BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

IN THE MATTER OF THE APPLICATION	**)**	
OF ATMOS ENERGY CORPORATION	**)**	**Docket No.** 23-ATMG-359-RTS
FOR REVIEW AND ADJUSTMENT OF ITS	**)**	**22-ATMG-____-RTS**
NATURAL GAS RATES	**)**	

DIRECT TESTIMONY OF MATTHEW R. HOWARD

SEPTEMBER 9, 2022

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND AFFILIATION.

A. My name is Matthew R. Howard. I am a Manager at ScottMadden, Inc. My business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts 01581.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. I am submitting this direct testimony ("Direct Testimony") on behalf of Atmos Energy Corporation's Kansas operations ("Atmos Energy" or the "Company")[1] before the Kansas Corporation Commission (the "KCC" or the "Commission").

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EDUCATIONAL BACKGROUND.

A. I offer expert testimony on behalf of investor-owned utilities on rate of return issues, including return on equity ("ROE"),[2] capital structure, and cost of debt. I have also authored and co-authored several fair market valuation reports on behalf of municipalities and investor-owned utilities. On behalf of the American Gas Association ("AGA"), I assist in the calculation of the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured on a monthly basis. The AGA Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the AGA.

[1] For clarification purposes, when I refer to "Atmos Energy Corporation", it refers to the entirety of Atmos Energy Corporation, which operates in eight states. When I refer to "Atmos Energy", it only refers to Atmos Energy Corporation's Kansas operations.

[2] Also referred to throughout this testimony as Cost of Equity.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In May 2022, I was awarded the professional designation "Certified Rate of Return Analyst" by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I hold a Bachelor's degree in Psychology from the University of Colorado at Boulder, and received a Master of Business Administration degree from Babson College, with honors, and a concentration in Finance.

My educational background and regulatory experience are attached as Appendix A.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose is to provide testimony on behalf of Atmos Energy regarding the appropriate weighted average cost of capital ("WACC") on its Kansas jurisdictional rate base.

Q. HAVE YOU PREPARED EXHIBITS WHICH SUPPORT YOUR RECOMMENDED COST OF COMMON EQUITY?

A. Yes. I have prepared Exhibits MRH-1 through MRH-7.

III. SUMMARY

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION WITH RESPECT TO THE OVERALL RATE OF RETURN FOR ATMOS ENERGY.

A. I recommend that the Commission authorize Atmos Energy the opportunity to earn an overall rate of return of 8.18 percent based on its actual capital structure for the period ending March 31, 2022 of 38.86 percent long-term debt and 61.14 percent

common equity. The overall rate of return is summarized on page 1 of Exhibit MRH-1 and in Table 1 below:

Table 1: Summary of Overall Rate of Return

Description	Percent Total Capital	Cost Rate	Weighted Cost Rate
Long-Term Debt	38.86%	3.84%	1.49%
Common Equity	61.14%	10.95%	6.69%
Total	100.00%		8.18%

Q. PLEASE SUMMARIZE THE DETERMINATION OF THE RECOMMENDED COST OF EQUITY FOR ATMOS ENERGY.

A. The determination of the recommended Cost of Equity for Atmos Energy is guided in part by the regulatory principles established in *Bluefield Waterworks & Imp. Co. v. Public Service Commission of W. Va.*, 262 U.S. 679 (1923) ("*Bluefield*")[3] and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*").[4] As discussed more in depth below, *Bluefield* and *Hope* establish the standard, among others, that a utility's returns should provide it the opportunity to earn a return similar to enterprises of comparable risk.

The comparable risk standard is congruent with the financial principle of risk and return. Because Atmos Energy's Kansas gas utility operations are not a separately publicly-traded enterprise, it is necessary to look to the market data of a proxy group of publicly-traded companies comparable in risk to Atmos Energy's Kansas gas utility operations (the "Utility Proxy Group") in determining the

[3] *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1923).
[4] *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

appropriate ROE.. However, the Utility Proxy Group is not identical to Atmos Energy. Therefore, it is necessary to then reflect any Company-specific risks not captured by the Utility Proxy Group.

Q. HOW HAVE YOU APPLIED THE APPROACH DESCRIBED ABOVE IN ARRIVING AT YOUR RECOMMENDED COST OF EQUITY FOR ATMOS ENERGY?

A. In arriving at my recommended Cost of Equity for Atmos Energy of 10.95 percent, I applied multiple economic models (as discussed below) to the market data of the Utility Proxy Group as summarized in Table 2 below:

Table 2: Summary of ROE Results[5]

	Mean	Median
Discounted Cash Flow	9.72%	9.72%
Midpoint	9.72%	
Capital Asset Pricing Model	12.09%	11.99%
Midpoint	12.04%	
Risk Premium Model	10.52%	
Recommended Range Prior to the Application of a Size Premium	9.75% - 12.05%	
Size Premium	0.20%	
Credit Risk Adjustment	-.0.07%	
Flotation Cost Adjustment	0.05%	
Recommended Range Applicable to Atmos Energy	9.90% - 12.20%	
Recommended Return on Equity	**10.95%**	

Based on the model results, I determined the appropriate ROE for the Utility Proxy Group to be in the range of 9.75 percent to 12.05 percent, prior to any Company-specific adjustments. I then applied a size premium of 0.20 percent and

[5] Exhibit MRH-1, page 2.

a credit risk adjustment of -0.07 percent, which account for Atmos Energy's smaller size and less risky credit rating, respectively, relative to the Utility Proxy Group, as well as a flotation cost adjustment of 0.05 percent, resulting in a recommended ROE range applicable to Atmos Energy of 9.90 percent to 12.20 percent. Within that range, I recommend an ROE for Atmos Energy of 10.95 percent.

As shown in Table 2 above, in determining the range of model results, I relied on the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), and the Risk Premium Model ("RPM").

My recommended ROE reflects two important considerations: (1) it is impossible to know with absolute certainty which methods or approaches, and their subsequent results, best reflect market and economic conditions at any one point in time; and (2) each result reflects a return required currently by the market, regardless of where it falls on the distribution of required returns. That said, it is necessary to carefully consider where on the distribution the results fall. Doing so mitigates the potential of misrepresenting investor required returns due to the assignment of undue weight on a result, or results, that fall at the higher-or-lower ends of the distribution. At the same time, those same results cannot be dismissed outright. My recommended ROE therefore appropriately balances the range of results with the need to apply careful judgment in assessing those results.

IV. GENERAL PRINCIPLES

Q. WHAT REGULATORY PRINCIPLES GUIDE THE DETERMINATION OF AN ROE TO BE INCLUDED IN THE FAIR RATE OF RETURN?

A. As established in *Bluefield* and *Hope,* the fair Rate of Return, including the Cost of Equity, should provide the utility the opportunity to earn returns comparable to other investments with similar risk, at a level sufficient to assure investors that the enterprise will maintain its financial integrity. Because utilities compete for capital with other firms of comparable risk, the return authorized by the regulatory process should provide the utility with the ability to attract capital at a reasonable cost. In addition, the return should enable the utility to fulfill its obligations to the public of providing safe and reliable service at all times. Specifically, in *Hope*, the Supreme Court noted:

> The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure [sic] that the business shall produce net revenues.' 315 U.S. at page 590, 62 S.Ct. at page 745. But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. Cf. Chicago & Grand Trunk R. Co. v. Wellman, 143 U.S. 339, 345, 346 12 S.Ct. 400, 402. **By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital**.[6]

[6] *Hope*, 320 U.S. 591 (1944), at 603 (Emphasis added).

