 2025.

Jessica K Inman
NOTARY PUBLIC
Cherokee County, GEORGIA
My Commission Expires 07/31/2027

Jessica K. Inman

Notary Public

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES; APPROVAL OF TARIFF REVISIONS; AND OTHER GENERAL RELIEF	**)** **)** **)** **)** **)**	**CASE NO. 2024-00276**

EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF

OFFICE OF THE ATTORNEY GENERAL OF THE COMMONWEALTH OF KENTUCKY

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

February 27, 2025

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-nine 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.
Aqua Large Users Group
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
Cities Served by Texas-New Mexico Power Co.
Cities Served by AEP Texas
City of New York
Climax Molybdenum Company
Connecticut Industrial Energy Consumers
Crescent City Power Users Group
Cripple Creek & Victor Gold Mining Co.
Dearborn Industrial Generation, LLC
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
North Carolina Attorney General's Office
Northwest Arkansas Gas Consumers
Maryland Energy Group
Occidental Chemical
Peoples Industrial Intervenors
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.
Philadelphia Large Users Group
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
Steering Committee of Cities Served by CoServ Gas, Ltd.
Utah Office of Consumer Services
Healthcare Council of the National Capital Area
Vermont Department of Public Service
South Carolina Office of Regulatory Staff
Texas Industrial Energy Consumers

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2025

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
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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.

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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.

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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.

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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.

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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	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.

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Date	Case	Jurisdict.	Party	Utility	Subject
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.
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 Health Care 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.

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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

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07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues
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

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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
03/10	09-1352-E-42T	WV	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

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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
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

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08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider
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.

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12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital
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

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03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study
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
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2025

Date	Case	Jurisdict.	Party	Utility	Subject
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives
05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co.., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp.	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return
2/2020	E-7. Sub 1214	NC	NC Attorney General's Office	Duke Energy Carolinas	Return on equity, capital structure, rate of return, economic conditions
2/2020	E-2. Sub 1219	NC	NC Attorney General's Office	Duke Energy Progress	Return on equity, capital structure, rate of return, economic conditions
5/2020	R-2019- 3015162	PA	Industrial Energy Consumers of Pennsylvania	UGI Utilities, Inc.	Return on equity, cost of debt, revenue allocation, rate design
6/2020	20-G-0101	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
9/2020	R-2020- 2019369	PA	AK Steel	Pennsylvania-American Water Company	Cost and revenue allocation, rate design
9/2020	20-035-04	UT	The Kroger Co.	Rocky Mountain Power	Cost and revenue allocation, rate design
10/2020	2020-00174	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Power Co.	Return on equity
3/2021	2020-00349	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Utilities Co.	Return on equity

Expert Testimony Appearances
of
Richard A. Baudino
As of January 2025

Date	Case	Jurisdict.	Party	Utility	Subject
3/2021	2020-00350	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Louisville Gas and Electric Co.	Return on equity
3/2021	20-0746-G-42T	WV	West Va. Energy Users Group	Dominion Energy West Va.	Cost and revenue allocation, cost of equity
4/2021	17-12-03RE11	CT	Connecticut Industrial Energy Consumers	PURA Investigation Into Distribution System Planning	Economic development rates
6/2021	U-20940	MI	Dearborn Industrial Generation, LLC	DTE Gas Company	Cost and revenue allocation, rate design
7/2021	21-0043-G-PC	WV	West Va. Energy Users Group	Mountaineer Gas Co., UGI Corporation	Hold harmless conditions for utility acquisition
07/2021	U-35441	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on equity, cost of capital, service quality
08/2021	51802	TX	Texas Industrial Energy Consumers	Southwestern Public Service Company	Return on equity
09/21	2021-00190	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity, cost of debt
09/21	2021-00183	KY	Kentucky Office of the Attorney General	Columbia Gas of Kentucky, Inc.	Return on equity, cost of debt, capital structure
09/21	21-0369-W-42T	WV	West Va. Energy Users Group	West Virginia-American Water Company	Revenue stabilization mechanism
09/21	2021-00185	KY	Kentucky Office of the Attorney General	Delta Natural Gas Company, Inc.	Return on equity, cost of debt, capital structure
09/21	2021-00214	KY	Kentucky Office of the Attorney General	Atmos Energy Corporation	Return on equity, common equity ratio
11/21	R-2021-3027385, R-2021-3027386	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation, Rate design
11/21	21-G-0394	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
06/22	21-G-0577	NY	Multiple Intervenors	Liberty Utilities (St. Lawrence Gas) Corp.	Cost of revenue allocation, rate design
07/22	2022-89-G	SC	South Carolina Office of Regulatory Staff	Piedmont Natural Gas Co.	Return on equity, capital structure cost of capital
07/22	R-2022-3031672, R-2022-3031673	PA	Cleveland-Cliffs Steel	Pennsylvania American Water Company	Cost and revenue allocation, rate design

