**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Application of Kansas Gas Service, a Division of ONE Gas, Inc. for Adjustment of its Natural Gas Rates in the State of Kansas.	))))	Docket No. 24-KGSG-____ -RTS

DIRECT TESTIMONY

OF

BRUCE H. FAIRCHILD

ON BEHALF OF

KANSAS GAS SERVICE

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DIRECT TESTIMONY OF BRUCE H. FAIRCHILD

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Bruce H. Fairchild, 3907 Red River, Austin, Texas 78751.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am a principal in Financial Concepts and Applications, Inc. ("FINCAP"), a firm engaged in financial, economic, and policy consulting to business and government.

A. Qualifications

Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND, PROFESSIONAL QUALIFICATIONS, AND PRIOR EXPERIENCE.

A. I hold a BBA degree from Southern Methodist University and MBA and PhD degrees from the University of Texas at Austin. I am also a Certified Public Accountant. My previous employment includes working in the Controller's Department at Sears, Roebuck and Company and serving as Assistant Director of Economic Research at the Public Utility Commission of Texas ("PUCT"). I have also been on the business school faculties at the University of Colorado at Boulder and the University of Texas at Austin, where I taught undergraduate and graduate courses in finance and accounting.

Q. BRIEFLY DESCRIBE YOUR EXPERIENCE IN UTILITY-RELATED MATTERS.

A. While at the PUCT, I assisted in managing a division comprised of approximately twenty-five professionals responsible for financial analysis, cost allocation and rate design, economic and financial research, and data processing systems. I testified on behalf of the PUCT staff in numerous cases involving most major investor-owned and cooperative electric, telephone, and water/sewer utilities in the state regarding a variety of financial, accounting, and economic issues. Since forming FINCAP in 1979, I have participated in a wide range of analytical assignments involving utility-related matters on behalf of utilities, industrial consumers, municipalities, and regulatory commissions. I have also prepared and presented expert testimony before a number of regulatory authorities addressing revenue requirements, cost allocation, and rate design issues for gas, electric, telephone, and water/sewer utilities. I have been a frequent speaker at regulatory conferences and seminars and have published research concerning various regulatory issues. A resume that contains the details of my experience and qualifications is attached as Appendix A, with Appendix B listing my prior testimony before regulatory agencies since leaving the PUCT.

B. Overview

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to recommend a fair rate of return on equity ("ROE") to include in Kansas Gas Service, a division of ONE Gas, Inc.'s ("KGS") overall rate of return.

Q. WHAT IS THE ROLE OF ROE IN SETTING A UTILITY'S RATES?

A. The ROE serves to compensate shareholders for the use of their equity capital to finance the plant and equipment necessary to provide utility service to customers. Investors only commit money in anticipation of earning a return on their investment commensurate with that from other investment alternatives having comparable risks. Consistent with both sound regulatory economics and the standards specified in the U.S. Supreme Court cases of *Bluefield Water Works & Improvement Co.* (1923) and *Hope Natural Gas Co.* (1944), rates should provide the utility a reasonable opportunity to earn a rate of return, including ROE, sufficient to: (1) fairly compensate capital presently invested in the utility, (2) enable the utility to offer a return adequate to attract new capital on reasonable terms, and (3) maintain the utility's financial integrity.

Q. IN GENERAL, HOW HAVE YOU GONE ABOUT DEVELOPING YOUR RECOMMENDED ROE FOR KGS?

A. My evaluation begins with a brief review of the operations and finances of KGS and general conditions in the natural gas industry and capital markets, including a discussion of the actions the Federal Reserve Board ("Fed") is taking in response to the increases in the Consumer Price Index ("CPI"). With this background, I conduct various analyses to estimate the cost of equity, which is the rate of return equity investors require for the use of their money. These analyses include applications of the discounted cash flow ("DCF") model, capital asset pricing model ("CAPM"), risk premium method, and comparable earnings method. Based on these analyses, I develop a cost of equity range, from which I select my recommended ROE for KGS.

Q. WHAT IS YOUR RECOMMENDED ROE FOR KGS?

A. Based on applications of the DCF, CAPM, risk premium, and comparable earnings methods to an industry group of publicly traded natural gas local distribution companies ("LDCs"), I conclude that equity investors require a rate of return for the use of their money in the range of 9.75% to 10.75%, and recommend an ROE for KGS of 10.25%, which is the mid-point of the range.

II. FUNDAMENTAL ANALYSIS

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. As a predicate to subsequent quantitative analyses, this section briefly reviews the operations and finances of KGS and ONE Gas, Inc. ("ONE Gas"). It also examines the natural gas distribution industry along with conditions in the capital markets and U.S. economy.

A. Kansas Gas Service

Q. BRIEFLY DESCRIBE KGS.

A. KGS is the operating division of ONE Gas that distributes natural gas to almost three-quarters of the market in Kansas, including the cities of Kansas City, Overland Park, Topeka, and Wichita. At December 31, 2023, KGS had total assets of approximately $1.9 billion, with revenues for the previous twelve months being $768.3 million.

Q. BRIEFLY DESCRIBE ONE GAS.

A. ONE Gas is the largest natural gas distributor in Oklahoma and Kansas, and the third largest in Texas, serving a total of over 2.2 million customers. ONE Gas was created when ONEOK spun off its natural gas distribution operations into a separate entity on January 31, 2014. At December 31, 2023, ONE Gas had total assets of approximately $7.8 billion, with revenues during 2023 totaling some $2.4 billion. ONE Gas' common stock is traded on the New York Stock

Exchange, and its debt is rated A- by Standard & Poor's Financial Services LLC ("S&P") and A3 by Moody's Investors Services, Inc. ("Moody's").

B. Natural Gas Distribution Industry

Q. PLEASE DESCRIBE THE NATURAL GAS DISTRIBUTION INDUSTRY.

A. LDCs normally transport, deliver, and sell natural gas from receipt points on inter- and intrastate pipelines to households and businesses. They often have an exclusive right to operate in a specified geographic area, with their rates and operations being subject to the jurisdiction of state or local regulatory authorities. Historically, LDCs provided only "bundled" service, which included the transportation, distribution, and natural gas itself, although some now allow customers to choose their own gas supplier, with the LDC providing the delivery and service of that gas. Structural changes, which have occurred on both the demand and supply sides, have eroded the traditional monopoly status of many gas utilities, with LDCs experiencing "bypass" as large commercial and industrial customers seek to acquire gas supplies at the lowest possible prices and, in the process, abandon traditional "full-service" utility suppliers.

Q. WHAT RISKS DO LDCS FACE THAT ARE OF CONCERN TO INVESTORS?

A. LDCs face a variety of market, operating, capital-related, and regulatory risks. The natural gas business is increasingly competitive and complex, with LDCs having to vie with electric companies, oil and propane suppliers, and, in some cases, energy marketers and trading companies. Moreover, the demand for natural gas is impacted by energy efficiency and technological advances adversely affecting growth over time, especially in the residential sector. The financial results of LDCs are also heavily dependent on general economic conditions, not only in terms of the overall activity of businesses, but also in the growth of households and use per customer.

With respect to operations, gas distribution inherently involves a variety of hazards and operating risks, including the need to replace aging and obsolete infrastructure, leaks, accidents, and third-party damages. Many LDCs are faced with substantial known and unknown environmental costs (e.g., pipeline integrity testing) and post-retirement employee costs (e.g., pensions and medical benefits). Inflation and other increases could adversely impact an LDC's ability to control operating expenses and costs, and interruptions in gas supply, strikes, natural disasters, security breaches, and terrorist activities could disrupt or shut down operations. Finally, most LDCs are involved in ongoing legal or administrative proceedings before courts and governmental bodies related to a variety of matters (e.g., general claims, taxes, environmental issues, billing, and credit and collection matters), which could result in detrimental outcomes.

Q. PLEASE ELABORATE ON THE CAPITAL AND REGULATORY RISKS FACED BY LDCS.

A. Regarding capital-related risks, virtually all LDCs are facing significant infrastructure expenditures to meet customer service requirements and improve system reliability, as well as satisfy a number of government-mandated safety initiatives. The ability of LDCs to fund these and other capital expenditures is affected by a variety of factors, including regulatory decisions, maintenance of a sufficient bond rating, capital market conditions (e.g., interest rates), and availability of credit facilities and access to capital markets. In addition, LDCs' ability to retain and attract capital is subject to changes in state and federal tax laws and accounting standards, which may adversely affect their cash flows and financial condition.

Finally, because most aspects of an LDC's operations (e.g., rates; operating terms and conditions of service; types of services offered; construction of new facilities; the integrity, safety, and security of facilities and operations; acquisition, extension, or abandonment of services or facilities; reporting and information posting requirements; maintenance of accounts and records; and relationships with affiliate companies) are subject to government oversight, investors are understandably concerned with rate, safety, and environmental regulation. Potential changes in laws, regulations, and policies, as well as the inherent uncertainty surrounding regulatory decisions, all represent significant risks to LDCs.

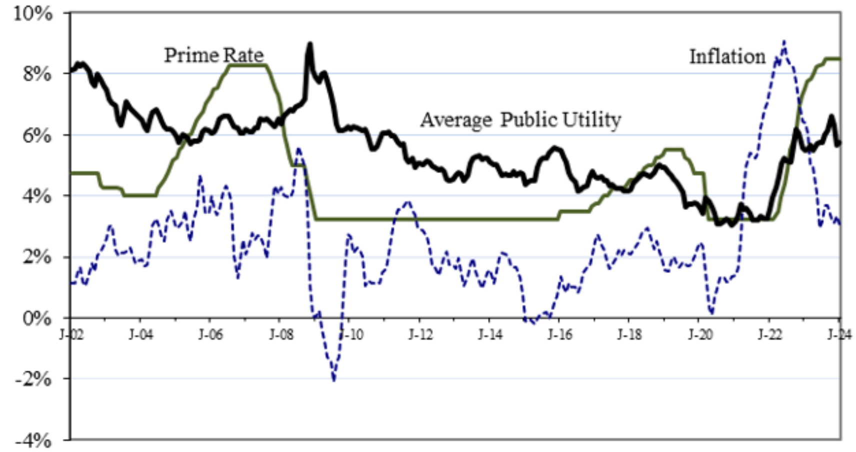
Q. IS KGS EXPOSED TO THESE INDUSTRY RISKS?

A. Yes. Attached to my testimony as Appendix C are the pages from ONE Gas' 2023 Form 10-K filed with the Securities and Exchange Commission that describe the operational risks; regulatory and legislative risks; and financial, economic, and market risks faced by ONE Gas. This discussion documents that KGS is exposed to the same risks as the LDC industry generally, as well as other risks unique to it and its service areas.

C. Capital Markets

Q. WHAT HAS BEEN THE PATTERN OF INTEREST RATES OVER THE LAST TWO DECADES?

A. Average long-term public utility bond rates, the borrowing prime rate, and inflation as measured by the CPI over the last twenty years are plotted in the graph below. Beginning in 2002, the average yield on long-term public utility bonds generally fell because of monetary and fiscal policies designed to keep the economy growing. This decline ended abruptly with the 2008 financial market meltdown and global recession. Investors became exceedingly risk averse, causing interest rates on corporate bonds to spike, while government policies pushed down short-term interest rates and depressed economic conditions and lower energy prices reduced inflation. Over the next decade, various actions by the Fed to stimulate the economy through easy-money policies resulted in short- and long-term interest rates reaching record lows. These conditions were interrupted in early 2020 by the coronavirus pandemic and worldwide economic shutdown, although the impact on interest rates was moderated by extraordinary actions taken by the Fed in response. However, in late 2021 CPI inflation began to skyrocket, jumping from an average of around 2% over the prior 20 years to 7% in 2021, peaking at over 9% in June 2022, and recently dropping to just above 3% for the twelve months ended January 2024:



Q. HOW HAS THE MARKET FOR COMMON EQUITY CAPITAL PERFORMED OVER THIS SAME PERIOD?

A. In the early 2000s, stock prices moved steadily higher as one of the longest bull markets in U.S. history continued unabated. In mid-2000, mounting concerns over prospects for future growth, particularly for firms in the high technology and telecommunications sectors, pushed equity prices lower, in some cases precipitously. Common stock prices generally recovered and reached record highs, buoyed in large part by widespread acquisition activity, until the capital market crisis and Great Recession occurred in 2008. Stock prices tumbled by some 40%, and while they recovered and reached all-time highs over the next decade, they crashed again in early 2020 due to the coronavirus pandemic. Since then, most stock indices reached all-time highs, but subsequently receded some 20% into bear market territory in response to inflation worries, soaring energy prices, and global events (*e.g.*, the Russian invasion of Ukraine). They have recently fully recovered as inflation has abated and investors expect the Fed to discontinue hiking interest rates. Additionally, the stock market has become extraordinarily volatile, with share prices routinely changing more than full percentage points during a single day's trading. The graph below plots the performances of the Dow-Jones Industrial Average, the S&P 500, and the Dow Jones Utility Average since 2002 (the latter two indices were scaled for comparability):

Q. WHAT IS THE CURRENT OUTLOOK FOR THE U.S. ECONOMY?

A. The U.S. economy had fully recovered from the Great Recession when the coronavirus pandemic struck in early 2020 and the world economy came to a virtual stand-still. More than 30 million U.S. jobs were lost as a result of the pandemic, and unemployment reached almost 15 percent, not counting furloughed workers, throwing the U.S. into a recession overnight. To address the crisis, the U.S. Congress provided some $4.5 trillion in aid and stimulus spending, and the Fed held short-term interest rates near zero and purchased up to $120 billion a month in Treasury debt and mortgage-backed securities to suppress long-term interest rates. The combined effect of these fiscal and monetary policies, along with the population becoming vaccinated, is that U.S. economic activity subsequently increased to greater than prior to the coronavirus pandemic and unemployment fell to below 4 percent. As noted earlier, however, inflation began to increase markedly in 2021. After initially attributing the increase to supply-chain problems and then the Russian invasion of Ukraine, the Fed concluded that the dramatic rise in prices was not "transitory," and beginning in March 2022 it embarked on its most aggressive effort in more than two decades to curb inflation. This included increasing short-term interest rates, announcing that more hikes in the federal funds rate would follow, and reducing its $9 trillion inventory of Treasury debt and mortgage-backed securities up to $95 billion a month by not replacing maturing bonds. As inflation has moderated in the last few months, the Fed has indicated that it may discontinue raising interest rates, contingent on economic data. Whether the unprecedented actions by the Fed have succeeded in permanently reducing inflation is yet unknown, but remains a significant uncertainty hanging over all segments of the U.S. economy.

Q. HOW HAVE THE FED'S ACTIONS AFFECTED THE COST OF CAPITAL?

A. Hikes in the federal funds rate by the Fed and significant reductions in its long-term bond inventory are intended to increase the cost of all borrowing, including by LDCs. As will be explained more later, higher interest rates also increase the cost of more risky equity capital. This, coupled with the greater volatility in stock prices that also increases the risk of investing in common equities, supports the conclusion that the relatively low capital cost environment that has existed for the last decade has ended. As a result, the cost of both debt and equity is expected to remain higher for the foreseeable future, and the ROEs authorized for LDCs over the last few years, including those allowed by this Commission, must be adjusted to recognize the changes in capital markets. Only an ROE that reflects the current capital market conditions faced by LDC's will fairly compensate a utility's investors, enable LDCs to attract new capital on reasonable terms, and maintain their financial integrity.

III. COST OF EQUITY ESTIMATES

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. The purpose of this section is to develop a cost of equity range for an industry group of LDCs having similar risks to KGS. It begins by introducing the cost of equity concept, explaining the risk-return tradeoff principle fundamental to capital markets, and discussing the importance of using multiple approaches to estimate the cost of equity. The DCF model is then developed and applied to the industry group of publicly traded LDCs to estimate their current cost of equity. Next, the CAPM is described and alternative cost of equity estimates developed for the industry group using this method. Cost of equity estimates are also developed using the risk premium method based on ROEs previously authorized for other LDCs. Finally, a comparable earnings method looking at projected rates of return on book equity for other LDCs is applied.