Q. PLEASE COMMENT ON THE FORWARD-LOOKING NATURE OF RATE-MAKING AND THE COST OF CAPITAL IN GENERAL.

A. Rates set in this proceeding for Atmos Energy will be implemented on a going-forward basis, as rates are designed to recover costs that will be incurred in the future. The Cost of Capital is also forward-looking, as the return (i.e., cost) required by investors is reflective of the risks an investment may face in the future.

Q. PLEASE COMMENT ON THE USE OF MULTIPLE ANALYTICAL MODELS IN DETERMINING THE APPROPRIATE RETURN ON EQUITY APPLICABLE TO ATMOS ENERGY.

A. Unlike the costs of debt or preferred stock, which are generally contractually defined, the Cost of Equity is not directly observable in the market. Therefore, analysts must look to multiple financial and economic models using market data to estimate the investor required ROE. Further, no model is perfect, and all models have strengths and weaknesses. Generally, however, it is difficult to determine which model/models best reflect investor sentiment at any one time, but the use of multiple models provides an assessment of current market and economic conditions that is necessary to overcome the shortcomings of any one model.

The use of multiple models is also well supported in financial literature, as is the need to exercise judgment in assessing those models and their results. For example, Morin[7] states:

[7] Dr. Roger A. Morin is Emeritus Professor of Finance at the College of Business Administration, Georgia State University, and Distinguished Professor of Finance for Regulated Industry at the Center for the Study of Regulated Industry at Georgia State University. Dr. Morin has published four widely-used treatises on regulatory finance: Utilities' Cost of Capital, Regulatory Finance, New Regulatory Finance, and more recently, Modern Regulatory Finance. Dr. Morin is a leading expert witness in matters of corporate finance, and has appeared as an expert witness in some 200 cases

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use.
>
> No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data.[8]

Based on the above, the use of multiple analytical models, as well as the application of careful judgment, should be used in determining the appropriate ROE for Atmos Energy.

V. PROXY GROUP SELECTION

Q. PLEASE DESCRIBE ATMOS ENERGY'S KANSAS OPERATIONS.

A. Atmos Energy serves approximately 140,000 Kansas customers.[9] Atmos Energy's Kansas natural gas utility operations is not publicly-traded as it comprises an operating division of Atmos Energy Corporation. Atmos Energy Corporation operates in eight states, serves approximately 3.4 million gas customers[10] and is publicly-traded on The New York Stock Exchange under the symbol ATO.

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before some 50 federal and provincial/state regulatory boards in the United States, Canada, and abroad, including the Federal Energy Regulatory Commission and the Federal Communications Commission.

8 Roger A. Morin, Modern Regulatory Finance, PUR Books 2021, at 476. ("Morin")

9 Atmos Energy Corporation, 2021 SEC Form 10-K, at 4.

10 Atmos Energy Corporation, 2021 SEC Form 10-K, at 4.

Q. PLEASE DESCRIBE THE SELECTION PROCESS FOR YOUR UTILITY PROXY GROUP.

A. As noted above, because Atmos Energy's Kansas natural gas utility operations is not publicly traded, it is necessary to look to a group of publicly traded companies to determine the Cost of Equity for the Company. In doing so, applying the selection criteria below should provide a group of companies that reflects Atmos Energy, while allowing for an assessment of risk through the use of market data. As such, I have selected my proxy group based on the following criteria:

- I exclude any natural gas distribution utilities not covered by *Value Line Investment Survey's* (*Value Line*) Standard Edition;
- I exclude any natural gas distribution utilities for which *Value Line* does not report a Beta coefficient;
- I exclude any natural gas distribution utilities which do not have an earnings per share growth projection from at least one of the following sources: Zacks, Yahoo! Finance, or *Value Line*;
- I exclude any natural gas distribution utilities that have recently cut or suspended dividend payments;
- I exclude any natural gas distribution utilities that are currently a party to a merger or significant transaction; and
- I exclude any natural gas distribution utilities that did not derive both 60.00 percent or greater of operating income, and total assets attributable to, regulated natural gas utility operations in the most recent fiscal year.

These criteria above resulted in the following Utility Proxy Group of six companies:

Table 3: Utility Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Holding Company	NWN
ONE Gas, Inc.	OGS
Spire Inc.	SR

VI. CAPITAL STRUCTURE

Q. WHAT CAPITAL STRUCTURE RATIOS DO YOU RECOMMEND BE APPLIED IN DEVELOPING THE COMPANY'S WACC?

A. I recommend the use of the Company's actual capital structure consisting of 38.86% long-term debt and 61.14% common equity as of March 31, 2022. This capital structure is the Company's actual capital structure as of March 31, 2022 less the securitized debt associated with Winter Storm Uri ("Uri").[11]

Q. PLEASE DESCRIBE SECURITIZATION AND EXPLAIN WHY IT IS NECESSARY TO EXCLUDE ITS IMPACTS ON THE COMPANY'S CAPITAL STRUCTURE.

A. Securitization is a cost-recovery process in which debt is issued, and secured, directly by customers. Because the debt is repaid directly from customers' bills and does not flow through the utility, it is viewed to be far less risky than if the debt

[11] The securitization of debt associated with Uri in Kansas and Texas is pending. The Company anticipates all Uri financing will be securitized prior to the conclusion of this case.

were continued to be held by the utility. Because the utility is not responsible for that debt, it would be incorrect to factor it in when determining the appropriate capital structure for the purpose of calculating the WACC. In this instance, therefore, the capital structure reflects the capital structure employed by investors, doing otherwise would go against financial theory. In addition, under K.S.A. 66-1,242 (f) and (g) of the Kansas Securitization Act, the Commission is prohibited from directly or indirectly considering the debt reflected by the securitized utility tariff bonds in establishing the utility's capital structure; in setting the utility's revenue requirement; and in determining the utility authorized rate of return.

Q. WHY IS IT IMPORTANT THAT ATMOS ENERGY'S ACTUAL CAPITAL STRUCTURE BE AUTHORIZED IN THIS PROCEEDING?

A. There are three primary reasons why it is important to authorize Atmos Energy's actual capital structure in this proceeding: (1) a healthy balance sheet ensures that the Company can access capital markets as necessary to provide safe and reliable service to its customers, which includes for both planned and unplanned events; (2) a robust capital structure supports a strong credit rating which allows utilities to access capital at lower rates than that of other utilities with lower credit ratings; and (3) it is consistent with regulatory and financial principles.

Q. PLEASE DISCUSS THE IMPORTANCE OF ACCESSING THE CAPITAL MARKETS FOR UNPLANNED EVENTS.

A. In February 2021, the United States was impacted by Uri. Several members of the Utility Proxy Group were affected by Uri and were forced to raise significant amounts of debt to pay for exponentially increased costs of natural gas.