Expert Testimony Appearances
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As of January 2025

Date	Case	Jurisdict.	Party	Utility	Subject
10/22	2022-00147	KY	Kentucky Office of the Attorney General and the City of Clinton	Water Service Corporation of Kentucky	Cost of equity
12/22	2022-254-E	SC	South Carolina Office of Regulatory Staff	Duke Energy Progress	Cost of equity
12/22	22-08-08	CT	Connecticut Industrial Energy Consumers	United Illuminating Co.	Cost and revenue allocation, rate design, economic development rates
03/23	2022-00372	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Cost of equity, capital structure, weighted cost of capital
08/23	23-0280-G-42-T	WV	West Va. Energy Users Group	Mountaineer Gas Co.	Cost and revenue allocation, Rate design
09/23	6680-UR-124	WI	Wisconsin Industrial Energy Group	Wisconsin Power and Light Co.	Cost and revenue allocation, rate design
09/23	6690-UR-127	WI	Wisconsin Industrial Energy Group	Wisconsin Public Service Corp.	Revenue allocation, rate design
09/23	5-UR-110	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
09/23	2023-00191	KY	Kentucky Office of the Attorney General	Kentucky-American Water Co.	Return on equity, capital structure, and weighted cost of capital
10/23	2023-00159	KY	Ky. Office of the Attorney General, Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity
11/23	23-0460-E-42T	WV	West Virginia Energy Users Group	Monongahela Power Co. and The Potomac Edison Company	Return on equity, cost of capital
02/24	R-2023-3043189 C-2023-3044289 C-2023-3044375	PA	Cleveland-Cliffs Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design, revenue decoupling rider
03/24	R-2023-3044549	PA	Peoples Industrial Intervenors	Peoples Natural Gas Company	Cost and revenue allocation, rate design
08/24	2024-00092		Kentucky Office of the Attorney General	Columbia Gas of Kentucky	Return on equity, Cost of capital
09/2024	R-2024-3047822 R-2024-3047824		Aqua Large Users Group	Aqua Pennsylvania, Inc.	Revenue allocation
01/2025	2024-00276		Kentucky Office of the Attorney General	Atmos Energy Corp.	Return on equity, capital structure

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

Company Name	Average Price				Current	Dividend Yield			
	1-month	2-month	3-month	6-month	Dividend	1-month	2-month	3-month	6-month
Atmos Energy	140.92	143.20	142.25	135.36	3.22	2.28%	2.25%	2.26%	2.38%
Chesapeake Utilities	124.99	125.88	123.89	120.35	2.56	2.05%	2.03%	2.07%	2.13%
New Jersey Resources	47.79	48.06	47.40	46.53	1.80	3.77%	3.75%	3.80%	3.87%
NiSource	36.64	36.59	35.90	33.91	1.06	2.89%	2.90%	2.95%	3.13%
Northwest Natural Holding Company	40.97	41.26	40.79	39.92	1.95	4.76%	4.73%	4.79%	4.89%
One Gas, Inc.	71.06	73.01	72.98	70.88	2.64	3.72%	3.62%	3.62%	3.72%
Spire	68.49	68.05	67.01	65.97	3.02	4.41%	4.44%	4.51%	4.58%
Proxy Group Average						3.41%	3.39%	3.43%	3.53%
D'Ascendis Proxy Group Average						3.64%	3.61%	3.65%	3.76%