A. Cost of Equity Concept

Q. HOW IS A RETURN ON COMMON EQUITY CUSTOMARILY DETERMINED?

A. Unlike debt capital, there is no contractually guaranteed return on common equity capital, since shareholders are the residual owners of the utility. Nonetheless, common equity investors still require a return on their investment, with the "cost of equity" being the minimum rent that must be paid for the use of their money.

Q. WHAT FUNDAMENTAL ECONOMIC PRINCIPLE UNDERLIES THIS COST OF EQUITY CONCEPT?

A. The cost of equity concept is predicated on the notion that investors are risk averse and willingly accept additional risk only if they expect to be compensated for bearing that risk. In capital markets where relatively risk-free assets are available, such as U.S. Treasury securities, investors can be induced to hold more risky assets only if they are offered a premium, or additional return, above the rate of return on a risk-free asset. Since all assets compete with each other for investors' funds, riskier assets must yield a higher expected rate of return than less risky assets in order for investors to be willing to hold them.

Given this risk-return tradeoff, the minimum required rate of return (k) from an asset (i) can be generally expressed as:

$$k_i = R_f + RPi$$

where: R_f = Risk-free rate of return; and
RP_I = Risk premium required to hold more risky asset i.

Thus, the minimum required rate of return for a particular asset at any point in time is a function of: (1) the yield on risk-free assets, and (2) its relative risk, with investors demanding correspondingly larger risk premiums for assets bearing greater risk.

Q. IS THERE EVIDENCE THAT THE RISK-RETURN TRADEOFF PRINCIPLE ACTUALLY OPERATES IN THE CAPITAL MARKETS?

A. Yes. The risk-return tradeoff can be readily documented in certain segments of the capital markets where required rates of return can be directly inferred from market data and generally accepted measures of risk exist. For example, bond yields are reflective of investors' expected rates of return, and bond ratings are indicative of the risk of fixed income securities. The observed yields on government securities and bonds of various rating categories demonstrate that the risk-return tradeoff does, in fact, exist in the capital markets.

To illustrate, average yields during January 2024 on 30-year U.S. Treasury bonds and public utility bonds of different ratings reported by Moody's are shown in the table below. As evidenced there, as risk increases (measured by progressively lower bond ratings), the required rate of return (measured by yields) rises accordingly. Also shown are the indicated risk premiums over long-term government securities for the additional risk associated with each bond rating category.

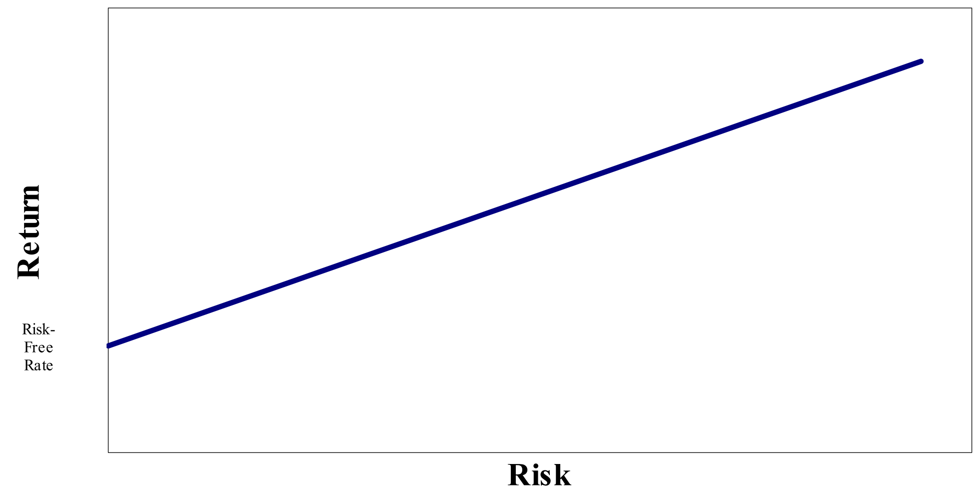
Bond and Rating	January 2024 Yield	Risk Premium Over 30-Year Treasury
U.S. Treasury		
30-Year	4.26%	--
Public Utility		
Aa	5.34%	1.08%
A	5.48%	1.22%
Baa	5.73%	1.47%

Q. DOES THE RISK-RETURN TRADEOFF OBSERVED WITH FIXED INCOME SECURITIES EXTEND TO COMMON STOCKS AND OTHER ASSETS?

A. Documenting the risk-return tradeoff for assets other than fixed income securities is complicated by two factors. First, there is no standard measure of risk applicable to all assets. Second, for most assets (e.g., common stock), required rates of return cannot be directly observed. Yet there is every reason to believe that investors exhibit risk aversion in deciding whether to hold common stocks and other assets, just as when choosing among fixed income securities. Accordingly, it is generally accepted that the risk-return tradeoff evidenced with long-term debt extends to all assets.

The extension of the risk-return tradeoff from assets with observable required rates of return (e.g., bonds) to other assets is represented by the concept of a "capital market line." In particular, competition between securities and among investors in the capital markets drives the prices of assets to equilibrium such that the expected rate of return from each is commensurate with its risk. Thus, the expected rate of return from any asset is a risk-free rate of return plus a corresponding risk premium. This concept of a capital market line is illustrated below. The vertical axis represents required rates of return and the horizontal axis indicates relative riskiness, with the intercept of the capital market line being the risk-free rate of return.

Capital Market Line



Q. WHAT DOES THE ABOVE DISCUSSION IMPLY WITH RESPECT TO ESTIMATING THE COST OF EQUITY FOR A UTILITY?

A. Although the cost of equity cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks to which the equity capital is exposed. Because it is unobservable, the cost of equity for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the utility specifically, and employing various quantitative methods that focus on investors' required rates of return. These various quantitative methods typically attempt to infer investors' required rates of return from stock prices, by extrapolating interest rates, or through an analysis of other financial data.

Q. DO YOU RELY ON A SINGLE METHOD TO ESTIMATE THE COST OF EQUITY?

A. No. Despite the theoretical appeal of or precedent for using a particular method to estimate the cost of equity, no single approach can be regarded as wholly reliable. Therefore, I use multiple methods to estimate the cost of equity. Indeed, it is essential that estimates of investors' minimum required rate of return produced by one method be compared with those produced by other methods, and that all cost of equity estimates be required to pass fundamental tests of reasonableness and economic logic.

B. Discounted Cash Flow Model

Q. HOW ARE DCF MODELS USED TO ESTIMATE THE COST OF EQUITY?

A. The use of DCF models to estimate the cost of equity is essentially an attempt to replicate the market valuation process which led to the price investors are willing to pay for a share of a company's common stock. It is predicated on the assumption that investors evaluate the risks and expected rates of return from all securities in the capital markets. Given these expected rates of return, the price of each share of stock is adjusted by the market so that investors are adequately compensated for the risks to which they are exposed. Therefore, we can look to the market to determine what investors believe a share of common stock is worth, and by estimating the cash flows they expect to receive from the stock in the way of future dividends and stock price, their required rate of return can be mathematically imputed. In other words, the cash flows that investors expect from a stock are estimated, and given the stock's current market price, we can "back-into" the discount rate, or cost of equity, investors presumably used in arriving at that price.

Q. WHAT MARKET VALUATION PROCESS UNDERLIES DCF MODELS?

A. DCF models are derived from a theory of valuation which posits that the price of a share of common stock is equal to the present value of the expected cash flows (i.e., future dividends and stock price) that will be received while holding the stock, discounted at investors' required rate of return, or the cost of equity. Notationally, the general form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+K_e)^1} + \frac{D_2}{(1+K_e)^2} + \cdots + \frac{D_t}{(1+K_e)^t} + \frac{P_t}{(1+K_e)^t}$$

where: P_0 = Current price per share;
P_t = Future price per share in period t;
D_t = Expected dividend per share in period t;
Ke = Cost of equity.

Q. HAS THIS GENERAL FORM OF THE DCF MODEL CUSTOMARILY BEEN SIMPLIFIED FOR USE IN ESTIMATING THE COST OF EQUITY IN RATE CASES?

A. Yes. In an effort to reduce the number of required estimates and computational difficulties, the general form of the DCF model has been simplified to a "constant growth" form. In order to convert the general form of the DCF model to the constant growth DCF model, a number of assumptions must be made. These include:

- A constant growth rate for both dividends and earnings;
- A stable dividend payout ratio;
- The discount rate exceeds the growth rate;
- A constant growth rate for book value and price;
- A constant earned rate of return on book value;
- No sales of stock at a price above or below book value;
- A constant price-earnings ratio;

- A constant discount rate (i.e., no changes in risk or interest rate levels and a flat yield curve); and
- All of the above extend to infinity.

Given these assumptions, the general form of the DCF model can be reduced to the more manageable formula of:

$$P_0 = \frac{D_1}{K_e - g}$$

where: g = Investors' long-term growth expectations.

The cost of equity ("K_e") can be isolated by rearranging terms:

$$K_e = \frac{D_1}{P_0} + g$$

The constant growth form of the DCF model recognizes that the rate of return to stockholders consists of two parts: (1) dividend yield (D_1/P_0), and (2) growth (g). In other words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

While the constant growth form of the DCF model provides a more manageable formula to estimate the cost of equity, it is important to note that the assumptions required to convert the general form of the DCF model to the constant growth form are never strictly met in practice. In some instances, where earnings are derived solely from stable activities, and earnings, dividends, and book value track fairly closely, the constant growth form of the DCF model may be a reasonable working approximation of stock valuation. However, in other cases, where the circumstances cause the required assumptions to be severely violated, the constant growth DCF model may produce widely divergent and meaningless results. This is especially the case if the firm's earnings or dividends are unstable, or if investors are expecting the stock price to be affected by factors other than earnings and dividends.

Q. IS THERE ANYTHING ELSE THAT AFFECTS THE USE OF THE DCF MODEL TO ESTIMATE INVESTORS' REQUIRED RATE OF RETURN?

A. Yes. When the DCF model came into widespread use as a method to estimate the cost of equity in the 1960s and 1970s, it was regarded as a fair representation of investor behavior and share valuation. Investors bought and sold stocks based on their fundamental underlying value, which was tied to long-term dividend and stock price growth expectations. That is no longer the case. It is estimated that some 75% of equities bought and sold on the New York Stock Exchange are now "high frequency" or "algorithmic" trades. These trades are not investors buying stocks for the long-term, but are short-term, computer-initiated trades intended to take advantage of market discrepancies, movements, and information. Accordingly, it is not clear whether common stock prices are now based on the valuation assumed by DCF theory and upon which estimating the cost of equity using the DCF model is predicated.

Q. THESE CAVEATS NOTWITHSTANDING, HOW DID YOU ESTIMATE THE COST OF EQUITY USING THE DCF MODEL?

A. To avoid measurement error associated with applying the DCF model to a single firm, I applied the constant growth form of the DCF model to a proxy group of publicly traded LDCs. Specifically, I began with the nine companies included in *Value Line's* Natural Gas Utility industry at February 23, 2024, and then excluded UGI Corp. because it is not predominantly engaged in natural gas distribution and

Southwest Gas Holdings because it is in the midst of a major restructuring. This resulted in a proxy group consisting of the seven LDCs listed on Schedule BHF-1, which includes ONE Gas.

Q. HOW IS THE CONSTANT GROWTH FORM OF THE DCF MODEL TYPICALLY USED TO ESTIMATE THE COST OF EQUITY?

A. The first step in implementing the constant growth DCF model is to determine the expected dividend yield (D_1/P_0) for the firm in question. This is usually calculated based on an estimate of dividends to be paid in the coming year divided by the current price of the stock.

Q. HOW DID YOU CALCULATE THE DIVIDEND YIELD COMPONENT OF THE CONSTANT GROWTH DCF MODEL FOR THE GAS UTILITY GROUP?

A. Because estimating the cost of equity using the DCF model is an attempt to replicate how investors arrived at an observed stock price, all of its components should be contemporaneous. Price, dividend, and growth data from different points in time, or averaged over long time periods, violate the matching principle underlying the DCF model. Therefore, dividend yield was calculated by dividing an estimate of dividends to be paid by each of the LDCs in the group over the next twelve months, obtained from the index to *Value Line's* February 23, 2024 edition, by the average closing price of each firm's stock during the month between January 16 and February 16, 2024. The expected dividends, representative price, and resulting dividend yield for each of the seven LDCs are displayed on Schedule BHF-1. As calculated there, the average dividend yield for the industry group is 4.04%. Also shown is the median for the group of 4.05%, which removes the impact of extreme low and high values on the average.

Q. EXPLAIN HOW ESTIMATES OF INVESTORS' LONG-TERM GROWTH EXPECTATIONS ARE CUSTOMARILY DEVELOPED FOR USE IN THE CONSTANT GROWTH DCF MODEL.

A. In constant growth DCF theory, earnings, dividends, book value, and market price are all assumed to grow in lockstep, and the growth horizon of the DCF model is infinite. But implementation of the DCF model is more than just a theoretical exercise; it is an effort to replicate the mechanism investors used to arrive at observable stock prices. Therefore, the only "g", or growth rate, that matters in using the DCF model to estimate the cost of equity is that which investors expect and have embodied in current market prices.

Q. WHAT DRIVES INVESTORS' GROWTH EXPECTATIONS?

A. Trends in earnings, which ultimately support future dividends and share price, play a pivotal role in determining investors' long-term growth expectations. Security analysts' growth forecasts are generally regarded as the closest single measure of the expected long-term growth rate of the constant growth DCF model. While being primarily based on the outlook for a firm, they also reflect the utility's historical experience and other factors considered by investors in forming their long-term growth expectations. Moreover, various empirical studies have found that security analysts' projections are a superior source of DCF growth rates. The 5-year earnings growth projections by security analysts for each of the seven gas utilities reported by *Value Line*, LSEG's *Institutional*

Brokers Estimate System ("*I/B/E/S*"), *Yahoo!*Finance, and *Zacks Investment Research* ("*Zacks*") are displayed on Schedule BHF-2, with the averages for the group being 5.9%, 7.0%, 6.2%, and 5.8%, respectively. Again, to eliminate the impact of extreme values, the medians for the group are also shown, which range between 5.0% and 7.0%. Also shown on Schedule BHF-2 are the 10-year and 5-year historical earnings growth rates reported by *Value Line* for each of the seven gas utilities, which average 4.6% and 6.9%, respectively, and have medians of 5.0% and 6.0%, respectively.

Q. WHY ARE THERE TWO COLUMNS SHOWING I/B/E/S PROJECTED GROWTH RATES ON SCHEDULE BHF-2?

A. Because there are a limited number of current I/B/E/S growth rates reported by LSEG, the firm that compiles them, for the LDCs in the proxy group, also displayed are the 5-year projected growth rates reported by *Yahoo!*Finance. Please note that, unlike LSEG, *Yahoo!*Finance does not discontinue reporting an I/B/E/S growth rate when they become outdated, but continues to post the last available I/B/E/S growth rate until LSEG issues a new one. As a result, many of the growth rates reported by *Yahoo!*Finance are at least six months old and perhaps much older. While some contend that investors may nonetheless rely on the stale growth rates published by *Yahoo!*Finance, these projected growth rates must be regarded as a less reliable guide to current investor expectations.

Q. HOW ELSE ARE INVESTOR EXPECTATIONS OF FUTURE LONG-TERM GROWTH PROSPECTS FOR A FIRM OFTEN ESTIMATED FOR USE IN THE CONSTANT GROWTH DCF MODEL?

A. In DCF theory and practice, growth in book equity comes from the reinvestment of earnings within the business and the effects of external financing. Accordingly, conventional applications of the constant growth DCF model often examine the relationships between variables that determine the "sustainable" growth attributable to these two factors.

Q. HOW IS A FIRM'S SUSTAINABLE GROWTH ESTIMATED?

A. The sustainable growth rate is calculated by the formula:

$$g = br + sv$$

where "b" is the expected earnings retention ratio (one minus the dividend payout ratio), "r" is the expected rate of return earned on book equity, "s" is the percent of common equity expected to be issued annually as new common stock, and "v" is the equity accretion ratio. The "br" term represents the growth from reinvesting earnings within the firm while the "sv" term represents the growth from external financing. This external financing growth results because existing shareholders share in a portion of any excess received from selling new shares at a price above book value.