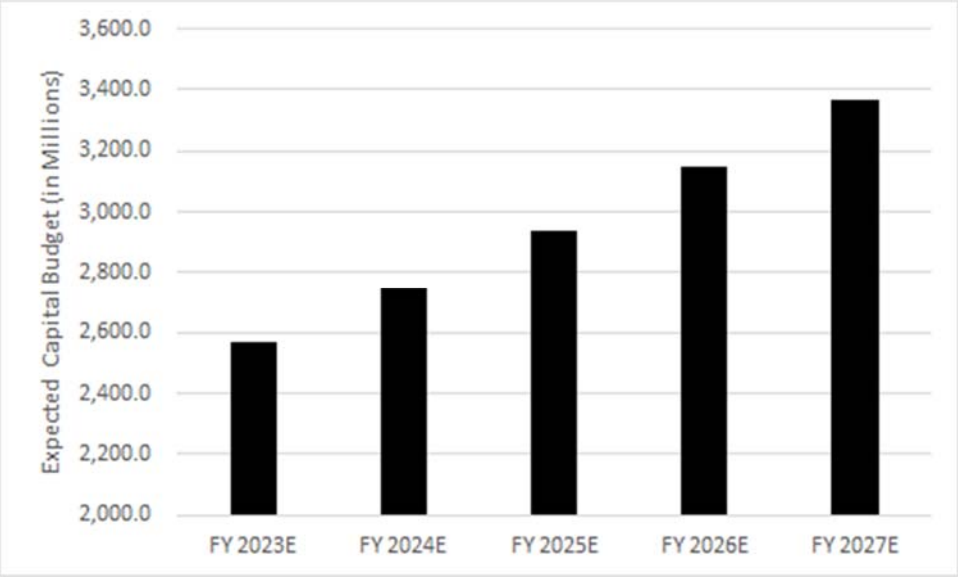
As shown in Exhibit MRH-2, Atmos Energy Corporation and ONE Gas, Inc. ("OGS") common equity percentages for the first quarter of 2021 were significantly impacted by their need to raise capital. Both Atmos Energy Corporation and OGS collectively were required to raise $4.7 billion in debt in response to Uri.[12] The increased risk associated with this debt issuance was reflected in the rating agency's analysis. Atmos Energy Corporation was downgraded by Standard & Poor's ("S&P") and its outlook was downgraded to negative by both S&P and Moody's Investors Service ("Moody's"), and OGS was downgraded and given negative outlooks by both agencies.[13] Because Atmos Energy Corporation and OGS had strong balance sheets prior to this unanticipated need for debt, both companies had access to the capital markets and were able to maintain financial stability with the downgrades. Subsequently, energy providers that did not have strong balance sheets had to file for Chapter 11 protection due to the exorbitant costs (*e.g.,* Griddy Energy,[14] Entrust,[15] Just Energy,[16] Brazos[17]) and of those, some were unable to serve their customers and were liquidated (*e.g.,* Giddy Energy and Entrust).

[12] Atmos Energy Corporation, SEC Form 8-K, May 5, 2021; ONE Gas, Inc., SEC Form 8-K, February 22, 2021.
[13] Source: S&P Capital IQ.
[14] Griddy Energy entered Chapter 11 on March 15, 2021.
[15] Entrust filed for Chapter 11 protection on March 30, 2021.
[16] Just Energy (Canadian) filed Chapter 15 on March 9, 2021.
[17] Brazos filed for Chapter 11 protection on March 1, 2021.

Q. DOES ATMOS ENERGY HAVE A SIGNIFICANT CAPITAL EXPENDITURE PLAN IN PLACE?

A. Yes, it does. As shown in Chart 1, below, over the next five years, Atmos Energy Corporation is projected to increase investment in its infrastructure in each year:

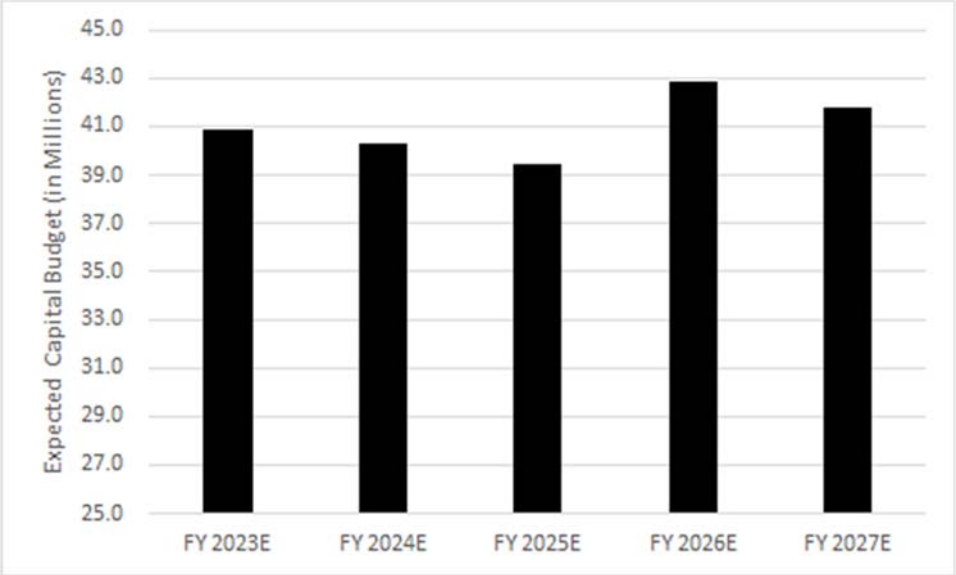
Chart 1: Projected Capital Spend for Atmos Energy Corporation 2023-2027[18]



Similarly, as shown in Chart 2, below, Atmos Energy's infrastructure investment is expected to remain robust over the same period.

[18] Company provided.

Chart 2: Projected Capital Spend for Atmos Energy Kansas 2023-2027[19]



Given Atmos Energy Corporation's projected capital spend, both for its entire operations and its Kansas operations, a robust capital structure such as that of Atmos Energy will allow the Company to fund its investments at a reasonable cost.

Q. HOW DOES A ROBUST CAPITAL STRUCTURE AND HEALTHY BALANCE SHEET AFFECT THE COSTS FOR ATMOS ENERGY TO RAISE CAPITAL?

A. A robust capital structure and healthy balance sheet better ensure that a company will maintain a stronger credit rating, which theoretically translates into a lower cost of debt.

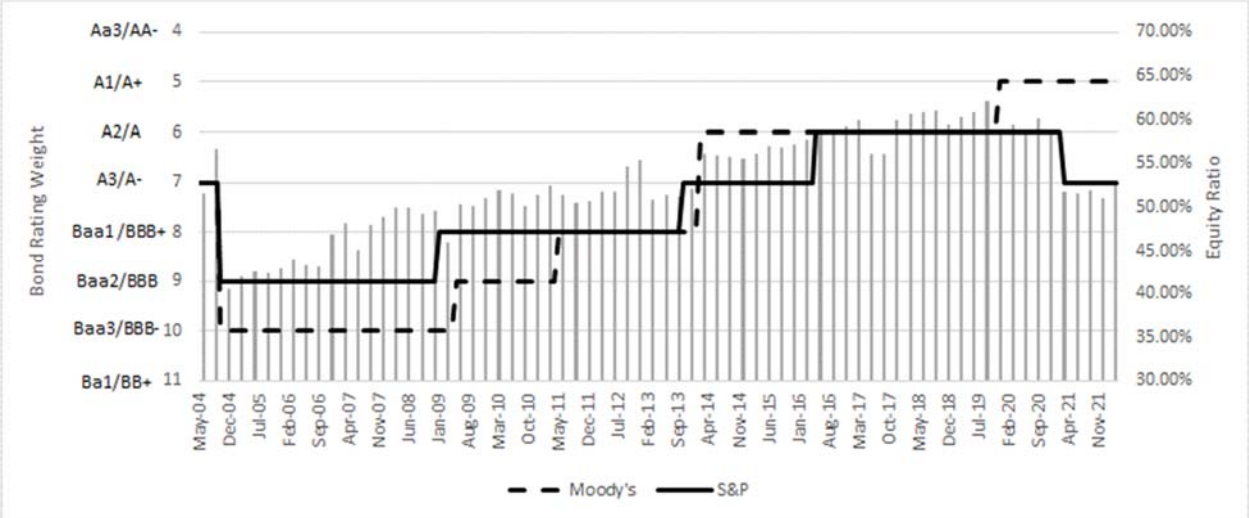
[19] Company provided.