Sources: Current dividend reported by the Value Line Investment Survey, Summary and Index, December 27, 2024
Closing daily stock prices from S&P Capital IQ, July 1 through December 31, 2024

PROXY GROUP
DCF Growth Rate Analysis

	Company	(1) Value Line DPS	(2) Value Line EPS	(3) S&P IQ EPS	(4) Zacks EPS
1	Atmos Energy	7.50%	7.00%	7.51%	7.00%
2	Chesapeake Utilities	8.00%	6.50%	8.12%	8.12%
3	New Jersey Resources	5.00%	5.00%	5.60%	5.60%
4	NiSource	4.50%	9.50%	7.78%	7.50%
5	Northwest Natural Holding Company	0.50%	6.50%	4.83%	4.83%
6	One Gas, Inc.	2.50%	3.50%	2.45%	2.90%
7	Spire	4.50%	4.50%	6.50%	5.80%
	Averages	4.64%	6.07%	6.11%	5.96%
	Median	4.50%	6.50%	6.50%	5.80%

Sources: **Value Line Investment Survey, Nov. 22, 2024**
S&P IQ Pro and Zacks accessed January 3, 2025
S&P IQ Pro EPS growth used as proxies for Zacks EPS for Chesapeake Utilities, New Jersey Resources, and Northwest Natural Holding Co.

PROXY GROUP
DCF RETURN ON EQUITY

	(1) Value Line Dividend Gr.	(2) Value Line Earnings Gr.	(3) S&P IQ Earning Gr.	(4) Zacks Earnings Gr.	(5) Average of All Gr. Rates
Method 1:					
Dividend Yield	3.53%	3.53%	3.53%	3.53%	3.53%
Proxy Group Average Growth Rate	4.64%	6.07%	6.11%	5.96%	5.70%
Expected Dividend Yield	3.61%	3.63%	3.64%	3.63%	3.63%
DCF Return on Equity	***8.25%***	***9.70%***	***9.75%***	***9.59%***	***9.33%***
Method 2:					
Dividend Yield	3.53%	3.53%	3.53%	3.53%	3.53%
Proxy Group Median Growth Rate	4.50%	6.50%	6.50%	5.80%	5.83%
Expected Dividend Yield	3.61%	3.64%	3.64%	3.63%	3.63%
DCF Return on Equity	***8.11%***	***10.14%***	***10.14%***	***9.43%***	***9.46%***

D'ASCENDIS PROXY GROUP
DCF Growth Rate Analysis

	Company	(1) Value Line DPS	(2) Value Line EPS	(3) S&P IQ EPS	(4) Zacks EPS
1	Atmos Energy	7.50%	7.00%	7.51%	7.00%
3	New Jersey Resources	5.00%	5.00%	5.60%	5.60%
4	NiSource	4.50%	9.50%	7.78%	7.50%
5	Northwest Natural Holding Company	0.50%	6.50%	4.83%	4.83%
6	One Gas, Inc.	2.50%	3.50%	2.45%	2.90%
7	Spire	4.50%	4.50%	6.50%	5.80%
	Averages	4.08%	6.00%	5.78%	5.61%
	Median	4.50%	5.75%	6.05%	5.70%

Sources: **Value Line Investment Survey, Nov. 22, 2024**
S&P IQ Pro and Zacks accessed January 3, 2025
S&P IQ Pro EPS growth used as proxies for Zacks EPS for New Jersey Resources and Northwest Natural Holding Co.