Q. WHAT GROWTH RATE DOES THE SUSTAINABLE GROWTH METHOD SUGGEST FOR THE GAS UTILITY GROUP?

A. The sustainable growth rate for each of the seven gas utilities in the industry group based on *Value Line's* projections for 2027-2029 is developed in Schedule

BHF-3. As shown there, the sustainable growth method implies an average long-term growth rate for the LDC utility group of 6.1%, and 6.3% based on the median.

Q. WHAT ARE OTHER PROJECTED AND HISTORICAL GROWTH RATES FOR THE INDUSTRY GROUP?

A. Schedule BHF-4 displays *Value Line* projected growth rates and 10- and 5-year historical growth rates in book value per share, dividends per share, and stock price for each of the seven gas utilities in the industry group. The averages for the LDC group range from a negative 2.5% (5-year historical price growth) to 9.8% (projected price growth), with the medians ranging from a negative 2.4% to 10.5%. Besides the fact that some of these growth rates, when combined with the group's approximately 4.0% dividend yield, imply implausible cost of equity estimates, the variation in these other growth rates results in their providing only limited guidance as to the prospective growth that investors expect.

Q. WHAT IS YOUR CONCLUSION AS TO THE LONG-TERM GROWTH THAT INVESTORS ARE EXPECTING FROM THE INDUSTRY GROUP?

A. After excluding clearly unreliable indicators of growth, the plausible growth rates shown on Schedules BHF-2, BHF-3, and BHF-4 indicate a range for the LDC group of between approximately 5.50% and 6.75%. Taken together, I conclude that investors expect long-term growth from the LDC group in the 5.5% to 6.5% range.

Q. DID YOU EXPLICITLY INCORPORATE ANY GENERAL MEASURE OF ECONOMIC GROWTH, SUCH AS GROSS DOMESTIC PRODUCT ("GDP"), INTO YOUR ESTIMATE OF INVESTOR GROWTH EXPECTATIONS?

A. No, not separately from the economic growth implicit in the company-specific projected and historical growth rates discussed above. A "two-stage" or "multi-stage" DCF model, which uses a general measure of economic growth (e.g., GDP) for later years, may be applicable to a "start-up" company or firms experiencing rapid near-term growth that is expected to slow in later years. But that is not the case for the LDCs in the group, all of which are mature, stable companies. The assumption that the long-term growth of the LDCs will revert to that of the general economy ignores the fact that the average growth rates in the earnings and dividends of the LDC group have exceeded GDP historically and that investors expect it to continue to do so prospectively. Utilities are regarded as "widows and orphans" stocks because they provide an essential service and produce a stable and growing income stream. The DCF model that best describes the valuation of LDC stocks is the "steady-state" constant growth form using projected and historical company-specific data, not a two-stage DCF model that erroneously assumes investors expect the longer-term growth of all companies to be equal to the growth in the economy as a whole.

Q. WHAT CURRENT DCF COST OF EQUITY ESTIMATES DO THESE GROWTH RATE RANGES IMPLY FOR THE GAS UTILITY GROUP?

A. Summing the LDC group's average dividend yield of approximately 4.0% with my growth rate range of a 5.5% to 6.5% developed earlier indicates a current DCF cost of equity for the LDC industry group of between 9.50% and 10.50%.

C. Capital Asset Pricing Model

Q. HOW ELSE DID YOU ESTIMATE THE COST OF EQUITY?

A. The cost of equity for the gas utility group was also estimated using the CAPM, which is a theory of market equilibrium that serves as the basis for current financial education and management. Under the CAPM, investors are assumed fully diversified, so that the relevant risk of an individual asset (e.g., common stock) is its volatility relative to the market as a whole, which is measured using a "beta" coefficient. Beta reflects the tendency of a stock's price to follow changes in the market, with stocks having a beta less than 1.00 being considered less risky and stocks with a beta greater than 1.00 being regarded as more risky. The CAPM is mathematically expressed as:

$$R_j = R_f + \beta_j (R_m - R_f)$$

where: R_j = required rate of return for stock j;
R_f = risk-free interest rate;
R_m = expected return on the market portfolio; and
β_j = beta, or systematic risk, for stock j.

While the CAPM is not without controversy, it is routinely referenced in the financial literature and regulatory proceedings, and firms' beta values are widely reported.

Q. HOW DID YOU APPLY THE CAPM?

A. I applied the CAPM using two methods to determine the risk premium for the market as a whole, or the (R_m - R_f) term in the CAPM formula. The first was based on historical rates of return and the second was based on forward-looking estimates of investors' required rates of return. In both instances, the companies included in the S&P 500 index were used as a proxy for the market portfolio and the 30-year U.S. Treasury bond served as the risk-free investment.

Q. PLEASE DESCRIBE THE FIRST METHOD BASED ON HISTORICAL RATES OF RETURN.

A. Under the historical rate of return approach, equity risk premiums are calculated by first measuring the rate of return (including dividends and capital gains and losses) actually realized on an investment in common stocks over historical time periods. The historical return on bonds is then subtracted from that earned on common stocks to measure equity risk premiums. Widely used in academia, the historical rate of return approach is based on the assumption that, given a sufficiently large number of observations over long historical periods, average market rates of return will converge to investors' required rates of return. From a more practical perspective, investors may base their expectations for the future on, or may have come to expect that they will earn, rates of return corresponding to those in the past.

Q. WHAT IS THE MARKET RISK PREMIUM BASED ON HISTORICAL RATES OF RETURN?

A. Perhaps the most exhaustive study of historical rates of return, and the one most frequently cited in regulatory proceedings, is that contained in *Market Results for Stocks, Bonds, Bills and Inflation*, variously published by Ibbotson Associates, Morningstar, Duff & Phelps, and Kroll. The annual rate of return realized on the S&P 500 averaged 12.04% over the period 1926 through 2023 while the annual average income rate of return on 30-year Treasury bonds over this same period averaged 4.87%. Thus, the market risk premium based on historical average annual rates of return is 7.17%, as shown on Schedule BHF-5.

Q. PLEASE DESCRIBE THE SECOND METHOD BASED ON FORWARD-LOOKING REQUIRED RATES OF RETURN.

A. Consistent with the CAPM being an expectational (i.e., forward-looking) model, the second method estimated the market risk premium using current indicators of investors' required rates of return. This method is similar to how the market risk premium is calculated under the Federal Energy Regulatory Commission's May 21, 2020 *Policy Statement on Determining Return on Equity for Natural Gas and Oil Pipelines (*"FERC *Policy Statement*"*)*. For the market portfolio, the cost of equity was estimated by applying the DCF model to the firms in the S&P 500 paying cash dividends, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. The expected dividend yield for each firm was obtained from *Value Line*, with the expected growth rate being based on the earnings forecasts published for each firm by *Value Line*, *I/B/E/S*, and *Zacks*. As shown in footnote (b) on Exhibit BHF-5, summing the 1.85% expected dividend yield for this market group, which is composed primarily of non-regulated firms, with the average of the *Value Line*, *I/B/E/S*, and *Zacks* projected growth rates of 10.10% produces a required rate of return from the market portfolio (Rm) of 11.95%.

Q. WHAT IS THE MARKET RISK PREMIUM BASED ON FORWARD-LOOKING REQUIRED RATES OF RETURN?

A. From the 11.95% required rate of return on the market portfolio, a market risk premium is calculated by subtracting the average yield on 30-year Treasury bonds during January 2024 of 4.26%. This produces a forward-looking market risk premium of 7.69%.

Q. WHAT IS THE NEXT STEP IN APPLYING THE CAPM?

A. Having calculated market risk premiums of 7.17% and 7.69% using historical rates of return and forward-looking rates of return, respectively, the next step is to calculate specific risk premiums for the LDC industry group. This is done by multiplying the alternative market risk premium estimates by the LDC group's average beta of 0.86, calculated using firm betas obtained from *Value Line* and shown on Schedule BHF-6, which produces LDC industry risk premiums of 6.20% and 6.65%.

Q. WHAT ARE THE RESULTING THEORETICAL CAPM COST OF EQUITY ESTIMATES FOR THE LDC GROUP?

A. Summing the industry risk premiums of 6.20% and 6.65% with a risk-free interest rate equal to the January 2024 30-year Treasury bond yield of 4.26% produces current theoretical CAPM cost of equity estimates for LDCs of 10.46% and 10.91%.

Q. ARE THESE THEORETICAL CAPM COST OF EQUITY ESTIMATES COMPLETE MEASURES OF INVESTORS' REQUIRED RATE OF RETURN FROM THE GROUP OF LDCS?

A. No. These cost of equity estimates are based on CAPM theory. However, as explained by Morningstar in its *2015 Classic Yearbook* edition of *Stocks, Bonds, Bills and Inflation*:

> One of the most remarkable discoveries of modern finance is that of a relationship between company size and return. Historically on average, small companies have higher returns than those of large ones. . . . The relationship between company size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks. (page 99, footnote omitted)

In other words, in addition to the systematic risk measured by beta, investors' required rate of return depends on a firm's relative size. To account for this, size discounts and premiums have been developed that need to be added to the theoretical CAPM cost of equity estimates to account for the level of a firm's market capitalization in determining the CAPM cost of equity. This is the same conclusion reached in the FERC *Policy Statement*, which prescribes a size adjustment in the CAPM to improve the accuracy of the cost of equity estimate.

Q. WHAT ARE THE CURRENT CAPM COST OF EQUITY ESTIMATES FOR THE LDC GROUP ONCE SIZE EFFECTS ARE TAKEN INTO ACCOUNT?

A. A schedule of discounts and premiums to account for differences in the market capitalization of a firm's equity relative to the S&P 500 is published annually, with the most recent By Kroll being reproduced in the lower portion of Schedule BHF-6. In the far right columns of the table in the upper portion of Schedule BHF-6, the market cap of each LDC in the industry group is displayed along with its corresponding size premium, with the average size premium for the industry group being 0.93%. This means that the theoretical CAPM cost of equity estimates need to be increased by 93 basis points to account for the industry group's relatively smaller size relative to the market. As shown on Schedule BHF-5, increasing the theoretical CAPM cost of equity estimates for the LDC group by this average size premium results in current CAPM cost of equity estimates based on historical and forward-looking rates of return of 11.39% and 11.84%, respectively.

D. Risk Premium Method

Q. HOW ELSE DID YOU ESTIMATE THE COST OF EQUITY?

A. I also estimated the cost of equity using a risk premium method based on ROEs previously authorized for LDCs by state regulatory commissions. The risk premium method to estimate investors' required rate of return is an extension of the risk-return tradeoff observed with bonds to common stocks. The cost of equity is estimated by determining the additional return investors require to forego the relative safety of a bond and bear the greater risks associated with common stock, and then adding this equity risk premium to the current yield on bonds.

Q. GENERALLY DESCRIBE THE APPLICATION OF THE RISK PREMIUM METHOD USING AUTHORIZED ROES.

A. Application of the risk premium method based on authorized ROEs is predicated on the presumption that allowed returns reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final orders. A current risk premium is estimated based on the difference between past authorized ROEs and then-prevailing interest rates. This risk premium is then added to current interest rates to estimate the cost of equity. The strength of this approach is that it is based on decades of data reflecting regulatory commission's evaluation of ROE for LDCs under various capital market conditions. Because this risk premium method is LDC-specific, it produces cost of equity estimates judged necessary to compensate for the risks of gas distribution and the ROE required to enable an LDC to attract capital on reasonable terms under current capital market conditions.

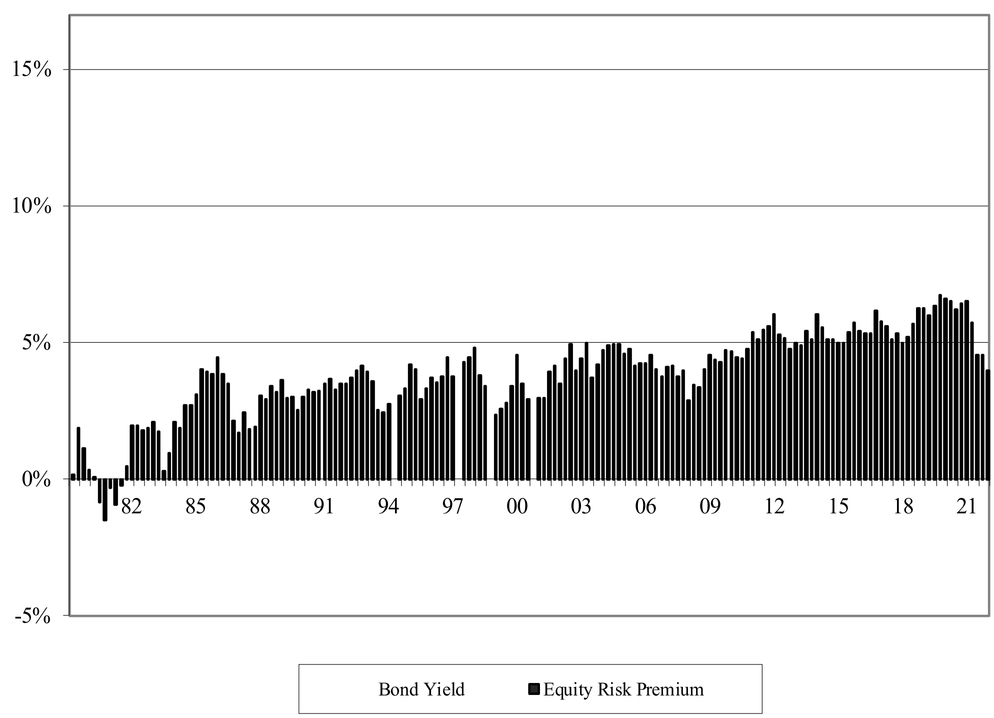
Q. WHAT WAS THE PRINCIPAL SOURCE OF THE DATA USED TO APPLY THIS RISK PREMIUM METHOD?

A. Regulatory Research Associates, Inc., ("RRA"), which is now a group within S&P Global Market Intelligence, and its predecessors have compiled the ROEs authorized for major electric and gas utilities by regulatory commissions across the U.S. The average ROE authorized for natural gas utilities published by RRA in each quarter between 1980 and 2023 are displayed in Schedule BHF-7. As shown there, the ROEs granted to LDCs over this 44-year period have averaged

11.37%, while the average utility bond yield has averaged 7.56%, resulting in an average risk premium of 3.81%.

Q. IS THIS 3.81% AVERAGE RISK PREMIUM THE RELEVANT BENCHMARK FOR ESTIMATING THE COST OF EQUITY?

A. No. It is necessary to account for the fact that authorized ROEs do not move in lockstep with interest rates. In particular, when interest rate levels are relatively high, ROEs tend to be lower (*i.e.*, equity risk premiums narrow), and when interest rates are relatively low, authorized ROEs are greater (*i.e.*, equity risk premiums increase). This inverse relationship can be observed in the data contained in Schedule BHF-7, which is shown graphically below. As evident there, the higher the level of interest rates (shaded bars), the lower the equity risk premiums (the solid bars calculated as the difference between authorized ROEs and bond yields), and vice versa:



The implication of this inverse relationship is that for a one percent increase or decrease in interest rates, the cost of equity may only rise or fall, say, one-half of a percent, respectively.

Q. HOW DID YOU ACCOUNT FOR THE INVERSE RELATIONSHIP BETWEEN EQUITY RISK PREMIUMS AND INTEREST RATES IN ESTIMATING THE COST OF EQUITY FOR THE LDC GROUP USING PAST AUTHORIZED ROES?

A. To account for the fact that equity risk premiums are lower when interest rates are high and higher when interest rates are low, I developed two regression equations relating authorized past equity risk premiums to average utility bond yields. The first was a simple linear regression between equity risk premiums and interest rates and the second equation adjusted for first order autocorrelation using the Prais-Winsten algorithm. Shown in the bottom portion of Schedule BHF-7, substituting the January 2024 yield of 5.51% on average utility bonds into the regression equations indicates that the equity risk premium at current interest rate levels is between approximately 4.75% and 4.88%.