Q. HOW HAVE CHANGES IN THE COMPANY'S EQUITY RATIO OVER TIME AFFECTED ATMOS ENERGY CORPORATION'S BOND RATING?

A. As shown in Chart 3, below, changes in Atmos Energy Corporation's bond ratings generally appear to follow changes in the Company's equity ratio. For example, credit rating downgrades from both Moody's and S&P in September 2004 corresponded to a drop in Atmos Energy Corporation's equity ratio from 56.57% to 40.50% in the following quarter. From the downgrade in 2004 through the events of Uri, Atmos Energy Corporation continued to improve its equity ratio, which corresponded to several credit rating upgrades.[20] However, following Uri, Atmos Energy Corporation was forced to take on significant amounts of debt, which lead to a downgrade by S&P. Although Moody's did not downgrade Atmos Energy Corporation, it placed it on negative watch due to the significant amount of debt it took on. While equity thickness is not the only factor considered by bond rating agencies in their analyses, the relationship between bond ratings and equity thickness is clearly meaningful.

[20] Moody's upgraded Atmos Energy Corporation on 5/18/2009 (Baa3 to Baa2), 5/11/2011 (Baa2 to Baa1), 1/30/2014 (Baa1 to A2), and 12/16/2019 (A2 to A1). S&P upgraded Atmos Energy Corporation on 12/23/2008 (BBB to BBB+), 10/8/2013 (BBB+ to A-) and 5/13/2016 (A- to A).

Chart 3: Atmos Energy Corporation's Bond Ratings and Corresponding Equity Ratios Over Time[21]



Q. PLEASE COMMENT ON MOODY'S OUTLOOK FOR ATMOS ENERGY CORPORATION IN THE AFTERMATH OF URI.

A. While Moody's did not ultimately downgrade Atmos Energy Corporation, Moody's noted:

> "Atmos' credit profile is pressured by the uncertainty surrounding the recovery timeline for the substantial gas costs incurred during the recent weather events," stated Edna Marinelarena, Moody's analyst. We see Atmos carrying a sizeable amount of incremental debt over the next few years, a result of the disruptions in the gas markets. According to the company, Atmos incurred between $2.5 billion and $3.5 billion in procurement costs in February when they typically spend about $1.2 billion for the full year.
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> Although Atmos is authorized to recover its fuel costs, there is uncertainty around the recovery timeline. We see rising social risks associated with customer relations because of the significant impact these costs will have on customer bills. We see state utility regulators weighing customer impact against the company's ability to manage the cost recovery over a medium to long-term period. As

[21] Source of Information: S&P Capital IQ, Moody's Investment Services, Company SEC filings.

> a result, the long-term financial profile for the company will change.[22]

It is worth noting that not only is the incremental debt, and the effect that debt will have on Atmos Energy Corporation's balance sheet a concern, but so is the regulatory risk Atmos Energy Corporation faces in light of Uri.

Most recently, however, Moody's upgraded Atmos Energy Corporation's outlook, but still indicated risks remain surrounding unexpected events, further reinforcing the need for Atmos Energy Corporation to maintain a strong balance sheet and corresponding credit profile:

> "The heightened credit risk at Atmos resulting from last February's severe winter weather event has been largely mitigated with the approval of the securitization financing order [1] in Texas," stated Edna Marinelarena, Assistant Vice President. The company incurred a total of about $2.1 billion in fuel costs as a result of the storm event of which about $2 billion was in Texas, its largest service territory. We believe the securitization of the extraordinarily high fuel costs will help to minimize the social risk related to rate increases and customer affordability concerns.
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> ***
>
> Atmos' credit rating is benefited by management's strong financial track record, where the company maintained a healthy amount of financial cushion above 23%, its established rating downgrade financial threshold. *The near-term weaker metrics provide little financial cushion for unforeseen events particularly as the company continues its high capital spending program, which is estimated between $13 billion and $14 billion over the next five years. Given ongoing credit supportive regulatory decisions and management's track record we see the company's financial metrics returning to the higher healthy levels. Any deviation from expectation could result in downward rating pressure. (emphasis added)*[23]

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[22] Moody's Investors Service, *Rating Action: Moody's changes outlook of Atmos to negative*, February 25, 2021.

[23] Moody's Investors Service, *Rating Action: Moody's revises Atmos' outlook to stable; affirms ratings*, February 22, 2022. Moody's also noted that $100 million in storm costs occurred in Kansas,

Q. WOULD THE AUTHORIZATION OF THE COMPANY'S CAPITAL STRUCTURE BE VIEWED FAVORABLY BY THE RATING AGENCIES FROM A REGULATORY ASSESSMENT STANDPOINT?

A. Yes, it would. Both S&P and Moody's find the regulatory environment a company operates in to be a significant factor in determining its credit ratings. Moody's places 50.00 percent weight on regulatory related factors in determining a company's credit rating.[24] Similarly, S&P notes:

> The regulatory framework/regime's influence is of critical importance when assessing regulated utilities' credit risk because it defines the environment in which a utility operates and has a significant bearing on a utility's financial performance.[25]

Clearly, were the Commission to authorize the Company's actual capital structure, it would support not only the Company's credit rating, but the benefits that stem from a stronger rating, such as protection in the face of uncertain events and reduced costs of debt and capital.

Q. PLEASE ELABORATE ON HOW THE APPROVAL OF THE COMPANY'S ACTUAL CAPITAL STRUCTURE COULD IMPACT INVESTOR COSTS.

A. First, one of the key considerations for investors is the financial risk of an investment. Financial risk is driven by the proportions of debt and equity. If the authorized capital structure were to increase the proportion of debt compared to that

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which represent a little under half of the Company's rate base, further reflecting the need for credit supportive outcomes in this proceeding.

[24] Moody's Investors Service, *Rating Methodology; Regulated Gas and Electric Utilities*, December 23, 2013, at 6.

[25] Standard & Poor's, RatingsDirect, *Key Credit Factors for the Regulated Utilities Industry*, November 19, 2013, at 6.

actually present, it would have the effect of increasing investors' assessment of financial risk, and *vice versa*. Increased risk means increased costs for both debt and equity investors, which are passed on to customers. Subsequently, customers would also experience the benefits of reduced costs to investors.

Second, in assessing the costs of debt and equity, investors compare the financial risk, in conjunction with the business risk, with that of comparable alternatives. Looking to the Utility Proxy Group, as shown on Exhibit MRH-2, the average common equity ratios over the last eight quarters for the Utility Proxy Group, at the holding company level, range from 32.29 percent to 54.54 percent. However, controlling for the securitization of the extraordinary costs from Uri, the high-end of that range approaches 60.70 percent to 60.90 percent for OGS and Atmos Energy Corporation, respectively.[26]

Looking to the operating subsidiary level, that ratio ranges from 32.29 percent to 60.79 percent, and more recently, has ranged from 34.40 percent to 62.05 percent for the first calendar quarter of 2022. The use of operating subsidiaries carries the added weight of reflecting the capital structures in place at regulated entities, as is Atmos Energy. In either case, Atmos Energy's actual equity ratio is supported by the range of equity ratios in place at the Utility Proxy Group companies.

[26] ONEGas, Inc. Investor Presentation, American Gas Association Financial Forum, at 26 (May 2022) and Atmos Energy Corporation, Fiscal 2022 Second Quarter Financial Results Presentation, at 8 (May 5, 2022).

Q. IS THE FINANCIAL RISK OF ATMOS ENERGY RELATIVE TO THE UTILITY PROXY GROUP ALREADY ACCOUNTED FOR IN YOUR RECOMMENDATION?