D'ASCENDIS PROXY GROUP
DCF RETURN ON EQUITY

	(1) Value Line Dividend Gr.	(2) Value Line Earnings Gr.	(3) S&P IQ Earning Gr.	(4) Zacks Earnings Gr.	(5) Average of All Gr. Rates
Method 1:					
Dividend Yield	3.76%	3.76%	3.76%	3.76%	3.76%
Proxy Group Average Growth Rate	4.08%	6.00%	5.78%	5.61%	5.37%
Expected Dividend Yield	3.84%	3.87%	3.87%	3.87%	3.86%
DCF Return on Equity	***7.92%***	***9.87%***	***9.65%***	***9.48%***	***9.23%***
Method 2:					
Dividend Yield	3.76%	3.76%	3.76%	3.76%	3.76%
Proxy Group Median Growth Rate	4.50%	5.75%	6.05%	5.70%	5.50%
Expected Dividend Yield	3.85%	3.87%	3.87%	3.87%	3.86%
DCF Return on Equity	***8.35%***	***9.62%***	***9.92%***	***9.57%***	***9.36%***

PROXY GROUP
Capital Asset Pricing Model Analysis

Value Line Forward-Looking MRP

Line No.		Value Line
1	Market Required Return Estimate	10.78%
2	Risk-free Rate of Return, 30-Year Treasury Bond	4.58%
3	Risk Premium	
4	(Line 1 minus Line 2)	6.20%
5	Proxy Group Beta	0.83
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	5.13%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	**9.71%**

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	Avg. Yield
Jul-24	4.46%
Aug-24	4.15%
Sep-24	4.04%
Oct-24	4.38%
Nov-24	4.54%
Dec-24	4.58%
6 month average	4.36%

Source: Federal Reserve data

Value Line Projected Return Data:

Median Estimated Div. Yield	2.00%
3 - 5 Year Price Appreciation	40.00%
Estimated Annualized Price Appreciation	8.78%
Est. Annual Total Return	10.78%

Source: Value Line Summary and Index, December 27, 2024

Proxy Group Betas:	S&P IQ	Value Line
Atmos Energy	0.81	0.90
Chesapeake Utilities	0.77	0.85
New Jersey Resources	0.77	1.00
NiSource	0.69	0.95
Northwest Natural Holding Company	0.74	0.85
One Gas, Inc.	0.80	0.85
Spire	0.73	0.90
Average	0.76	0.90
Average D'Ascendis Proxy Group	0.75	0.91
Average of Value Line and S&P		0.83
Average of Value Line and S&P, D'Ascendis Grou		0.83

Sources: Value Line Investment Survey, S&P Capital IQ

PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	Arithmetic Mean	Supply Side ERP	Supply Side Less WWII Bias
Long-Term Annual Return on Stocks	12.04%		
Long-Term Annual Income Return on Long-Term Treas. Bonds	4.87%		
Historical Market Risk Premium	7.17%	6.22%	5.24%
Proxy Group Beta, Value Line	0.83	0.83	0.83
Beta * Market Premium	5.94%	5.15%	4.34%
Risk-free Rate of Return	4.58%	4.58%	4.58%
CAPM Cost of Equity, Value Line Beta	**10.52%**	**9.73%**	**8.92%**

Source: Kroll Cost of Capital Navigator

PROXY GROUP
Capital Asset Pricing Model Analysis
Other Market Risk Premium Sources

	IESE Survey 2024	KMPG	Kroll	Damodarin Average MRP
Market Risk Premium	5.50%	5.00%	5.00%	4.49%
Gas Proxy Group Beta	0.83	0.83	0.83	0.83
Beta times MRP	4.56%	4.14%	4.14%	3.72%
Risk-free Rate of Return	4.58%	4.58%	4.58%	4.58%
CAPM Cost of Equity	**9.14%**	**8.72%**	**8.72%**	**8.30%**