Q. WHAT CURRENT COST OF EQUITY DOES THIS RISK PREMIUM IMPLY FOR THE GROUP OF LDCS?

A. As shown on Schedule BHF-6, the average S&P bond rating for the LDC industry group is A- and the average Moody's bond rating is A3. Adding the 4.75% and 4.88% equity risk premiums developed on Schedule BHF-7 to the January 2024 yield on single-A utility bonds of 5.48% produces a current risk premium cost of equity range of between 10.23% and 10.36%.

E. Comparable Earnings Method

Q. WHAT IS THE LAST METHOD THAT YOU USED TO ESTIMATE THE COST OF EQUITY?

A. Often referred to as the comparable earnings method, this approach looks to the rates of return that other firms of comparable risk and that compete for investors' capital are expected to earn on their book equity. Reference to the expected return on book equity of other LDCs demonstrates the level of earnings that KGS needs in order to offer investors a competitive return, be able to attract capital on reasonable terms, and maintain its financial integrity.

Q. WHAT RETURN ON BOOK EQUITY ARE OTHER LDCS EXPECTED TO EARN?

A. Schedule BHF-8 displays the return on book equity projected for each of the seven LDCs other than ONE Gas in the industry group for the 2024, 2025, and the 2027-2029 timeframes, calculated by dividing *Value Line's* projected earnings per share by average book value per share. As shown there, the average expected book ROE for this group is 9.3% in 2024 and 2025, and 10.1% for 2027-2029, with medians of 8.7%, 9.1%, and 9.9%, respectively.

IV. RECOMMENDED RETURN ON EQUITY

Q. WHAT IS YOUR CONCLUSION AS TO THE CURRENT COST OF EQUITY RANGE FOR LDCS?

A. The DCF method indicates a cost of equity range for the LDC group of between approximately 9.5% and 10.5%, and the CAPM indicates a cost of equity range of between approximately 11.4% and 11.8%, or between 10.5% and 10.9% if no size adjustment is included. Meanwhile, the risk premium method based on the authorized ROEs for LDCs and current interest rates indicates a cost of equity of between approximately 10.2% and 10.4%, and the comparable earnings method shows that other LDCs are expected to earn between 8.7% and 10.1% on their book equity. Taking into account that the DCF model may no longer reflect investor behavior and stock valuation, that the CAPM and risk premium method incorporate directly current interest rate levels on Treasury and utility bonds, respectively, and that the comparable earnings method is not market-based, I conclude that investors currently require a ROE from the LDC industry group in the 9.75% to 10.75% range.

Q. WHAT ROE DO YOU RECOMMEND FOR KGS?

A. I recommend an ROE for KGS of 10.25%, which is the midpoint of my cost of equity range. This ROE is slightly above the middle of my DCF model range, below the range indicated by my CAPM analyses, both with and without the size adjustment, and at the lower end of my risk premium method range.

Q. HAVE YOU CONDUCTED ANY CHECKS OF REASONABLENESS OF YOUR RECOMMENDED ROE?

A. Yes. I understand that since the 2008 Financial Crisis, utilities in Kansas have had their ROEs set by this Commission that resulted in an average risk premium over the reported yield on BBB/Baa rated public utility bonds of about 474 basis points. Adding this 4.74% risk premium to the January 2024 yield on triple-B utility bonds of 5.73% produces an ROE of 10.47%, which fully supports the reasonableness of my recommended ROE of 10.25% for KGS.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY IN THIS CASE?

A. Yes, it does.

VERIFICATION

STATE OF TEXAS)
) ss.
COUNTY OF TRAVIS)

Dr. Bruce H. Fairchild, being duly sworn upon his oath, deposes and states that he is an Independent Consultant for Kansas Gas Service, a Division of ONE Gas, Inc.; that he has read and is familiar with the foregoing Direct Testimony filed herewith; and that the statements made therein are true to the best of his knowledge, information, and belief.

Bruce H. Fairchild

Subscribed and sworn to before me this 21 day of February 2024.

NOTARY PUBLIC

My appointment Expires:
11/02/2025

BRYAN ANDERSON
NOTARY PUBLIC
STATE OF TEXAS
MY COMM. EXP. 11/02/25
NOTARY ID 12592363-3

APPENDIX A

BRUCE H. FAIRCHILD

FINCAP, INC.
Financial Concepts and Applications
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Summary of Qualifications

M.B.A. and Ph.D. in finance, accounting, and economics; Certified Public Accountant. Extensive consulting experience involving regulated industries, valuation of closely-held businesses, and other economic analyses. Previously held managerial and technical positions in government, academia, and business, and taught at the undergraduate, graduate, and executive education levels. Broad experience in technical research, computer modeling, and expert witness testimony.

Employment

Principal, FINCAP, Inc. (Sep. 1979 to present)	Economic consulting firm specializing in regulated industries and valuation of closely-held businesses. Assignments have involved electric, gas, telecommunication, and water/sewer utilities, with clients including utilities, consumer groups, municipalities, regulatory agencies, and cogenerators. Areas of participation have included revenue requirements, rate of return, rate design, tariff analysis, avoided cost, forecasting, and negotiations. Other assignments have involved some seventy valuations as well as various economic (e.g., damage) analyses, typically in connection with litigation. Presented expert witness testimony before courts and regulatory agencies on over one hundred occasions.
Adjunct Assistant Professor, University of Texas at Austin (Sep. 1979 to May. 1981)	Taught undergraduate courses in finance: Fin. 370 – Integrative Finance and Fin. 357 – Managerial Finance.
Assistant Director, Economic Research Division, Public Utility Commission of Texas (Sep. 1976 to Aug. 1979)	Division consisted of approximately twenty-five financial analysts, economists, and systems analysts responsible for rate of return, rate design, special projects, and computer systems. Directed Staff participation in rate cases, presented testimony on approximately thirty-five occasions, and was involved in some forty other cases ultimately settled. Instrumental in the initial development of rate of return and financial policy for newly-created agency. Performed independent research and managed State and Federal funded projects. Assisted in preparing appeals to the Texas Supreme Court and testimony presented before the Interstate Commerce Commission and Department of Energy. Maintained communications with financial community, industry representatives, media, and consumer groups. Appointed by Commissioners as Acting Director.

Assistant Professor, College of Business Administration, University of Colorado at Boulder (Jan. 1977 to Dec. 1978)	Taught graduate and undergraduate courses in finance: Fin. 305 – Introductory Finance, Fin. 401 – Managerial Finance, Fin. 402 – Case Problems in Finance, and Fin. 602 – Graduate Corporate Finance.
Teaching Assistant, University of Texas at Austin (Jan. 1973 to Dec. 1976)	Taught undergraduate courses in finance and accounting: Acc. 311 – Financial Accounting, Acc. 312 – Managerial Accounting, and Fin. 357 – Managerial Finance. Elected to College of Business Administration Teaching Assistants' Committee.
Internal Auditor, Sears, Roebuck and Company, Dallas, Texas (Nov. 1970 to Aug 1972)	Performed audits on internal operations involving cash, accounts receivable, merchandise, accounting, and operational controls, purchasing, payroll, etc. Developed operating and administrative policy and instruction. Performed special assignments on inventory irregularities and Justice Department Civil Investigative Demands.
Accounts Payable Clerk, Transcontinental Gas Pipeline Corp., Houston, Texas (May. 1969 to Aug. 1969)	Processed documentation and authorized payments to suppliers and creditors.

Education

Ph.D., Finance, Accounting, and Economics, University of Texas at Austin (Sep. 1974 to May 1980)	Doctoral program included coursework in corporate finance, investment theory, accounting, and economics. Elected to honor society of Phi Kappa Phi. Received University outstanding doctoral dissertation award. Dissertation: *Estimating the Cost of Equity to Texas Public Utility Companies*
M.B.A., Finance and Accounting, University of Texas at Austin, (Sep. 1972 to Aug. 1974)	Awarded Wright Patman Scholarship by World and Texas Credit Union Leagues. Professional Report: *Planning a Small Business Enterprise in Austin, Texas*
B.B.A., Accounting and Finance, Southern Methodist University, Dallas, Texas (Sep. 1967 to Dec. 1971)	Dean's List 1967-1971 and member of Phi Gamma Delta Fraternity.

Other Professional Activities

Certified Public Accountant, Texas Certificate No. 13,710 (October 1974); entire exam passed in May 1972. Member of the American Institute of Certified Public Accountants (Honorary).

Participated as session chairman, moderator, and paper discussant at annual meetings of Financial Management Association, Southwestern Finance Association, American Finance Association, and other professional associations.

Visiting lecturer in Executive M.B.A program at the University of Stellenbosch Graduate Business School, Belleville, South Africa (1983 and 1984).

Associate Editor of *Austin Financial Digest*, 1974-1975. Wrote and edited a series of investment and economic articles published in a local investment advisory service.

Military

Texas Army National Guard, Feb. 1970 to Sep. 1976. Specialist 5th Class with duty assignments including recovery vehicle operator for armor unit and company clerk for finance unit.

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Monographs

"On the Use of Security Analysts' Growth Projections in the DCF Model," with William E. Avera, *Earnings Regulation Under Inflation*, J. R. Foster and S. R. Holmberg, eds., Institute for Study of Regulation (1982).

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"Energy Conservation in Existing Residences, Project Director for development of instruction manual and workshops promoting retrofitting of existing homes, *Governor's Office of Energy Resources* and *Department of Energy* (1977-1978).

"Linear Algebra," "Calculus," "Sets and Functions," and "Simulation Techniques," contributed to and edited four mathematics programmed learning texts for MBA students, *Texas Bureau of Business Research* (1975).

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"Developing a Cost-of-Service Study," 1994 Texas Section American Water Works Association Annual Conference, Amarillo, Texas (March 1994).

"Financial Aspects of Cost of Capital and Common Cost Considerations," Kidder, Peabody & Co. Two-Day Rate Case Workshop for Regulated Utility Companies, New York, New York (June 1993).

"Cost-of-Service Studies and Rate Design," General Management of Electric Utilities (A Training Program for Electric Utility Managers from Developing Countries), Austin, Texas (October 1989 and November 1990 and 1991).

"Rate Base and Revenue Requirements," The University of Texas Regulatory Institute Fundamentals of Utility Regulation, Austin, Texas (June 1989 and 1990).

"Determining the Cost of Capital in Today's Diversified Companies," New Mexico State University Public Utilities Course Part II, Advanced Analysis of Pricing and Utility Revenues, San Francisco, California (June 1990).

"Estimating the Cost of Equity," Oklahoma Association of Tax Representatives, Tulsa, Oklahoma (May 1990).

"Impact of Regulations," Business and the Economy, Leadership Dallas, Dallas, Texas (November 1989).

"Accounting and Finance Workshop" and "Divisional Cost of Capital," New Mexico State University Current Issues Challenging the Regulatory Process, Albuquerque, New Mexico (April 1985 and 1986) and Santa Fe, New Mexico (March 1989).

"Divisional Cost of Equity by Risk Comparability and DCF Analyses," NARUC Advanced Regulatory Studies Program, Williamsburg, Virginia (February 1988) and USTA Rate of Return Task Force, Chicago, Illinois (June 1988).

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"PUC Retrofitting Program," Texas Electric Cooperatives Spring Workshop, Austin, Texas (May 1978).

"The Economics of Regulated Industries," Consumer Economics Forum, Houston, Texas (November 1977).

"Public Utilities as Consumer Targets – Is the Pressure Justified?" University of Texas at Dallas 2nd Annual Public Utilities Conference, Dallas, Texas (July 1977).

APPENDIX B

BRUCE H. FAIRCHILD
SUMMARY OF TESTIMONY BEFORE REGULATORY AGENCIES

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
1.	Arkansas Electric Cooperative	Arkansas PSC	U-3071	Aug-80	Wholesale Rate Design
2.	East Central Oklahoma Electric Cooperative	Oklahoma CC	26925	Sep-80	Retail Rate Design
3.	Kansas Gas & Electric Company	Kansas CC	115379-U	Nov-80	PURPA Rate Design Standards
4.	Kansas Gas & Electric Company	Kansas CC	128139-U	May-81	Attrition
5.	City of Austin Electric Department	City of Austin	--	Jun-81	PURPA Rate Design Standards
6.	Tarrant County Water Control and Improvement District No. 1	Texas Water Commission	--	Oct-81	Wholesale Rate Design
7.	Owentown Gas Company	Texas RRC	2720	Jan-82	Revenue Requirements and Retail Rate Design
8.	Kansas Gas & Electric Company	Kansas CC	134792-U	Aug-82	Attrition
9.	Mississippi Power Company	Mississippi PSC	U-4190	Sep-82	Working Capital
10.	Lone Star Gas Company	Texas RRC	3757; 3794	Feb-83	Rate of Return on Equity
11.	Kansas Gas & Electric Company	Kansas CC	134792-U	Feb-83	Rate of Return on Equity
12.	Southwestern Bell Telephone Company	Oklahoma CC	28002	Oct-83	Rate of Return on Equity
13.	Morgas Company	Texas RRC	4063	Nov-83	Revenue Requirements
14.	Seagull Energy	Texas RRC	4541	Jul-84	Rate of Return
15.	Southwestern Bell Telephone Company	FCC	84-800	Nov-84	Rate of Return on Equity
16.	Kansas Gas & Electric Company, Kansas City Power & Light Company, and Kansas Electric Power Cooperatives	Kansas CC	142098-U; 142099-U; 142100-U	May-85	Nuclear Plant Capital Costs and Allowance for Funds Used During Construction
17.	Lone Star Gas Company	Texas RRC	5207	Oct-85	Overhead Cost Allocation
18.	Westar Transmission Company	Texas RRC	5787	Nov-85 Jan-86 Jul-86	Rate of Return, Rate Design, and Gas Processing Plant Economics
19.	City of Houston	Texas Water Commission	RC-022; RC-023	Nov-86	Line Losses and Known and Measurable Changes
20.	ENSTAR Natural Company	Alaska PUC	TA 50-4; R-87-2; U-87-2	Nov-86 May-87 May-87	Cost Allocation, Rate Design, and Tax Rate Changes
21.	Brazos River Authority	Texas Water Commission	RC-020	Jan-87	Revenue Requirements and Rate Design
22.	East Texas Industrial Gas Company	Texas RRC	5878	Feb-87	Revenue Requirements and Rate Design

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
23.	Seagull Energy	Texas RRC	6629	Jun-87	Revenue Requirements
24.	ENSTAR Natural Company	Alaska PUC	U-87-42	Jul-87 Sep-87 Sep-87	Cost Allocation, Rate Design, and Contracts
25.	High Plains Natural Gas Company	Texas RRC	6779	Sep-87	Rate of Return
26.	Hughes Texas Petroleum	Texas RRC	2-91,855	Jan-88	Interim Rates
27.	Cavallo Pipeline Company	Texas RRC	7086	Sep-88	Revenue Requirements
28.	Union Gas System, Inc.	Kansas CC	165591-U	Mar-89 Aug-89	Rate of Return
29.	ENSTAR Natural Gas Company	Alaska PUC	U-88-70	Mar-89	Cost Allocation and Bypass
30.	Morgas Co.	Texas RRC	7538	Aug-89	Rate of Return and Cost Allocation
31.	Corpus Christi Transmission Company	Texas RRC	7346	Sep-89	Revenue Requirements
32.	Amoco Gas Co.	Texas RRC	7550	Oct-89	Rate of Return and Cost Allocation
33.	Iowa Southern Utilities	Iowa Utilities Board	RPU-89-7	Nov-89 Mar-90	Rate of Return on Equity
34.	Southwestern Bell Telephone Company	FCC	89-624	Feb-90 Apr-90	Rate of Return on Equity
35.	Lower Colorado River Authority	Texas PUC	9427	Mar-90 Aug-90 Aug-90	Revenue Requirements
36.	Rio Grande Valley Gas Company	Texas RRC	7604	May-90	Consolidated FIT and Depreciation
37.	Southern Union Gas Company	El Paso PURB	--	Oct-90	Disallowed Expenses and FIT
38.	Iowa Southern Utilities	Iowa Utilities Board	RPU-90-8	Nov-90 Feb-91	Rate of Return on Equity
39.	East Texas Gas Systems	Texas RRC	7863	Dec-90	Revenue Requirements
40.	San Jacinto Gas Transmission	Texas RRC	7865	Dec-90	Revenue Requirements
41.	Southern Union Gas Company	Austin; Texas RRC	-- 7878	Feb-91 Feb-91	Rate of Return and Acquisition Adjustment
42.	Southern Union Gas Company	Port Arthur; Texas RRC	-- 8033	Mar-91 Aug-91 Oct-91	Rate of Return and Acquisition Adjustment
43.	Cavallo Pipeline Company	Texas RRC	8016	Jun-91	Revenue Requirements