A. Yes, it is. As explained in Section VIII below, I have adjusted the indicated range of common equity cost rates for the Utility Proxy Group downward by 0.07 percent to reflect the lower degree of credit risk faced by Atmos Energy relative to the Utility Proxy Group. However, as discussed throughout this section, the benefit of that credit rating and the downward adjustment, based on the Company's lower credit risk, are largely dependent on the Company maintaining a healthy balance sheet and subsequent stronger relative credit rating. Were the Commission to authorize a capital structure other than Atmos Energy actual capital structure, it could put the Company's credit position in jeopardy.

Q. PLEASE SUMMARIZE YOUR POSITION REGARDING THE APPROPRIATE CAPITAL STRUCTURE TO BE AUTHORIZED IN CALCULATING THE WACC FOR ATMOS ENERGY?

A. The Commission should authorize the Company's actual capital structure of 38.86 percent long-term debt and 61.14 percent common equity as of March 31, 2022. The authorization of the Company's actual capital structure is consistent with the operations of Atmos Energy as a regulated natural gas entity and reflects the capital structure used by investors in assessing the Company, and is consistent with the capital structures maintained by the Utility Proxy Group holding companies, as well as their operating companies. Doing so also enables Atmos Energy to maintain a healthy balance sheet and strong financial footing. This will allow the Company to

invest in its system to provide safe and reliable service, while also ensuring that it is able to respond to significant unexpected events. Lastly, the financial health of the Company is reflected in its stronger credit rating, which reduces the costs to customers. In view of the above, the Company's actual capital structure of 38.86 percent long-term debt and 61.14 percent common equity as of March 31, 2022 is appropriate and should be authorized by the Commission.

VII. COST OF EQUITY ESTIMATION

Q. PLEASE SUMMARIZE YOUR COST OF EQUITY ANALYSIS.

A. The Cost of Equity reflects the return investors require to make an equity investment in a given enterprise. In making that determination, investors are guided by the financial principle that the return required must compensate for their perceived level of risk, with that level of risk reflected in the market prices they are willing to pay, with greater risk requiring a greater return.[27] Thus, multiple financial analytical models have been developed to estimate the relationship between investors' perception of risk and the return they require to bear that risk. Because regulation acts as a substitute for marketplace competition, the assessment of the appropriate ROE must look to the capital markets in which investors make their pricing decisions. Therefore, in my determination of the appropriate ROE for Atmos Energy, I have applied three financial models that are generally accepted academically[28] and commonly applied in regulatory proceedings to the Utility

[27] *See, for example*, Morin, at 27-29.
[28] *See, for example*, Morin at 477-478.

Proxy Group: The DCF, the CAPM, and the RPM. I discuss each of these models and their results in more detail below.

Lastly, because the Utility Proxy Group is comparable in risk, but not identical to Atmos Energy, I have examined the applicable risk adjustments based on Atmos Energy's size and credit risk, respectively, relative to that of the Utility Proxy Group. I have also made an adjustment to reflect the issuance of common stock (i.e., flotation costs).

A. CONSTANT GROWTH DISCOUNTED CASH FLOW MODEL

Q. PLEASE DESCRIBE THE CONSTANT GROWTH DISCOUNTED CASH FLOW MODEL.

A. The DCF is based on the theory that the price of a stock is dependent on the present value of the future cash-flows for the company in question. In conducting my DCF analysis, I have applied the Constant Growth DCF, which takes the following form:

$$k = \frac{D_0\ (1+g)}{P} + \ g \quad \text{Equation [1]}$$

where:

K = the required Return on Common Equity;
D_0 = the annualized Dividend Per Share;
P = the current stock price; and
g = the *expected* growth rate.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN YOUR APPLICATION OF THE DCF MODEL.

A. The unadjusted dividend yields are based on each Utility Proxy Group company's annualized dividends per share as of May 31, 2022, divided by the 30-day average closing market prices for the period ending May 31, 2022. However, because

dividends are paid periodically throughout the year, as opposed to continuously, an adjustment must be made to the dividend yield.[29] Further, because utilities increase their quarterly dividend at various times during the year, it is a reasonable assumption to reflect one-half of the annual dividend growth rate in the dividend yield component. This adjustment has been applied in Column [4] of Exhibit MRH-3.

Q. WHY DO YOU RELY ON A 30-DAY AVERAGE STOCK PRICE IN CALCULATING YOUR DIVIDEND YIELDS?

A. Because anomalous events can affect the stock price on any particular-trading day, it is important to use an averaging period that mitigates the effects of any such events, while also accounting for current market conditions. As such, a 30-day average reasonably accomplishes this objective.

Q. PLEASE DESCRIBE THE GROWTH RATES USED IN YOUR CONSTANT GROWTH DCF.

A. Because the ROE is forward-looking in nature, it is important that the models and their inputs reflect the use of forward-looking data. As such, I have relied on the five-year earnings per share ("EPS") growth estimates as published by *Value Line*, Zacks, and Yahoo! Finance, all three of which are widely available to investors.

[29] *See, for example,* Myron J. Gordon and Eli Shapiro, C*apital Equipment Analysis: The Required Rate of Profit*, School of Industrial Management, Massachusetts Institute of Technology, at 106.

Q. WHY ARE PROJECTED EPS GROWTH RATES APPROPRIATE FOR USE IN THE DCF MODEL?

A. Over the long run, a utility's dividends, cash flow, or book value cannot grow without a corresponding growth in earnings. Specifically, over time, if a utility's earnings do not grow commensurately with dividends or cash flow then it will be forced to rely on alternative sources of cash, primarily depreciation. Because depreciation reflects the level of capital expenditures (or replacements) necessary to maintain a safe and reliable system, the utility will ultimately face a shortfall in its ability to both maintain dividends and capital expenditures if earnings growth is not maintained. In addition, any earnings not paid out as dividends or allocated to capital expenditures will be recorded as retained earnings, which increases book value. As such, book value, dividends, and cash flow are all dependent on earnings growth.

Clearly, earnings growth is the appropriate measure of growth moving forward, and more specifically, the use of projected earnings growth based on analysts' forecasts. It is also well supported in academic research that analyst earnings forecasts are reflected in the market. For example, research by Harris notes that "a growing body of knowledge shows that analysts' earnings forecasts are indeed reflected in stock prices."[30] Further, Vander Weide and Carleton have demonstrated that earnings growth projections have a statistically significant

[30] Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986), at 59.

relationship to stock valuation levels.[31] As such, the use of analyst projected earnings growth rates are appropriate for use as the growth component of the DCF.

Q. WHAT ARE THE RESULTS OF YOUR DCF ANALYSIS?

A. My DCF analysis results in both a mean and median estimated Cost of Equity of 9.72 percent as shown on Exhibit MRH-3.

B. CAPITAL ASSET PRICING MODEL

Q. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL.

A. The CAPM is a risk premium-based method of estimating the Cost of Equity in which the ROE is determined by adding a risk premium to an estimate of the risk-free rate. The risk premium is defined as the difference between the return required to invest in the broad market, less the risk-free rate ($r_m - r_f$). This is commonly referred to as the Market Risk Premium ("MRP"), and is discussed in more detail below. The CAPM is defined as:

$$K_e = r_f + B(r_m - r_f) \quad \text{Equation [2]}$$

where:

k = the required market ROE for a security;

β = the Beta coefficient of that security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

According to the underlying theory of the CAPM, unsystematic risk can be diversified away, meaning investors should only be compensated for systematic

[31] James H. Vander Weide and Willard T. Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988), at 81. The Vander Weide and Carleton study was updated in 2004 under the direction of Dr. Vander Weide. The results of the updated study were consistent with the original study's conclusions.

risk. Systematic, or non-diversifiable risk, is measured by the Beta coefficient ("β"), which is defined as:

$$\beta_j = \frac{\sigma_j}{\sigma_m} x \rho_{j,m} \quad \text{Equation [3]}$$

Where σ_j is the standard deviation of returns for company "*j*," σ_m is the standard deviation of returns for the broad market (as measured, for example, by the S&P 500 Index ("S&P 500")), and $\rho_{j,m}$ is the correlation of returns between company *j* and the broad market. The Beta coefficient therefore represents both relative volatility (i.e., the standard deviation) of returns, and the correlation in returns between the subject company and the overall market.