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
44.	New Orleans Public Service Inc.	New Orleans City Council	CD-91-1	Jun-91 Mar-92	Rate of Return on Equity
45.	Houston Pipe Line Company	Texas RRC	8017	Jul-91	Rate of Return
46.	Southern Union Gas Company	El Paso PURB	--	Aug-91 Sep-91	Acquisition Adjustment
47.	Southwestern Gas Pipeline, Inc.	Texas RRC	8040	Jan-92 Feb-92	Rate Design and Settlement
48.	City of Fort Worth	Texas Water Commission	8748-A 9261-A	Mar-92 Aug-92 Dec-92 Oct-94 Nov-94	Interim Rates, Revenue Requirements, and Public Interest
49.	Southern Union Gas Company	Oklahoma Corp. Com.	--	Jun-92	Rate of Return
50.	Minnegasco	Minnesota PUC	G-008/GR-92-400	Jul-92 Dec-92	Rate of Return
51.	Guadalupe-Blanco River Authority	Texas PUC	11266	Sep-92	Cost Allocation and Bond Funds
52.	Dorchester Intra-State Gas System	Texas RRC	8111	Oct-92 Nov-92	Rate Impact of System Upgrade
53.	Corpus Christi Transmission Company GP and GPII	Texas RRC	8300 8301	Oct-92 Oct-92	Revenue Requirements
54.	East Texas Industrial Gas Company	Texas RRC	8326	Mar-93	Revenue Requirements
55.	Arkansas Louisiana Gas Company	Arkansas PSC	93-081-U	Apr-93 Oct-93	Rate of Return on Equity
56.	Texas Utilities Electric Company	Texas PUC	11735	Jun-93 Jul-93	Impact of Nuclear Plant Construction Delay
57.	Minnegasco	Minnesota PUC	G-008/GR-93-1090	Nov-93 Apr-94	Rate of Return
58.	Gulf States Utilities Company	Municipalities	--	May-94 Oct-94 Nov-94	Rate of Return on Equity
59.	Louisiana Power & Light Company	Louisiana PSC	U-20925	Aug-94 Feb-95	Rate of Return on Equity
60.	San Jacinto Gas Transmission	Texas RRC	8429	Sep-94	Revenue Requirements
61.	Cavallo Pipeline Company	Texas RRC	8465	Sep-94	Revenue Requirements
62.	Eastrans Limited Partnership	Texas RRC	8385	Oct-94	Revenue Requirements
63.	Gulf States Utilities Company	Louisiana PSC	U-19904	Oct-94	Rate of Return on Equity

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
64.	Entergy Services, Inc.	FERC	ER95-112-000	Mar-95 Nov-95	Rate of Return on Equity
65.	East Texas Gas Systems	Texas RRC	8435	Apr-95	Revenue Requirements
66.	System Energy Resources, Inc.	FERC	ER95-1042-000	May-95 Dec-95 Jan-96	Rate of Return on Equity
67.	Minnegasco	Minnesota PUC	G-008/GR-95-700	Aug-95 Dec-95	Rate of Return
68.	Entex	Louisiana PSC	U-21586	Aug-95	Rate of Return
69.	City of Fort Worth	Texas NRCC	SOAH 582-95-1084	Nov-95	Public Interest of Contract
70.	Seagull Energy Corporation	Texas RRC	8589	Nov-95	Revenue Requirements
71.	Corpus Christi Transmission Company LP	Texas RRC	8449	Feb-96	Revenue Requirements
72.	Missouri Gas Energy	Missouri PSC	GR-96-285	Apr-96 Sep-96 Oct-96	Rate of Return
73.	Entex	Mississippi PSC	96-UA-202	May-96	Rate of Return
74.	Entergy Gulf States, Inc.	Louisiana PSC	U-22084	May-96	Rate of Return on Equity (Gas)
75.	Entergy Gulf States, Inc.	Louisiana PSC	U-22092	May-96 Oct-96	Rate of Return on Equity
76.	American Gas Storage, L.P.	Texas RRC	8591	Sep-96	Revenue Requirements
77.	Entergy Louisiana, Inc.	Louisiana PSC	U-20925	Sep-96 Oct-96	Rate of Return on Equity
78.	Lone Star Pipeline and Gas Company	Texas RRC	8664	Oct-96 Jan-97	Rate of Return
79.	Entergy Arkansas, Inc.	Arkansas PSC	96-360-U	Oct-96 Sep-97	Rate of Return on Equity
80.	East Texas Gas Systems	Texas RRC	8658	Nov-96	Revenue Requirements
81.	Entergy Gulf States, Inc.	Texas PUC	16705	Nov-96 Jul-97	Rate of Return on Equity
82.	Eastrans Limited Partnership	Texas RRC	8657	Nov-96	Revenue Requirements
83.	Enserch Processing, Inc.	Texas RRC	8763	Nov-96	Interim Rates
84.	Entergy New Orleans, Inc.	City of New Orleans	UD-97-1	Feb-97 Mar-97 May-98	Rate of Return on Equity

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
85.	ENSTAR Natural Gas Company	Alaska PUC	U-96-108	Mar-97 Apr-97	Service Area Certificate
86.	San Jacinto Gas Transmission	Texas RRC	8741	Sep-97	Revenue Requirements
87.	Missouri Gas Energy	Missouri PSC	GR-98-140	Nov-97 Apr-98 May-98	Rate of Return
88.	Corpus Christi Transmission Company LP	Texas RRC	8762	Dec-97	Revenue Requirements
89.	Texas-New Mexico Power Company	Texas PUC	17751	Feb-98	Excess Cost Over Market
90.	Southern Union Gas Company	Texas RRC	8878	May-98	Rate of Return
91.	Entergy Louisiana, Inc.	Louisiana PSC	U-20925	May-98 Jul-98	Financial Integrity
92.	Entergy Gulf States, Inc.	Louisiana PSC	U-22092	May-98 Jul-98	Financial Integrity
93.	ACGC Gathering Company, LLC	Texas RRC	8896	Sep-98	Cost-based Rates
94.	American Gas Storage, L.P.	Texas RRC	8855	Oct-98	Revenue Requirements
95.	Duke Energy Intrastate Network	Texas RRC	8940	Jun-99	Rate of Return
96.	Aquila Energy Corporation	Texas RRC	8970	Aug-99	Revenue Requirements
97.	San Jacinto Gas Transmission	Texas RRC	8974	Sep-99	Revenue Requirements
98.	Southern Union Gas Company	El Paso PURB	--	Oct-99	Rate of Return
99.	TXU Lone Star Pipeline	Texas RRC	8976	Oct-99 Feb-00	Rate of Return
100.	Sharyland Utilities, L.P.	Texas PUC	21591	Nov-99	Rate of Return
101.	TXU Lone Star Gas Distribution	Texas RRC	9145	Apr-00 Aug-00	Rate of Return
102.	Rotherwood Eastex Gas Storage	Texas RRC	9136	May-00	Revenue Requirements
103.	Eastex Gas Storage & Exchange, Inc.	Texas RRC	9137	May-00	Revenue Requirements
104.	Eastex Gas Storage & Exchange, Inc.	Texas RRC	9138	Jul-00	Revenue Requirements
105.	East Texas Gas Systems	Texas RRC	9139	Jul-00	Revenue Requirements
106.	Eastrans Limited Partnership	Texas RRC	9140	Aug-00	Revenue Requirements
107.	Reliant Energy – Entex	City of Tyler	--	Oct-00	Rate of Return
108.	City of Fort Worth	Texas NRCC	SOAH 582-00-1092	Dec-00	CCN – Rates and Financial Ability
109.	Entergy Services, Inc.	FERC	RTO1-75	Dec-00	Rate of Return on Equity

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
110	ENSTAR Natural Gas Company	Alaska PUC	U-00-88	Jun-01 Aug-01 Nov-01 Sep-02 Dec-02	Revenue Requirements, Cost Allocation, and Rate Design
111.	TXU Gas Distribution	Texas RRC	9225	Jul-01	Rate of Return
112.	Centana Intrastate Pipeline LLC	Texas RRC	9243	Aug-01	Rate of Return
113.	Maxwell Water Supply Corp.	Texas NRCC	SOAH-582-01-0802	Oct-01 Mar-02 Apr-02	Reasonableness of Rates
114.	Reliant Energy Arkla	Arkansas PSC	01-243-U	Dec-01 Jun-01	Rate of Return
115.	Entergy Services, Inc.	FERC	ER01-2214-000	Mar-02	Rate of Return on Equity
116.	TXU Lone Star Pipeline	Texas RRC	9292	Apr-02	Rate of Return
117.	Southern Union Gas Company	El Paso PURB	--	Apr-02	Rate of Return
118.	San Jacinto Gas Transmission Co.	Texas RRC	9301	May-02	Rate of Return
119.	Duke Energy Intrastate Network	Texas RRC	9302	May-02	Rate of Return
120.	Reliant Energy Arkla	Oklahoma CC	200200166	May-02	Rate of Return
121.	TXU Gas Distribution	Texas RRC	9313	Jul-02 Sep-02	Rate of Return
122.	Entergy Mississippi, Inc.	Mississippi PSC	2002-UN-256	Aug-02	Rate of Return on Equity
123.	Aquila Storage & Transportation LP	Texas RRC	9323	Sep-02	Revenue Requirements
124.	Panther Pipeline Ltd.	Texas RRC	9291	Oct-02	Revenue Requirements
125.	SEMCO Energy	Michigan PSC	U-13575	Nov-02	Revenue Requirements
126.	CenterPoint Energy Entex	Louisiana PSC	U-26720	Jan-03	Rate of Return
127.	Crosstex CCNG Transmission Ltd.	Texas RRC	9363	May-03	Revenue Requirements
128.	TXU Gas Company	Texas RRC	9400	May-03 Jan-04	Rate of Return
129.	Eastrans Limited Partnership	Texas RRC	9386	May-03	Rate of Return
130.	CenterPoint Energy Entex	City of Houston		Jun-03	Rate of Return
131.	East Texas Gas Systems, L.P.	Texas RRC	9385	Jun-03	Rate of Return
132.	ENSTAR Natural Gas Company	Alaska RCA	U-03-084	Aug-03 Nov-03	Line Extension Surcharge
133.	CenterPoint Energy Arkla	Louisiana PSC		Nov-03	Rate of Return
134.	ENSTAR Natural Gas Company	Alaska RCA	U-03-091	Feb-04	Cost Separation and Taxes

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Summary of Testimony Before Regulatory Agencies
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No.	Utility Case	Agency	Docket	Date	Nature of Testimony
135.	Sid Richardson Pipeline, Ltd.	Texas RRC	9532	Jun-04 Nov-04	Revenue Requirements
136.	ETC Katy Pipeline, Ltd.	Texas RRC	9524	Sep-04	Revenue Requirements
137.	CenterPoint Energy Entex	Mississippi PSC	03-UN-0831	Sep-04	Rate Formula
138.	Centana Intrastate Pipeline LLC	Texas RRC	9527	Sep-04	Rate of Return
139.	SEMCO Energy	Michigan PSC	U-14338	Dec-04	Revenue Requirements
140.	Atmos Energy – Energas	Texas RRC	9539	Feb-05	Regulatory Policy
141.	Crosstex North Texas Pipeline, L.P.	Texas RRC	9613	Sep-05	Revenue Requirements
142.	SiEnergy, L.P.	Texas RRC	9604	Dec-05	Rate of Return, Income Taxes, and Cost Allocation
143.	ENSTAR Natural Gas Company	Alaska RCA	TA-140-4	Feb-06	Connection Fees
144.	SEMCO Energy	Michigan PSC	U-14984	May-06 Dec-06	Revenue Requirements
145.	Atmos Energy – Mid-Tex	Texas RRC	9676	May-06 Oct-06	Revenue Requirements
146.	EasTrans Limited Partnership	Texas RRC	9659	Jun-06	Rate of Return
147.	Kinder Morgan Texas Pipeline, L.P.	Texas RRC	9688	Jul-06	Rate of Return
148.	Crosstex CCNG Transmission Ltd.	Texas RRC	9660	Aug-06	Revenue Requirements
149.	Enbridge Pipelines (North Texas), LP	Texas RRC	9691	Oct-06	Rate of Return
150.	Panther Interstate Pipeline Energy	FERC	CP03-338-00	Mar-07	Revenue Requirements
151.	El Paso Electric Company	Texas PUC	34494	Jul-07	CCN
152.	El Paso Electric Company	NM PRC	07-00301-UT	Jul-07	CCN
153.	Atmos Energy	Kansas CC	08-ATMG-280-RTS	Sep-07 Feb-08	Rate of Return on Equity
154.	Centana Intrastate Pipeline LLC	Texas RRC	9759	Sep-07	Rate of Return
155.	Texas Gas Service Company	Texas RRC	9770	Nov-07	Rate of Return
156.	ENSTAR Natural Gas Company	Alaska RCA	U-08-25	Jun-08	Rate Class Switching
157.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-131-301	Oct-08	Rate of Return
158.	ExxonMobil Pipeline Co.	Alaska RCA	TL-140-304	Nov-08	Rate of Return
159.	Crosstex North Texas Pipeline, L.P.	Texas RRC	9843	Dec-08	Revenue Requirements
160.	Koch Alaska Pipeline Company	Alaska RCA	TL 128-308	Dec-08	Rate of Return
161.	Unocal Pipeline Company	Alaska RCA	TL 118-312	Dec-08	Rate of Return

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
162.	ETC Katy Pipeline, Ltd.	Texas RRC	9841	Dec-08	Revenue Requirements
163.	Oklahoma Natural Gas	Oklahoma CC	200800348	Jan-09	Rate of Return on Equity
164.	Entergy Mississippi, Inc.	Mississippi PSC	EC-123-0082	Mar 09	Rate of Return on Equity
165.	ENSTAR Natural Gas Company	Alaska RCA	U-09-69 U-09-70	Jun-09 Jul-09 Oct-09	Revenue Requirements, Cost Allocation, and Rate Design
166.	EasTrans, LLC	Texas RRC	9857	Jun-09	Rate of Return
167.	Oklahoma Natural Gas	Oklahoma CC	200900110	Jun-09	Rate of Return
168.	Crosstex CCNG Transmission Ltd.	Texas RRC	9858	Jun-09	Revenue Requirements
169.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-137-301	Jul-09	Rate of Return
170.	ENSTAR Natural Gas Company	Alaska RCA	U-08-142	Jul-09	Gas Cost Adjustment
171.	Kinder Morgan Texas Pipeline, LLC	Texas RRC	9889	Jul-09	Rate of Return
172.	Koch Alaska Pipeline Company	Alaska RCA	TL 133-308	Aug-09	Rate of Return
173.	ExxonMobil Pipeline Co.	Alaska RCA	TL-147-304	Nov-09	Rate of Return
174.	Texas Gas Service Company	El Paso PURB	--	Dec-09	Rate of Return
175.	Unocal Pipeline Company	Alaska RCA	TL126-312	Dec-09	Rate of Return
176.	Kuparuk Transportation Company	Alaska RCA	P-08-05	Apr-10	Rate of Return
177.	Trans-Alaska Pipeline System	FERC	ISO9-348-000	Apr 10 Oct 10	Rate of Return
178.	Texas Gas Service	Texas RRC	9988	May 10 Aug 10	Rate of Return
179.	SEMCO Energy Gas Company	Michigan PSC	U-16169	Jun 10 Dec 10	Revenue Requirements
180.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-137-301	Jul 10	Rate of Return
181.	Koch Alaska Pipeline Company, LLC	Alaska RCA	TL-138-308	Aug 10	Rate of Return
182.	CPS Energy	Texas PUC	36633	Sep 10 Apr 11	Rate of Return for MOU
183.	ExxonMobil Pipeline Co.	Alaska RCA	TL-151-304	Dec 10	Rate of Return
184.	Unocal Pipeline Company	Alaska RCA	TL132-312	Feb 11	Rate of Return
185.	New Mexico Gas Company	NM PRC	11-00042-UT	Mar 11	Rate of Return
186.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-143-301	May 11	Rate of Return

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
187.	Enbridge Pipelines (Southern Lights)	FERC	IS11-146-000	Jun 11 Nov 11	Rate of Return
188.	Koch Alaska Pipeline Company, LLC	Alaska RCA	TL-138-___	Jul 11	Rate of Return
189.	Unocal Pipeline Company	Alaska RCA	TL126-___	Dec 11	Rate of Return
190.	Kansas Gas Service	Kansas CC	12-KGSC-835-RTS	May 12 Oct 12	Rate of Return
191.	ExxonMobil Pipeline Co.	Alaska RCA	TL-157-304	Jun 12	Rate of Return
192.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-149-301	Jul 12	Rate of Return
193.	Seaway Crude Pipeline Company	FERC	IS12-226-000	Aug 12 Feb 13	Rate of Return
194.	Cross Texas Transmission, LLC	Texas PUC	40604	Aug 12 Oct 12 Nov 12	Revenue Requirements
195.	Wind Energy Transmission Texas	Texas PUC	40606	Aug 12 Nov 12	Revenue Requirements
196.	Lone Star Transmission LLC	Texas PUC	40798	Nov 12	Revenue Requirements
197.	West Texas Gas Company	Texas RRC	10235	Jan 13	Rate of Return
198.	Cross Texas Transmission, LLC	Texas PUC	41190	Feb 13	Revenue Requirements
199.	ExxonMobil Pipeline Co.	Alaska RCA	TL-162-304	Apr 13	Rate of Return
200.	EasTrans,LLC	Texas RRC	10276	Jul 13	Rate of Return
201.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-152-301	Jul 13	Rate of Return
202.	BP Pipelines (Alaska) Inc.	Alaska RCA	TL-143-311	Sep 13	Rate of Return
203.	Wind Energy Transmission Texas	Texas PUC	41923	Oct 13	Revenue Requirements
204.	Oliktok Pipeline Company	Alaska RCA	P-13-013	Nov 13	Rate of Return
205.	Aqua Texas Southeast Region-Gray	Texas CEQ	2013-2007-UCR	Apr 14	Revenue Requirements
206.	Entergy Mississippi	Mississippi PSC	EC-123-0082	Jun 14	Rate of Return on Equity
207.	Westlake Ethylene Pipeline	Texas RRC	10358	Jul 14 Aug 15	Rates
208.	ExxonMobil Pipeline Co.	Alaska RCA	TL-164-304	Jul 14	Rate of Return
209.	ConocoPhillips Transportation Alaska	Alaska RCA	TL-154-301	Aug 14	Rate of Return
210.	ENSTAR Natural Gas Company	Alaska RCA	TA-262-4	Sep 14 Jun 15	Revenue Requirements, Cost Allocation, and Rate Design

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Summary of Testimony Before Regulatory Agencies
(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
211.	Oliktok Pipeline Company	Alaska RCA	TL-44-334	Mar 15	Rate of Return
212.	Entergy Arkansas, Inc.	Arkansas PSC	15-0150U	Apr 15 Oct 15 Dec 15	Rate of Return on Equity
213.	Wind Energy Transmission Texas	Texas PUC	44746	Jun 15	Revenue Requirements
214.	Texas City	Texas RRC	10408	Jun 15 Nov 15	Pipeline Annual Assessment
215.	Oklahoma Natural Gas	Oklahoma CC	201500213	Jul 15 Nov 15	Rate of Return
216.	PTE Pipeline LLC	Alaska RCA	P-12-015	Sep 15	Rate of Return
217.	Northeast Transmission Development, LLC	FERC	ER16-453	Dec 15	Formula Rates
218.	Oncor Electric Delivery	Texas PUC	45188	Dec 15	Public Interest of Acquisition
219.	Corix Utilities (Texas)	Texas PUC	45418	Dec 15 Oct 16	Rate of Return
220.	Texas Gas Service	Texas RRC	10488	Dec 15	Rate of Return
221.	Texas Gas Service	Texas RRC	10506	Mar 16 Jun 16	Rate of Return
222.	Kansas Gas Service	Kansas CC	16-KGSG-491-RTS	May 16 Sep 16	Rate of Return on Equity
223.	ENSTAR Natural Gas Company	Alaska RCA	TA-285-4	Jun 16 Apr 17	Revenue Requirements, Cost Allocation, and Rate Design
224.	Texas Gas Service	Texas RRC	10526	Jun 16	Rate of Return
225.	West Texas LPG Pipeline	Texas RRC	10455	Aug 16 Jan 17	Rates and Rate of Return
226.	Liberty Utilities	Texas PUC	46356	Sep 16 Feb 17 Jun 17	Revenue Requirements and Rate of Return
227.	DesertLink LLC	FERC	ER17-135	Oct 16	Formula Rates
228.	Houston Pipe Line Co.	Texas RRC	10559	Nov 16	Revenue Requirements
229.	Texas Gas Service	Texas RRC	10656	Jun 17	Rate of Return
230.	Trans-Pecos Pipeline	Texas RRC	10646	Sep 17 Feb 18	Revenue Requirements
231.	Comanche Trail Pipeline	Texas RRC	10647	Sep 17 Feb 18	Revenue Requirements
232.	Alpine High Pipeline	Texas RRC	10665	Oct 17 Feb 18	Revenue Requirements

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Summary of Testimony Before Regulatory Agencies

(Continued)

No.	Utility Case	Agency	Docket	Date	Nature of Testimony
233.	SiEnergy, LP	Texas RRC	10679	Jan 18	Rate of Return
234.	Targa Midland Gas Pipeline LLC	Texas RRC	10690	Jan 18	Revenue Requirements
235.	ET Fuel, LP	Texas RRC	10706	Apr 18	Revenue Requirements
236.	Texas Gas Service	Texas RRC	10739	Jun 18	Rate of Return
237.	Kansas Gas Service	Kansas CC	18-KGSG-560-RTS	Jun 18 Nov 18	Rate of Return on Equity
238.	Oliktok Pipeline Company	Alaska RCA	TL46-334	Jul 18	Rate of Return
239.	Red Bluff Express, LLC	Texas RRC	10752	Jul 18	Revenue Requirements
240.	PTE Pipeline LLC	Alaska RCA	P-18-0__	Jul 18	Rate of Return
241.	Agua Blanca, LLC	Texas RRC	10761	Aug 18	Revenue Requirements
242.	Texas Gas Service	Texas RRC	10766	Aug 18	Rate of Return
243.	Republic Transmission LLC	FERC	ER19-___	Dec 18	Formula Rates
244.	Gulf Coast Express Pipeline LLC	Texas RRC	10825	Feb 19	Revenue Requirements
245.	Cook Inlet Natural Gas Storage Alaska, LLC	Alaska RCA	U-18-043	Mar 19 Apr 19	Accumulated Deferred Income Taxes and Working Capital
246.	Impulsora Pipeline LLC	Texas RRC	10829	Mar 19	Revenue Requirements
247.	SEMCO Energy Gas Co.	Michigan PSC	U-20479	May 19 Oct 19	Revenue Requirements
248.	Liberty Utilities (Fox River) LLC	AAA	01-18-0002-2510	Jul 19 Oct 19	Revenue Requirements
249.	AMP Intrastate Pipeline LLC	Texas RRC	10887	Aug 19	Revenue Requirements
250.	Corix Utilities (Texas) Inc.	Texas PUC	49923	Aug 19 Jul 20 Aug 20	TCJA Tax Expense Reduction
251.	Colonial Pipeline Company	FERC	OR18-7-003	Nov 19 Feb 20 May 20 Jul 20	Rate of Return
252.	Texas Gas Service	Texas RRC	10928	Dec 19 Apr 20	Rate of Return
253.	Mississippi Power Company	Mississippi PSC	2019-UN-219	Feb 20	Rate of Return on Equity
254.	Corix Utilities (Texas)	Texas PUC	50557	Mar 20 Mar 21	Rate of Return and Excess ADFIT
255.	SouthCross CCNG Transmission	Texas RRC	10967	May 20	Revenue Requirements
256.	Kinder Morgan Border Pipeline LLC	Texas RRC	10980	Jun 20	Revenue Requirements

Bruce H. Fairchild
Summary of Testimony Before Regulatory Agencies
(Continued)

257.	Monarch Utilities I LP	Texas PUC	50944	Jul 20 Nov 20	Rate of Return
258.	West Texas Gas, Inc.	Texas RRC	10998	Aug 20	Revenue Requirements, Rate of Return, and Cost of Service Study
259.	Centric Gas Services, LLC	Texas RRC		Oct 20	Rate of Return
260.	CoServ Gas, Ltd	Texas RRC	00005136	Nov 20	Rate of Return
261.	Permian Highway Pipeline LLC	Texas RRC	00005306	Dec 20	Revenue Requirements
262.	Whistler Pipeline LLC	Texas RRC	00005675	Feb 21	Revenue Requirements
263.	Oklahoma Natural Gas	Oklahoma CC	202100063	May 21 Oct 21	Rate of Return
264.	Oliktok Pipeline Company	Alaska RCA	TL47-334	Jul 21	Rate of Return
265.	Participating Gas Utilities	Texas RRC	00007061	Jul 21 Oct 21	Excess Gas Cost Securitization
266.	Texas Pipeline Webb County Lean System, LLC	Texas RRC	00008188	Nov 21	Revenue Requirements
267.	Legend Gas Pipeline LLC	Texas RRC	00008714	Jan 22	Revenue Requirements
268.	Oliktok Pipeline Company	Alaska RCA	TL48-334	Mar 22	Rate of Return
269.	Texas Gas Service	Texas RRC	00009896	Jun 22 Oct 22	Rate of Return
270.	ENSTAR Natural Gas Company	Alaska RCA	U-22-081	Aug 22 Jul 23	Income Taxes, Cost Allocation, and Rate Design
271.	Acacia Natural Gas, L.L.C.	Texas RRC	00010150	Aug 22	Revenue Requirements
272.	Corix Utilities (Texas)	Texas PUC	53815	Aug 22 Sep 23	Rate of Return, Cost Allocation, and Rate Design
273.	Oliktok Pipeline Company	Alaska RCA	TL50-334/51-334	Dec 22	Rate of Return
274.	Delaware-Permian Pipeline LLC	Texas RRC	00013058	Mar 23	Revenue Requirements
275.	SiEnergy LLC	Texas RRC	00013504	Mar 23	Rate of Return
276.	Texas Gas Service	Texas RRC	00014399	Jun 23	Rate of Return
277.	CoServ Gas, Ltd	Texas RRC	00014771	Jul 23	Rate of Return
278.	Matterhorn Express Pipeline, LLC	Texas RRC	00014719	Aug 23	Revenue Requirements
279.	TPL SouthTex Transmission Co. LP	Texas RRC	00015056	Aug 23	Revenue Requirements

APPENDIX C

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2023.
OR
☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _________ to _________.
Commission file number 001-36108

ONE Gas, Inc.

(Exact name of registrant as specified in its charter)

Oklahoma	**46-3561936**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
15 East Fifth Street **Tulsa, OK**	**74103**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **(918) 947-7000**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of exchange on which registered
Common Stock, par value $0.01 per share	OGS	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the equity securities held by nonaffiliates based on the closing trade price of the registrant on June 30, 2023, was $4.1 billion.

On February 16, 2024, we had 56,546,006 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the definitive proxy statement to be delivered to shareholders in connection with the Annual Meeting of Shareholders to be held May 23, 2024, are incorporated by reference in Part III.

No family relationship exists between any of the executive officers, nor is there any arrangement or understanding between any executive officer and any other person pursuant to which the officer was selected.

ITEM 1A. RISK FACTORS

Our investors should consider the following risks that could affect us and our business. Although we believe we have discussed the key factors, our investors need to be aware that other risks may prove to be important in the future. New risks may emerge at any time, and we cannot predict such risks or estimate the extent to which they may affect our financial performance. Investors should carefully consider the following discussion of risks and the other information included or incorporated by reference in this Annual Report, including Forward-Looking Statements, which are included in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

OPERATIONAL RISKS

Our business is subject to operational hazards and unforeseen interruptions that could materially and adversely affect our business and for which we may not be insured adequately.

We are subject to all the risks and hazards typically associated with the natural gas distribution business that could affect the public safety as well as the reliability of our distribution system. Operating risks include, but are not limited to, leaks, accidents, pipeline ruptures and the breakdown or failure of equipment or processes. Other operational hazards and unforeseen interruptions include adverse weather conditions, accidents, explosions, fires, the collision of equipment or vehicles with our pipeline facilities and catastrophic events, such as severe weather events, hurricanes, thunderstorms, tornadoes, sustained extreme temperatures, earthquakes, floods, acts of terrorism, pandemics and other health crises, or other similar events beyond our control. Climate change could cause these catastrophic events to become more severe or more frequent. It is also possible that our facilities, or those of our counterparties or service providers, could be direct targets or indirect casualties of an act of terrorism, including cyber-attacks. These issues could result in legal liability, repair and remediation costs, increased operating costs, significantly increased capital expenditures, regulatory fines and penalties and other costs and a loss of customer confidence.

Our general liability, cyber, and property insurance policies for many of these hazards and risks are subject to certain limits, deductibles, and policy exclusions. The insurance proceeds received for any loss of, or any damage to, any of our systems or facilities or to third parties may not be sufficient to restore the total loss or damage. Further, the proceeds of any such insurance may not be received in a timely manner. The occurrence of any of the foregoing could have a material adverse effect on our financial condition, results of operations and cash flows.

We may be unable to attract and retain management and professional and technical employees, or we may experience workforce disruptions due to strikes or work stoppages by our unionized employees, which could adversely impact our operations, earnings, and cash flows.

Our ability to implement our business strategy, satisfy our regulatory requirements, and serve our customers is dependent upon our ability to continue to recruit and employ a skilled, agile, diverse, and engaged workforce consisting of talented and experienced managers, professional and technical employees. The competition for talent has become increasingly intense and we may experience increased employee turnover due to a tight labor market. If we are unable to recruit and retain an appropriately qualified workforce, we could encounter operating challenges primarily due to a loss of institutional knowledge and expertise, errors due to inexperience, or the lengthy time period typically required to adequately train replacement personnel. In addition, higher costs could result from loss of productivity, increased safety compliance issues, or cost of contract labor. Additionally, approximately 18 percent of our employees are represented by collective-bargaining units under collective-bargaining agreements. Disputes over the agreements or failure to timely and effectively renegotiate new agreements upon their expiration could have a negative effect on our business, financial condition and results of operations or result in a work stoppage. Any future work stoppage could, depending on the breadth and the length of the work stoppage, have a material adverse effect on our financial condition, results of operations and cash flows.

The availability of adequate natural gas pipeline transportation and storage capacity and natural gas supply may decrease and impair our ability to meet customers' natural gas requirements and our financial condition may be adversely affected.

In order to meet customers' natural gas demands, we rely on and must obtain sufficient natural gas supplies, pipeline transportation and storage capacity from third parties. If we are unable to obtain these, our ability to meet our customers' natural gas requirements could be impaired. If a substantial disruption to or reduction in natural gas supply, pipeline capacity or storage capacity occurred due to operational failures or disruptions, legislative or regulatory actions, hurricanes, tornadoes, floods, earthquakes, extreme cold weather, acts of terrorism, or cyber-attacks or acts of war, our operations or financial results could be adversely affected.

Our business increasingly relies on technology, the failure of which may adversely affect our financial results and cash flows.

Due to technological advances, we have become more reliant on technology to effectively operate our business. We use computer programs and applications to help run our business, including an enterprise resource planning system that integrates data and reporting activities across our Company. Additionally, certain portions of our IT systems and infrastructure are provided or maintained by third-party vendors. The failure of these or other similarly important technologies, the lack of alternative technologies, or our inability to have these technologies supported, updated, expanded, or integrated into other technologies, could hinder our operations, and adversely impact our financial condition and results of operations.