Q. HAVE YOU ALSO RELIED ON AN ALTERNATIVE FORM OF THE CAPM?

A. Yes. In addition to relying on the traditional CAPM as defined in Equation [2] above, I also rely on the empirical CAPM ("ECAPM"). The ECAPM reflects the reality that, although the results of numerous studies support the notion that the Beta coefficient is related to security returns, the empirical Security Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML. Morin[32] states:

> With few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:

[32] Morin, at 207, 221.

$$K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$$

where x is a fraction to be determined empirically. The value of x that best explains the observed relationship Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$

Considering the theoretical and practical support, I have relied on both the CAPM and ECAPM and have applied the inputs described below in both forms.

Q. HOW HAVE YOU CALCULATED THE RISK-FREE RATES IN YOUR CAPM ANALYSIS?

A. The risk-free rates applied in my CAPM analyses are based on: (1) a current, 30-day average yield on 30-year Treasury bonds (3.02 percent); and (2) a projected 30-year Treasury yield based on projections from *Blue Chip Financial Forecasts ("Blue Chip")* for the six quarters ending with the third-calendar quarter of 2023, and for the periods 2024-2028 and 2029-2033 (3.51 percent).[33]

Q. WHY HAVE YOU RELIED ON THE 30-YEAR TREASURY YIELD IN YOUR CAPM ANALYSIS?

A. Because equity investments are assumed to continue into perpetuity, the appropriate risk-free rate selected should ideally match the life of the underlying investment. Therefore, it is appropriate to rely on 30-year Treasury yields as the risk-free rate in applying the CAPM.

[33] Exhibit MRH-4, page 1, Column [3]; Sources: Bloomberg, *Blue Chip Financial Forecasts*, Vol. 41, No. 6, June 1, 2022, at 2 and 14.

Q. HAVE YOU APPLIED BOTH A CURRENT AND PROJECTED MEASURE OF THE RISK-FREE RATE IN YOUR CAPM ANALYSIS?

A. Yes, I have. I rely on both current and projected measures of 30-year Treasury yields because the extent to which current interest rates may be better estimators of future interest rates than analyst expectations can vary. Therefore, the use of both current and projected interest rates best captures the range of expected risk-free rates.[34]

Q. PLEASE DESCRIBE YOUR APPROACH TO ESTIMATING THE MRP.

A. As noted above, the MRP, $(r_m - r_f)$ in Equation [2] above, reflects the additional return investors require to invest in the broad market rather than a risk-free security. Because the cost of capital is expectational in nature, I calculated three expectational measures of the market required return: (1) a market return based on data from Bloomberg Professional ("Bloomberg"); (2) a market return based on data from *Value Line*; and (3) a market return based on alternative data as published in *Value Line's* Summary & Index.

I then average the three market return estimates discussed above and subtracted the respective risk-free rates from that average market return to determine the applicable MRPs for my CAPM analysis.[35]

[34] *See*, Morin, at 202.
[35] See, Exhibit MRH-4, page 1, column [4].

Q. PLEASE DESCRIBE YOUR MARKET RETURN ESTIMATES BASED ON THE S&P 500 COMPANIES.

A. The first two market return estimates are based on a market capitalization-weighted ROE derived by the application of the Constant Growth DCF model to the companies in the S&P 500. I derived two separate estimates using this approach, relying on expected dividend yields and forecasted earnings growth rates from both Bloomberg and *Value Line*, respectively, applying the one-half growth rate assumption described above. Market capitalizations for the S&P 500 companies were also sourced from Bloomberg and *Value Line*, respectively. This approach resulted in market return estimates of 12.35 percent and 16.29 percent, based on data from Bloomberg and *Value Line*, respectively.

Q. PLEASE DESCRIBE YOUR MARKET RETURN ESTIMATE BASED ON *VALUE LINE'S* SUMMARY & INDEX.

A. The third estimate is based on the application of the average three- to five-year median market price appreciation potential for the seven weeks ended June 3, 2022,[36] as published by *Value Line*, plus an average of the median estimated dividend yield for the common stocks of the 1,700 firms covered by *Value Line's* Standard Edition, also for the seven weeks ended June 3, 2022. This approach resulted in a market return estimate of 14.85 percent.

Q. WHAT IS THE APPLICABLE MARKET RETURN FOR USE IN THE CAPM?

A. In applying the expected market return, I relied on the average of the three market

[36] Consistent with the time frame used in my DCF analysis.

return estimates of 14.50 percent as shown on Exhibit MRH-4, page 2 (see also, Column [2] of page 1 of Exhibit MRH-4).

Q. WHAT BETA COEFFICIENTS DID YOU USE IN YOUR CAPM ANALYSIS?

A. I have relied on Beta coefficients provided by *Value Line* and Bloomberg, as shown on page 3 of Exhibit MRH-4. Both sources adjust their calculated Beta coefficients to reflect the tendency of Beta coefficients to regress to the market mean of 1.00. While *Value Line* relies on five-years of weekly returns, Bloomberg relies on two-years of weekly returns.

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?

A. The results of my CAPM analyses are shown in Table 4 below, and on page 1 of Exhibit MRH-4. Based on the results below, the ROE range as indicated by the CAPM is 11.99 percent (average median result) to 12.09 percent (average mean result).

Table 4: Summary of CAPM Results[37]

	CAPM	ECAPM	Average
Mean Results			
Current Risk-Free Rate (3.02%)	11.68%	12.39%	12.04%
Projected Risk-Free Rate (3.51%)	11.80%	12.48%	12.14%
Average Mean Results	11.74%	12.43%	12.09%
Median Results			
Current Risk-Free Rate (3.02%)	11.57%	12.30%	11.93%
Projected Risk-Free Rate (3.51%)	11.69%	12.39%	12.04%
Average Median Results	11.63%	12.35%	11.99%

[37] Exhibit MRH-4, page 1.

C. RISK PREMIUM MODEL

Q. PLEASE DESCRIBE THE RISK PREMIUM MODEL.

A. The RPM is based on the theory of risk and return, i.e., that investors require greater returns for bearing greater risk. The RPM specifically reflects the fact that equity shareholders are subordinate to holders of debt, and are last in line to any claims on a company's assets or earnings. As such, they require a premium to compensate for that added risk. In other words, equity investors require an Equity Risk Premium ("ERP") to invest in common stock relative to the return they would have otherwise earned by investing in a debt instrument of a company with comparable risk.

Q. PLEASE SUMMARIZE THE APPLICATION OF THE RPM.

A. In applying the RPM, one must calculate an ERP, or ERPs, derived from debt and equity of corresponding risk. Those ERPs are then ultimately added to a representative bond yield to determine the RPM-based ROE. As such, in determining an RPM-based ROE, I have relied on current and projected measures of debt, which are added to several ERP measures to ultimately develop an RPM-based ROE.

Q. WHAT MEASURES OF DEBT HAVE YOU APPLIED IN YOUR RPM?

A. In this case, the debt instruments I applied are based on: (1) a current, 30-day average yield on the Moody's utility bond yield that corresponds with the average proxy group credit rating, and (2) the corresponding projected Moody's utility bond yield, derived from projections from *Blue Chip* for the six quarters ending with the third-calendar quarter of 2023, and for the periods 2024-2028 and 2029-2033.