The occurrence of cyber breaches or physical security attacks on our business, or those of third parties, may disrupt or adversely affect our operations or result in the loss or misuse of confidential and proprietary information.

Any cyber breaches or physical security attacks, or threats of such attacks, that affect our IT systems, distribution facilities, customers, suppliers and third-party service providers or any financial data could disrupt normal business operations, expose sensitive information, and/or lead to physical damages that may have a material adverse effect on our business. A severe attack or security breach could adversely affect our business reputation, diminish customer confidence, disrupt operations, subject us to financial liability or increased regulation, increase our costs and expose us to material legal claims and liability which may not be fully covered by insurance, and our business, financial condition, results of operations and cash flows could be adversely affected. As cyber or physical security attacks become more frequent and sophisticated, we could be required to incur increased costs to strengthen our systems or to obtain additional insurance coverage against potential losses. Federal and state regulatory agencies, such as DHS and TSA, are increasingly focused on risks related to physical security and cybersecurity in general and have promulgated more stringent security regulations specifically for certain federal contractors and critical infrastructure sectors, including natural gas distribution. Any failure to comply with such government regulations may have a material adverse effect on our results of operations and financial condition.

We are subject to various risks associated with climate change which could increase our operating costs or restrict our opportunities in new or existing markets, adversely affecting our financial results, growth, cash flows and results of operations.

Climate change may increase the likelihood of extreme weather in our service territory, and our customers' energy use could increase or decrease depending on the duration and magnitude of any changes. A decrease in energy use due to weather changes may affect our financial condition through decreased revenues and cash flows which are not adequately offset by our WNA mechanisms. Extreme weather conditions in general require increased system resiliency, adding to costs, and can contribute to increased system stresses, including service interruptions. Weather conditions outside of our operating territory could also have an impact on our revenues and cash flows by affecting natural gas prices and the availability of our leased transportation and storage capacity. Weather impacts our operations primarily through severe weather events, including hurricanes, thunderstorms, tornadoes, sustained extreme temperatures, snow and ice storms, earthquakes, floods, or other similar events beyond our control. To the extent the frequency of extreme weather events increases, our costs of providing service and our working capital requirements could increase.

REGULATORY AND LEGISLATIVE RISKS

We are subject to federal, state, and local regulation of the safety of our systems and operations, including pipeline safety, system integrity, and the safety of our employees and facilities that may require significant expenditures or, in the case of noncompliance, substantial fines or penalties.

We are subject to regulation under federal pipeline safety statutes promulgated by PHMSA, DOT, OSHA, and any analogous state regulations. These include safety requirements for the design, construction, operation, and maintenance of pipelines, including transmission and distribution pipelines. Additionally, the workplaces associated with our facilities are subject to the requirements of DOT and OSHA, and comparable state statutes that regulate the protection of the health and safety of workers. Compliance with existing or new laws and regulations may result in increased capital, operating and other costs which may not be recoverable in rates from our customers or may impact materially our competitive position relative to other energy providers. The failure to comply with these laws, regulations and other requirements, or an accident or injury to employees could expose us to civil or criminal liability, enforcement actions, fines, penalties, or injunctive measures that may not be recoverable through our rates and could have a material adverse effect on our business, financial condition, results of operations, cash flows, and reputation.

We are subject to federal, state, and local laws, rules and regulations that could impact our ability to earn a reasonable rate of return on our invested capital and to fully recover our invested capital, operating costs, and natural gas costs.

We are subject to regulatory oversight from various federal, state, and local regulatory authorities, including the OCC, KCC, RRC and various municipalities in Texas. Regulatory actions from these authorities relate to allowed rates of return, rate design and construct, and purchased gas and operating cost recovery. Therefore, our returns are continuously monitored and are subject to challenge for their reasonableness by regulatory authorities or third-party intervenors. Our ability to obtain timely future rate increases depends on regulatory discretion and therefore, there can be no assurance that we will be able to obtain rate increases, fully recover our costs or that our authorized rates of return will continue at the current levels, which could adversely impact our results of operations, financial condition, and cash flows.

In the normal course of business, assets are placed in service before regulatory action is taken, such as filing a rate case or seeking interim recovery under a capital tracking mechanism that could result in an adjustment of our returns. Once we make a regulatory filing, regulatory bodies have the authority to suspend implementation of the new rates while evaluating the filing. Because of this process, we may suffer the negative financial effects of having placed assets in service that do not initially earn our authorized rate of return or may not be allowed recovery on such expenditures at all.

We are subject to environmental regulations and legislation, including those intended to address climate change, which could increase our operating costs, adversely affecting our financial results, growth, cash flows and results of operations.

We are subject to laws, regulations and other legal requirements enacted or adopted by federal, state and local governmental authorities, including the EPA and any analogous state agencies, relating to protection of the environment, including those that govern discharges of substances into the air and water, the management and disposal of hazardous substances and waste, the clean-up of contaminated sites, groundwater quality and availability, plant and wildlife protection, as well as work practices related to employee health and safety. Environmental legislation also requires that our facilities, sites, and other properties associated with our operations be operated, maintained, abandoned, and reclaimed to the satisfaction of applicable regulatory authorities. The failure to comply with any laws, regulations, permits and other requirements, or the discovery of presently unknown environmental conditions, could expose us to civil or criminal liability, enforcement actions and regulatory fines and penalties and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

International, federal, regional and/or state legislative and/or regulatory initiatives may attempt to regulate greenhouse gas emissions, including carbon dioxide and methane, as a response to the threat of climate change. Various states and municipalities have adopted or are considering adopting legislation, regulations or other regulatory initiatives that are focused on areas such as greenhouse gas cap and trade programs, carbon taxes, reporting and tracking programs, and restrictions on emissions. Such laws or regulations could impose costs tied to carbon emissions, operational requirements or restrictions, or additional charges to fund energy efficiency activities. They could also incentivize alternative energy sources, impose costs or restrictions on end users of natural gas, or result in other costs or requirements, such as costs associated with the adoption of new infrastructure and technology to respond to new mandates.

We are subject to federal, state, and local laws, rules and regulations that could affect our operations and financial results.

Our business and operations are subject to regulation by a number of federal agencies, including FERC, CFTC, IRS and various state agencies in Oklahoma, Kansas, and Texas, and we are subject to numerous other federal and state laws and regulations. Future changes to laws, regulations and policies may impair our ability to compete for business or recover costs and could adversely affect our cash flows, restrict our ability to make capital investments and may cause us to increase debt and take other actions to conserve cash. Any compliance failure related to these laws and regulations may result in fines, penalties or injunctive measures affecting our operating assets. The fines or penalties for noncompliance with laws and regulations may not be recoverable through our rates. Our failure to comply with applicable regulations could result in a material adverse effect on our business, financial condition, results of operations and cash flows.

FINANCIAL, ECONOMIC AND MARKET RISKS

Unfavorable economic and market conditions could adversely affect our financial condition, earnings, cash flows and limit our future growth.

Weakening economic activity in our markets and supply chain disruptions could result in a loss of existing customers, fewer new customers, especially in newly constructed homes and other buildings, or a decline in energy consumption, any of which could adversely affect our revenues or restrict our future growth. These conditions may make it more difficult for customers to pay their natural gas bills, leading to slow collections and higher-than-normal levels of accounts receivable, which in turn could increase our financing requirements and bad debt expense. Customers may also experience difficulties paying their natural gas bills in the instance of severe weather events that result in higher usage and higher natural gas prices, reducing our collections and increasing our financing requirements and bad debt expense, which could have a material adverse effect on our business, contracts, financial condition, operating results, cash flow, liquidity, and prospects.

Changes in supply and demand within the natural gas markets, as well as other factors, could cause an increase in the price of natural gas. Market conditions can also lead to short-term price spikes in natural gas prices, such as high demand during periods of extreme cold weather or system constraints at specific delivery locations. An increase in the price of natural gas could cause us to experience a significant increase in short-term or long-term debt because we must pay suppliers for natural gas when purchased.

We cannot predict the timing, severity, or duration of any future economic slowdowns or natural gas market disruptions. Fluctuations and uncertainties in the economy may result in higher interest rates and inflationary pressures on the costs of goods, services, and labor. This could increase our expenses and capital spending and decrease our cash flows if we are not able to recover or recover timely such increased costs from our customers. The foregoing could adversely affect our business, financial condition, results of operations and cash flows.

Our business activities are concentrated in three states.

We provide natural gas distribution services to customers in Oklahoma, Kansas, and Texas. Changes in the regional economies, politics, regulations, regulatory decisions by state and local regulatory authorities, and weather patterns of these states could adversely impact our financial condition, results of operations and cash flows.

The inability to access capital or significant increases in the cost of capital could adversely affect our results of operations, cash flows and financial condition.

Our ability to obtain adequate and cost-effective financing is dependent upon the liquidity of the financial markets, as well as our financial condition and credit ratings. Our long-term debt is currently rated as "investment grade" by both of our rating agencies. We rely upon access to both the short-term and long-term credit and capital markets to satisfy our liquidity requirements. If adverse credit conditions or a downgrade in our ratings outlook were to cause a significant limitation on our access to the private credit and public capital markets, we could see a reduction in our liquidity. A significant reduction in our liquidity could in turn trigger a negative change in our ratings outlook or a reduction in our credit ratings by one or both of our rating agencies. Such a downgrade could further limit our access to private credit and/or public capital markets and increase our costs of borrowing. Additionally, the inability to access adequate capital or an increase in the cost of capital may require us to conserve cash, prevent or delay us from making capital expenditures, and require us to reduce or eliminate our dividend or other discretionary uses of cash.

Our financing arrangements subject us to various restrictions that could limit our operating flexibility, earnings, and cash flows.

The indentures governing our Senior Notes and our ONE Gas Credit Agreement contain customary covenants that restrict our ability to create or permit certain liens, to consolidate or merge, or to convey, transfer or lease substantially all of our properties and assets. Events beyond our control could impair our ability to satisfy these requirements. As long as our indebtedness remains outstanding, these restrictive covenants could impair our ability to expand or pursue our growth strategy.

In addition, the breach of any covenants or any payment obligations in any of these debt agreements will result in an event of default under the applicable debt instrument. If an event of default were to occur, the holders of the defaulted debt may have the ability to cause all amounts outstanding with respect to that debt to be due and payable, subject to applicable grace periods. This could trigger cross-defaults under our other debt agreements, including our Senior Notes. Forced repayment of some or all of our indebtedness could require us to incur new debt at a higher cost, which would have an adverse impact on our financial condition, results of operations and cash flows.

We may pursue acquisitions, divestitures, and other strategic opportunities which, if not successful, may adversely impact our results of operations, cash flows and financial condition.

As part of our strategic objectives, we may pursue acquisitions to complement or expand our business, as well as divestitures and other strategic opportunities. We may not be able to successfully negotiate, finance or receive regulatory approval for future acquisitions or integrate the acquired businesses with our existing business and services. These efforts may also distract our management and employees from day-to-day operations and require substantial commitments of time and resources. Future acquisitions could result in potentially dilutive issuances of equity securities, a decrease in our liquidity as a result of our using a significant portion of our available cash or borrowing capacity to finance the acquisition, the incurrence of debt, contingent liabilities and amortization expenses and substantial goodwill. The effects of these strategic decisions may have long-term implications that are not likely to be known to us in the short-term. We may be materially and adversely affected if we are unable to successfully integrate businesses that we acquire.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 1C. CYBERSECURITY

We commit significant resources to protecting and continuing to improve the security of our computer systems, software, networks, and other information or operations technology assets. Our cybersecurity efforts are designed to preserve the confidentiality, integrity, and continued availability of all information owned by, or in the care of, the Company and protect against, among other things, cybersecurity attacks by unauthorized parties attempting to obtain access to confidential information, destroy data, disrupt or degrade service, sabotage systems, or otherwise cause damage.

Governance

Our Board of Directors considers cybersecurity risk one of the significant risks to our business. As such, the Board of Directors has retained responsibility for overseeing policies and procedures related to cybersecurity and data privacy matters. The Board of Directors routinely evaluates our cybersecurity strategy to review its effectiveness. Management provides reports to the Board of Directors at least quarterly regarding cybersecurity and other information and operations technology risks.

The Company established a governance committee to provide governance and oversight of security and compliance related activities for security and IT in support of their effective and efficient management of risks, strategies, and operational imperatives for the Company. The committee is chaired by our Chief Information Officer and the membership includes a cross-functional team of executives from IT/cybersecurity, operations, customer service, commercial, risk and insurance, finance, and the legal department. The committee is structured to cultivate collaboration across the enterprise and to align and prioritize resources with our strategic plan.

Risk Management and Strategy

The cybersecurity function is centralized under the Senior Vice President and Chief Information Officer, who has over three decades of experience in information technology. The cybersecurity function is comprised of a dedicated team of professionals who work continuously to monitor risks relating to cybersecurity resilience strategy, policy, standards, architecture, and

DCF MODEL -- DIVIDEND YIELD

Company	Ticker	Expected Dividend (a)	Price (b)	Dividend Yield (c)
Atmos Energy	ATO	$ 3.34	$ 113.23	2.95%
Chesapeake Utilities	CPK	$ 2.48	$ 102.29	2.42%
New Jersey Resources	NJR	$ 1.68	$ 41.50	4.05%
NiSource	NI	$ 1.03	$ 25.64	4.02%
Northwest Natural Gas	NWN	$ 1.95	$ 37.10	5.26%
ONE Gas	OGS	$ 2.65	$ 60.41	4.39%
Spire	SR	$ 3.06	$ 58.71	5.21%
AVERAGE				**4.04%**
MEDIAN				**4.05%**

(a) *The Value Line Investment Survey* "Summary & Index" (February 23, 2024).
(b) *Yahoo!* Finance (average of daily closing prices January 16 - February 16, 2024).
(c) Expected Dividend / Price.

DCF MODEL -- EARNINGS GROWTH RATES

	Projected Growth				Historical Growth	
	Value	I/B/E/S				
Company	**Line (a)**	**LSEG (b)**	**Yahoo (c)**	**Zacks (d)**	**10-Year (a)**	**5-Year (a)**
Atmos Energy	7.0%	7.5%	7.50%	7.3%	9.5%	9.0%
Chesapeake Utilities	5.0%	7.0%	7.20%	N/R	9.0%	10.0%
New Jersey Resources	5.0%	N/R	6.00%	6.0%	5.0%	2.5%
NiSource	9.5%	N/R	8.30%	7.2%	1.5%	15.0%
Northwest Natural Gas	6.5%	N/R	2.80%	3.7%	-1.0%	2.5%
ONE Gas	4.0%	N/R	5.00%	5.0%	N/R	6.0%
Spire	4.5%	6.4%	6.36%	5.6%	5.0%	3.0%
AVERAGE	**5.9%**	**7.0%**	**6.2%**	**5.8%**	**4.8%**	**6.9%**
MEDIAN	**5.0%**	**7.0%**	**6.4%**	**5.8%**	**5.0%**	**6.0%**

(a) *The Value Line Investment Survey* "Ratings & Reports" (February 23, 2024).
(b) LSEG Stock Reports Plus (February 16, 2024).
(c) *Yahoo!* Finance (Retrieved February 19, 2024).
(d) Zacks.com "Comparison to Industry" (Retrieved February 19, 2024).

N/R -- None reported.