Q. HOW HAVE YOU DETERMINED THE CREDIT RATING FOR YOUR UTILITY PROXY GROUP?

A. To capture the long-term credit ratings representative of the regulated operations of each Utility Proxy Group company, I reviewed the credit ratings from both S&P and Moody's for each of the operating subsidiaries to the extent available. As presented in Exhibit MRH-5, page 4, the resulting Moody's and S&P long-term issuer ratings for the Utility Proxy Group are A2 and A-, respectively.[38]

Q. HOW HAVE YOU CALCULATED CURRENT AND PROJECTED MOODY'S BOND YIELDS APPLICABLE TO THE UTILITY PROXY GROUP?

A. For the current Moody's A2 utility bond yield, I took the 30-day average as reported by Bloomberg (4.67%), as shown on Exhibit MRH-5, page 3, column [3]. For the projected Moody's A2 utility bond yield, because I am not aware of any published projected Moody's A2 utility bond yields, I began with a projection of Moody's Aaa2 corporate bond yields (4.73 percent)[39], as published by *Blue Chip*. I then determined the spread between Moody's A2 utility and Aaa2 corporate bond yields (0.59 percent),[40] based on the 30-day average Moody's Aaa2 corporate bond yields (4.08 percent) and the 30-day average Moody's A2 utility bond yields (4.67 percent), as reported by Bloomberg and shown on Exhibit MRH-5, page 3, Columns [1] and [3], respectively. Lastly, I applied the spread between Moody's

[38] Reflects the average rating for the Utility Proxy Group based on numerically weighted ratings as shown on page 5 of Exhibit MRH-5.
[39] Exhibit MRH-5, page 3, Column [8].
[40] Exhibit MRH-5, page 3, Column [5].

A2 utility bond yields and Moody's Aaa2 corporate bond yields (0.59 percent)[41] to the forecasted Moody's Aaa2 corporate bond yield (4.73 percent)[42], which results in a projected Moody's A2 utility bond yield of 5.32 percent.[43]

Table 5: Derivation of Projected Moody's A2 Utility Bond Yield[44]

Projected Moody's Aaa2 Corporate Bond Yield	4.73%
Adjustment to Reflect Projected A2 Utility Bond Yield	0.59%
Projected Moody's A2 Utility Bond Yield	5.32%

Q. HOW HAVE YOU CALCULATED THE EQUITY RISK PREMIUM APPLICABLE TO THE PROXY GROUP?

A. As discussed previously, because the cost of capital is expectational in nature, I have calculated three expectational measures of the ERP. The first two measures are based on the application of the DCF and CAPM to the S&P 500 Utilities index. The third measure estimates the ERP using previously authorized returns for natural gas distribution utilities from 1980 through May 2022.

Q. WHY HAVE YOU RELIED ON THE S&P 500 UTILITIES INDEX IN CALCULATING TWO OF YOUR EQUITY RISK PREMIUM MEASURES?

A. The S&P 500 Utilities index is comprised of the companies within the S&P 500 which are classified as utilities. As such, in assessing the equity risk premium for utility equity over utility debt, one can capture a broad measure of the required equity risk premium through a broad-based utility index, such as the S&P 500

41 Exhibit MRH-5, page 3, Column [5].
42 Exhibit MRH-5, page 3, Column [8].
43 Exhibit MRH-5, page 3, Column [9].
44 Exhibit MRH-5, page 3.

Utilities index. Because utility bond yields reflect a broad array of risks, a correspondingly broad set of companies is practical in reflecting the incremental common equity risks relative to the Moody's utility bond yields. As such, the use of the S&P 500 Utilities index is appropriate.

Q. HOW HAVE YOU APPLIED THE S&P 500 UTILITIES INDEX IN CALCULATING YOUR EQUITY RISK PREMIUM?

A. I have applied a market capitalization-weighted DCF and CAPM to the market data of each utility in the S&P 500 Utilities index. Although the S&P 500 Utilities index is comprised solely of utilities, in order to match its return one would necessarily have to allocate their funds in accordance with the specific market weights of the component utilities.[45]

Q. PLEASE DESCRIBE HOW YOU APPLIED THE DCF TO THE S&P UTILITIES INDEX IN CALCULATING AN EXPECTED EQUITY RISK PREMIUM.

A. I derived an expected DCF return using the same approach as applied in determining my expected market return in my CAPM analyses, using data from both Bloomberg and *Value Line*. The resulting DCF returns for the S&P Utilities Index were 9.88 percent (Bloomberg) and 10.58 percent (*Value Line*), as shown on page 7 of Exhibit MRH-5, averaging 10.23 percent.[46]

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[45] Investors have the ability to purchases the Utilities Select Sector SPDR® Fund (NYSE: XLU) which seeks to provide an effective representation of the utilities sector of the S&P 500 Index, and although an investment in the XLU would achieve approximately the same outcome, an investor still would have to determine the required return for the XLU based on the market capitalization weighted estimates.

[46] Exhibit MRH-5, page 7. Because the S&P Utilities Index-derived DCF and CAPM reflect market capitalization weighted averages it is not practical to calculate a median result.

Q. PLEASE DESCRIBE HOW YOU APPLIED THE CAPM TO THE S&P 500 UTILITIES INDEX IN CALCULATING AN EXPECTED EQUITY RISK PREMIUM.

A. I calculated the CAPM-based return for the S&P 500 Utilities index in the same manner as applied to the Utility Proxy Group, with the exception being that I derived a market capitalization-weighted Beta coefficient based on the companies within the S&P 500 Utilities index. The average market capitalization-weighted Beta coefficient for the S&P 500 Utilities index is 0.75,[47] based on Bloomberg (0.65) and *Value Line* (0.84). The indicated equity returns for the S&P Utilities Index based on the CAPM are 11.95 percent and 12.06 percent based on current and projected interest rates, respectively.

Q. DID YOU APPLY THE MOODY'S UTILITY BOND YIELD APPLICABLE TO THE RATING OF THE S&P 500 UTILITIES INDEX IN CALCULATING THE RESPECTIVE EQUITY RISK PREMIUMS?

A. Yes, I did. As noted above, because the risk premium reflects the premium equity investors require over the return on debt of similar corresponding risk, it is appropriate to apply the market capitalization-weighted Moody's long-term credit rating for the S&P 500 Utilities index (A3) in deriving both the DCF and CAPM-derived ERPs based on the S&P 500 Utilities index.

[47] Exhibit MRH-5, page 8, Column [1].