DCF MODEL -- SUSTAINABLE GROWTH RATES

		2027-2029 Projected (a)				Shares Outstanding (a)		Earnings Retention Growth			External Financing Growth					
Company	Ticke	Earnings per Share	Dividends per Share	Book Value per Share	Price per Share	2023	Proj. 27-29	Retention Ratio	Return on Equity	"b x r"	2027-2029 Market-to-Book Ratio	Growth Rate in Shares	"s"	"v"	"s x v"	Sustainable Growth
Atmos Energy		$ 8.35	$ 4.25	$ 83.50	$ 137.50	148.49	175.00	49.1%	10.0%	4.9%	1.65	3.3%	5.5%	39.3%	2.2%	7.1%
Chesapeake Utilities		$ 6.50	$ 3.20	$ 66.40	$ 130.00	18.50	23.50	50.8%	9.8%	5.0%	1.96	4.9%	9.6%	48.9%	4.7%	9.7%
New Jersey Resources		$ 3.50	$ 1.95	$ 27.00	$ 60.00	97.57	100.00	44.3%	13.0%	5.7%	2.22	0.5%	1.1%	55.0%	0.6%	6.3%
NiSource		$ 2.10	$ 1.20	$ 18.75	$ 40.00	415.00	450.00	42.9%	11.2%	4.8%	2.13	1.6%	3.5%	53.1%	1.9%	6.7%
Northwest Natural Gas		$ 3.25	$ 1.98	$ 38.70	$ 65.00	37.00	42.00	39.1%	8.4%	3.3%	1.68	2.6%	4.3%	40.5%	1.7%	5.0%
ONE Gas		$ 5.00	$ 2.85	$ 60.20	$ 90.00	55.50	57.00	43.0%	8.3%	3.6%	1.50	0.5%	0.8%	33.1%	0.3%	3.8%
Spire		$ 5.50	$ 3.60	$ 66.05	$ 87.50	53.20	62.00	34.5%	8.3%	2.9%	1.32	3.1%	4.1%	24.5%	1.0%	3.9%
AVERAGE										**4.3%**					**1.8%**	**6.1%**
MEDIAN										**4.8%**					**1.7%**	**6.3%**

(a) *The Value Line Investment Survey* "Ratings & Reports" (February 23, 2024).

DCF MODEL -- OTHER PROJECTED AND HISTORICAL GROWTH RATES

	Net Book Value (a)			Dividends per Share (a)			Price per Share		
	Pro-	Historical		Pro-	Historical		Pro-	Historical (b)	
Company	jected	10-Year	5-Year	jected	10-Year	5-Year	jected (a)	10-Year	5-Year
Atmos Energy	4.0%	9.5%	12.0%	7.5%	7.0%	8.5%	5.0%	9.3%	3.4%
Chesapeake Utilities	6.0%	9.5%	9.0%	8.5%	7.0%	8.5%	6.2%	10.1%	3.1%
New Jersey Resources	4.5%	7.5%	7.0%	5.0%	6.5%	6.5%	9.7%	6.2%	-2.4%
NiSource	5.0%	-3.0%	0.5%	4.5%	-0.5%	3.5%	11.8%	6.7%	-0.7%
Northwest Natural Gas	4.0%	1.0%	0.5%	0.5%	1.5%	0.5%	15.1%	-1.1%	-9.6%
ONE Gas	4.5%	N/R	4.0%	3.0%	N/R	8.0%	10.5%	N/R	-5.9%
Spire	5.5%	5.5%	3.5%	4.5%	5.0%	5.5%	10.5%	2.7%	-5.3%
AVERAGE	**4.8%**	**5.0%**	**5.2%**	**4.8%**	**4.4%**	**5.9%**	**9.8%**	**5.7%**	**-2.5%**
MEDIAN	**4.5%**	**6.5%**	**4.0%**	**4.5%**	**5.8%**	**6.5%**	**10.5%**	**6.5%**	**-2.4%**

(a) *The Value Line Investment Survey* "Ratings & Reports" (February 23, 2024).
(b) *Yahoo!* Finance (Average mid-January to mid-February 2014 and 2019 closing prices to average mid-January to mid-February 2024 closing price).

N/R -- None reported.

CAPITAL ASSET PRICING MODEL

Description	Historical Rates of Return (a)	Forward-Looking Rates of Return (b)
Market Required Rate of Return	12.04%	11.95%
Long-term Government Bond Return (a)(c)	4.87%	4.26%
Market Risk Premium (d)	7.17%	7.69%
LDC Group Beta (e)	0.86	0.86
LDC Group Risk Premium (f)	6.20%	6.65%
Risk-free Rate of Interest (c)	4.26%	4.26%
Theoretical CAPM Cost of Equity Estimate (g)	10.46%	10.91%
Size Premium (e)	0.93%	0.93%
CAPM Cost of Equity Estimates (h)	**11.39%**	**11.84%**

(a) *Kroll Cost of Capital Navigator*.
(b) Calculated by applying DCF model applied to S&P 500 firms paying dividends (February 15, 2024):

Expected Dividend Yield		1.85%
Projected Earnings Growth Rate:		
Value Line	9.33%	
I/B/E/S	10.41%	
Zacks	10.55%	
Average		10.10%
Market Required Rate of Return		11.95%

(c) January 2024 yield on 30-year U.S. Treasury bonds (Federal Reserve). 4.26%
(d) Market Required Rate of Return minus Long-term Government Bond Return.
(e) Schedule BHF-6.
(f) Market risk premium times beta.
(g) Sum of Risk Premium and Risk-free Rate of Interest.
(h) Sum of Theoretical CAPM Cost of Equity Estimate and Size Premium.

BOND RATINGS, BETA, MARKET CAPITALIZATION, AND SIZE PREMIUMS

Risk Measures

Company	Bond Rating S&P (a)	Bond Rating Moody's (b)	Beta (c)	Market Capitalization (c) (millions)	Premium(d)
Atmos Energy	A-	A1	0.85	$ 17,200	0.46%
Chesapeake Utilities	N/R	N/R	0.80	$ 1,900	1.21%
New Jersey Resources	N/R	A1	0.95	$ 4,100	0.95%
NiSource	BBB+	Baa2	0.90	$ 10,600	0.61%
Northwest Natural Gas	A+	Baa1	0.85	$ 1,300	1.39%
ONE Gas	A-	A3	0.85	$ 3,500	0.95%
Spire	A-	Baa2	0.85	$ 3,300	0.95%
LDC GROUP AVERAGE	**A-**	**A3**	**0.86**	**$ 5,986**	**0.93%**

CRSP Deciles Size Premiums (e)

Decile	Market Capitalization of Smallest Company (in millions)		Market Capitalization of Largest Company (in millions)	Size Premium (Return in Excess of CAPM)
1-Largest	$ 36,942.976	-	$ 2,662,326.048	-0.06%
2	14,910.719	-	36,391.113	0.46%
3	7,493.607	-	14,820.048	0.61%
4	4,622.261	-	7,461.284	0.64%
5	3,011.224	-	4,621.785	0.95%
6	1,864.293	-	3,010.806	1.21%
7	1,050.083	-	1,862.491	1.39%
8	555.880	-	1,046.037	1.14%
9	213.039	-	554.523	1.99%
10- Smallest	1.576	-	212.644	4.70%

(a) Moody's.com (Retreived February 19, 2024).
(b) StandardandPoors.com (Retrieved February 19, 2024).
(c) *The Value Line Investment Survey* "Ratings & Reports" (February 23, 2024).
(d) Kroll Cost of Capital Navigator (Retrieved February 19, 2024).

RISK PREMIUM METHOD

Year	Qtr.		Allowed ROE (a)	Average Utility Bond Yield (b)	Risk Premium
1980	1		13.45%	13.31%	0.14%
	2		14.38%	12.51%	1.87%
	3		13.87%	12.74%	1.13%
	4		14.35%	14.03%	0.32%
1981	1		14.69%	14.64%	0.05%
	2		14.61%	15.48%	-0.87%
	3		14.86%	16.36%	-1.50%
	4		15.70%	16.01%	-0.31%
1982	1		15.55%	16.51%	-0.96%
	2		15.62%	15.87%	-0.25%
	3		15.72%	15.27%	0.45%
	4		15.62%	13.67%	1.95%
1983	1		15.41%	13.45%	1.96%
	2		14.84%	13.07%	1.77%
	3		15.24%	13.38%	1.86%
	4		15.41%	13.33%	2.08%
1984	1		15.39%	13.64%	1.75%
	2		15.07%	14.80%	0.27%
	3		15.37%	14.42%	0.95%
	4		15.33%	13.26%	2.07%
1985	1		15.03%	13.18%	1.85%
	2		15.44%	12.74%	2.70%
	3		14.64%	11.92%	2.72%
	4		14.44%	11.33%	3.11%
1986	1		14.05%	10.05%	4.00%
	2		13.28%	9.35%	3.93%
	3		13.09%	9.25%	3.84%
	4		13.62%	9.17%	4.45%
1987	1		12.61%	8.78%	3.83%
	2		13.13%	9.66%	3.47%
	3		12.56%	10.45%	2.11%
	4		12.73%	11.04%	1.69%
1988	1		12.94%	10.50%	2.44%
	2		12.48%	10.66%	1.82%
	3		12.79%	10.87%	1.92%
	4		12.98%	9.94%	3.04%
1989	1		12.99%	10.07%	2.92%
	2		13.25%	9.85%	3.40%
	3		12.56%	9.38%	3.18%
	4		12.94%	9.34%	3.60%
1990	1		12.60%	9.62%	2.98%
	2		12.81%	9.82%	2.99%
	3		12.34%	9.84%	2.50%
	4		12.77%	9.76%	3.01%
1991	1		12.69%	9.42%	3.27%
	2		12.53%	9.34%	3.19%
	3		12.43%	9.20%	3.23%
	4		12.38%	8.89%	3.49%
1992	1		12.42%	8.76%	3.66%
	2		11.98%	8.72%	3.26%
	3		11.87%	8.37%	3.50%
	4		11.94%	8.44%	3.50%
1993	1		11.75%	8.03%	3.72%
	2		11.71%	7.74%	3.97%
	3		11.39%	7.25%	4.14%
	4		11.15%	7.21%	3.94%
1994	1		11.12%	7.53%	3.59%
	2		10.81%	8.28%	2.53%
	3		10.95%	8.51%	2.44%
	4	(c)	11.64%	8.89%	2.75%
1995	2		11.00%	7.95%	3.05%
	3		11.07%	7.74%	3.33%
	4		11.56%	7.36%	4.20%
1996	1		11.45%	7.43%	4.02%
	2		10.88%	7.98%	2.90%
	3		11.25%	7.96%	3.29%
	4		11.32%	7.61%	3.71%
1997	1		11.31%	7.80%	3.51%
	2		11.70%	7.93%	3.77%
	3		12.00%	7.53%	4.47%
	4	(c)	11.01%	7.26%	3.75%
1998	2		11.37%	7.07%	4.30%
	3		11.41%	6.94%	4.47%
	4		11.69%	6.89%	4.80%
1999	1		10.82%	7.02%	3.80%
	2	(c)	10.82%	7.43%	3.39%
	4		10.33%	7.97%	2.36%
2000	1		10.71%	8.15%	2.56%
	2		11.08%	8.30%	2.78%
	3		11.33%	7.95%	3.38%
	4		12.50%	7.97%	4.53%
2001	1		11.16%	7.68%	3.48%
	2	(c)	10.75%	7.81%	2.94%
	4		10.65%	7.70%	2.95%
2002	1		10.67%	7.71%	2.96%
	2		11.64%	7.72%	3.92%
2002	3		11.50%	7.37%	4.13%
	4		10.78%	7.31%	3.47%
2003	1		11.38%	6.95%	4.43%
	2		11.36%	6.41%	4.95%
	3		10.61%	6.64%	3.97%
	4		10.84%	6.43%	4.41%
2004	1		11.10%	6.14%	4.96%
	2		10.25%	6.53%	3.72%
	3		10.37%	6.18%	4.19%
	4		10.66%	5.95%	4.71%
2005	1		10.65%	5.77%	4.88%
	2		10.52%	5.57%	4.95%
	3		10.47%	5.51%	4.96%
	4		10.40%	5.83%	4.57%
2006	1		10.63%	5.88%	4.75%
	2		10.50%	6.35%	4.15%
	3		10.45%	6.20%	4.25%
	4		10.14%	5.89%	4.25%
2007	1		10.44%	5.92%	4.52%
	2		10.12%	6.13%	3.99%
	3		10.03%	6.27%	3.76%
	4		10.27%	6.15%	4.12%
2008	1		10.38%	6.22%	4.16%
	2		10.17%	6.41%	3.76%
	3		10.49%	6.52%	3.97%
	4		10.34%	7.46%	2.88%
2009	1		10.24%	6.78%	3.46%
	2		10.11%	6.76%	3.35%
	3		9.88%	5.86%	4.02%
	4		10.27%	5.74%	4.53%
2010	1		10.24%	5.89%	4.35%
	2		9.99%	5.73%	4.26%
	3		9.93%	5.20%	4.73%
	4		10.09%	5.43%	4.66%
2011	1		10.10%	5.66%	4.44%
	2		9.85%	5.44%	4.41%
	3		9.65%	4.91%	4.74%
	4		9.88%	4.50%	5.38%
2012	1		9.63%	4.51%	5.12%
	2		9.83%	4.39%	5.44%
	3		9.75%	4.16%	5.59%
	4		10.07%	4.04%	6.03%
2013	1		9.57%	4.27%	5.30%
	2		9.47%	4.32%	5.15%
	3		9.60%	4.84%	4.76%
	4		9.83%	4.84%	4.99%
2014	1		9.54%	4.67%	4.87%
	2		9.84%	4.44%	5.40%
	3		9.45%	4.35%	5.10%
	4		10.28%	4.24%	6.04%
2015	1		9.47%	3.90%	5.57%
	2		9.43%	4.31%	5.12%
	3		9.75%	4.62%	5.13%
	4		9.68%	4.68%	5.00%
2016	1		9.48%	4.49%	4.99%
	2		9.42%	4.05%	5.37%
	3		9.47%	3.74%	5.73%
	4		9.60%	4.17%	5.43%
2017	1		9.60%	4.26%	5.34%
	2		9.47%	4.13%	5.34%
	3		10.14%	3.97%	6.17%
	4		9.68%	3.90%	5.78%
2018	1		9.68%	4.09%	5.59%
	2		9.43%	4.32%	5.11%
	3		9.69%	4.36%	5.33%
	4		9.53%	4.57%	4.96%
2019	1		9.55%	4.37%	5.18%
	2		9.73%	4.07%	5.66%
	3		9.80%	3.53%	6.27%
	4		9.73%	3.46%	6.27%
2020	1		9.35%	3.36%	5.99%
	2		9.55%	3.21%	6.34%
	3		9.52%	2.80%	6.72%
	4		9.50%	2.89%	6.61%
2021	1		9.71%	3.18%	6.53%
	2		9.48%	3.29%	6.19%
	3		9.43%	2.99%	6.44%
	4		9.59%	3.09%	6.50%
2022	1		9.38%	3.65%	5.73%
	2		9.23%	4.68%	4.55%
	3		9.52%	4.99%	4.53%
	4		9.65%	5.66%	3.99%
2023	1		9.75%	5.33%	4.42%
	2		9.45%	5.37%	4.08%
	3		9.66%	5.72%	3.94%
	4		9.63%	5.97%	3.66%
Average			**11.37%**	**7.56%**	**3.81%**

Unadusted:

Risk Premium = Intercept + (Slope X Interest Rate) (d)

RP	=	0.07278	+	-0.45825	X	5.51%
RP	=	0.07278	+	-0.02525		
RP	**=**	**4.75%**				

Adjusted (Using Iterative Prais-Winsten algorithm):

Risk Premium = Intercept + (Slope X Interest Rate) (d)

RP	=	0.07800	+	-0.53060	X	5.51%
RP	=	0.07800	+	-0.02924		
RP	**=**	**4.88%**				

(a) S&P Global Market Intelligence (various dates and data bases), Regulatory Research Associates (January 16, 1990), and Argus UtilityScope Regulatory Service (January 1986).
(b) Mergent Public Utility Manual (2003); Mergent Bond Record (September 2005); Moody's Credit Perspectives (Various Editions).
(c) No decisions reported for following quarter.
(d) Moody's Investor Services average utility bond yield for January 2024.

COMPARABLE EARNINGS METHOD

	Projected Earned Return on Book Equity (a)		
Company	**2024**	**2025**	**2027-29**
Atmos Energy	8.8%	9.1%	10.0%
Chesapeake Utilities	9.9%	9.7%	9.8%
New Jersey Resources	13.1%	12.6%	13.0%
NiSource	8.6%	9.1%	11.2%
Northwest Natural Gas	7.7%	7.5%	8.4%
Spire	7.8%	7.8%	8.3%
LDC GROUP AVERAGE	**9.3%**	**9.3%**	**10.1%**
MEDIAN	**8.7%**	**9.1%**	**9.9%**

(a) *The Value Line Investment Survey* "Ratings & Reports" (February 23, 2024).