Q. HOW HAVE YOU CALCULATED CURRENT AND PROJECTED MOODY'S BOND YIELDS APPLICABLE TO THE S&P 500 UTILITIES INDEX?

A. I began with current bond yields based on a 30-day average Moody's A2 utility bond yield (4.67 percent) and a 30-day average Moody's Baa2 utility bond yield (4.99 percent), as reported by Bloomberg, shown on Exhibit MRH-5, page 3, Columns [3] and [4], respectively. Next, because the S&P 500 Utilities index average Moody's long-term rating is A3 as noted above, it is necessary to adjust the current Moody's A2 utility bond yield average upwards by one-third (0.11 percent) of the spread between the recent Moody's Baa2 utility bond yield and A2 utility bond yield (0.32 percent)[48]. The resulting current Moody's utility A3 utility bond yield is thus 4.78 percent (*see* Table 6 below).[49]

Table 6: Derivation of Current Moody's A3 Utility Bond Yield[50]

Current Moody's A2 Utility Bond Yield	4.67%
Adjustment to Reflect Current A3 Utility Bond Yield	0.11%
Current A3 Utility Bond Yield	4.78%

To derive the applicable projected bond yields, I first took the projected Moody's A2 utility bond yield noted above (5.32 percent).[51] As above, it is necessary to adjust the projected Moody's A2 utility bond yield upwards by the previously discussed 0.11 percent spread between recent Moody's Baa2 and A2

48 Exhibit MRH-5, page 3, Column [7].
49 Exhibit MRH-5, page 3, Column [10].
50 Exhibit MRH-5, page 3.
51 Exhibit MRH-5, page 3, Column [9].

utility bond yields, resulting in a projected Moody's A3 utility bond yield of 5.42 percent (see Table 7 below).[52]

Table 7: Derivation of Projected Moody's A3 Utility Bond Yield[53]

Projected Moody's A2 Utility Bond Yield	5.32%
Adjustment to Reflect Current A3 Utility Bond Yield	0.11%
Current A3 Utility Bond Yield	5.42%

Q. WHAT IS YOUR CONCLUSION OF THE ERPS APPLICABLE TO THE S&P 500 UTILITIES INDEX?

A. Based on the application of the DCF and CAPM-based equity returns for the S&P 500 Utilities index, and the corresponding Moody's A3 utility bond yields, I derived the following ERP estimates as shown in Tables 8, below:

Table 8: Summary of DCF-Derived Equity Risk Premium[54]

	Current Yields	Projected Yields
Average DCF-Derived S&P Utilities Index Return	10.23%	10.23%
Moody's A3 Utility Bond Yield	4.78%	5.42%
Equity Risk Premium	5.45%	4.80%
CAPM-Derived S&P Utilities Index Return	11.95%	12.06%
Moody's A3 Utility Bond Yield	4.78%	5.42%
Equity Risk Premium	7.17%	6.63%

Averaging the ERPs based on current and projected yields ultimately results in ERPs applicable to the S&P 500 Utilities index of 6.31 percent and 5.72 percent (as shown in Table 9, below, and Exhibit MRH-5, page 6.)

52 Exhibit MRH-5, page 3, Column [11].
53 Exhibit MRH-5, page 3.
54 Exhibit MRH-5, page 7 (DCF) and page 8 (CAPM).

Table 9: S&P 500 Utilities Index-Derived Equity Risk Premium[55]

	Current Yields	Projected Yields
DCF-Derived S&P 500 Utilities Index Equity Risk Premium	5.45%	4.80%
CAPM-Derived S&P 500 Utilities Index Equity Risk Premium	7.17%	6.63%
Average	6.31%	5.72%

Q. ARE THE S&P 500 UTILITIES INDEX-DERIVED ERP ESTIMATES APPLICABLE TO THE UTILITY PROXY GROUP?

A. No, they are not. The Utility Proxy Group rating of A2 reflects a lower degree of risk as compared to the A3 rating of the S&P 500 Utilities index. Therefore, I have applied a downward adjustment of 0.11 percent based on one-third the spread between Moody's Baa2 utility and Moody's A2 utility bond yields to the average of the DCF- and CAPM-derived ERP estimates based on the S&P 500 Utilities index.

Subtracting the 0.11 percent from the S&P 500 Utilities index-derived ERPs results in ERP estimates applicable to the Utility Proxy Group of 6.21 percent and 5.61 percent, respectively (see, Exhibit MRH-5, page 6, and Table 10 below).

[55] Exhibit MRH-5, page 6.

Table 10: Summary of S&P 500 Utilities Index-Derived Equity Risk Premiums Applicable to the Utility Proxy Group[56]

	Current Moody's Utility-Derived ERP	Projected Moody's Utility-Derived ERP
Average S&P 500 Utilities Index-Derived Risk Premium	6.31%	5.72%
Adjustment to Reflect Utility Proxy Group Rating	-0.11%	-0.11%
Risk Premium Applicable to the Utility Proxy Group	6.21%	5.61%

Q. PLEASE SUMMARIZE THE USE OF AUTHORIZED RETURNS FOR NATURAL GAS DISTRIBUTION UTILITIES IN CALCULATING AN ERP.

A. The use of previously authorized returns is an appropriate and important measure available to investors as previously authorized returns reflect the market conditions and forward-looking investor required returns over time. The relationship between authorized return ERPs and utility bond yields therefore reflects the relationship between forward-looking equity risk premiums and the corresponding interest rates over time. Applying that relationship to current and projected utility bond yields produces forward-looking ERP measures. The relationship between forward-looking ERP data and interest rates is both statistically significant and inverse (i.e., as interest rates increase, the ERP decreases, and vice versa), which is consistent with the well-documented financial literature on the subject.[57]

[56] Exhibit MRH-5, page 6.

[57] *See*, *e.g.*, Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992, at 63-70; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985, at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Autumn 1995, at 89-95.

Q. PLEASE EXPLAIN YOUR CALCULATION OF THE EQUITY RISK PREMIUM BASED ON PREVIOUSLY AUTHORIZED RETURNS FOR NATURAL GAS DISTRIBUTION UTILITIES.

A. Page 9 of Exhibit MRH-5 presents the results of a regression analysis of 1,231 authorized returns for natural gas distribution utilities from 1980 through May 2022. Subtracting the available monthly Moody's A2 utility bond yield[58] as of the date of the order from the authorized ROE, I was able to determine the applicable ERP. Using ERPs as the dependent variable and the Moody's A2 utility bond yields as the independent variable, I performed a linear regression to estimate the ERP applicable to the current and projected Moody's A2 utility bond yields described above. The current and projected Moody's A2 utility bond yields of 4.67 percent and 5.32 percent, respectively, produce ERP estimates of 5.30 percent and 4.98 percent, respectively.

Q. PLEASE SUMMARIZE YOUR EQUITY RISK PREMIUM ESTIMATES.

A. As shown in Table 11, below, my analyses produce average ERP estimates of 5.75 percent and 5.30 percent, applicable to current and projected Moody's A2 utility bond yields, respectively.

[58] Reflects the monthly Moody's A2 utility bond yield available on the date of the order. Prior to approximately the year 2000, Moody's utility bond yields were only available on a monthly basis, and in order to maintain consistency throughout the analysis, I have applied monthly yields for the period subsequent to the year 2000 as well. The use of Moody's A2 utility bond yields is consistent with the long-term Moody's rating of the Utility Proxy Group.

Table 11: Summary of Equity Risk Premium Estimates[59]

	Current Moody's A2 Utility Yields	Projected Moody's A2 Utility Yields
S&P 500 Utilities Index	6.21%	5.61%
Regression Analysis of Authorized ROEs	5.30%	4.98%
Average	5.75%	5.30%

Q. WHAT ARE THE RESULTS OF YOUR RISK PREMIUM MODEL?

A. The results of my Risk Premium Model can be found on Exhibit MRH-5, page 1. When the average ERPs of 5.75 percent and 5.30 percent, found in Table 11 above, are added to their respective current and projected A2 utility bond yields of 4.67 percent and 5.32 percent, respectively, it produces RPM-derived ROEs of 10.42 percent and 10.61 percent, respectively. Averaging those estimates results in an average RPM ROE estimate of 10.52 percent.

Table 12: Summary of Equity Risk Premium Results[60]

	Current Moody's A2 Utility Yield	Projected Moody's A2 Utility Yield
Average Equity Risk Premium	5.75%	5.30%
Utility Bond Yield	4.67%	5.32%
Return on Equity	10.42%	10.61%
Risk Premium Derived Return on Equity	10.52%	

[59] Exhibit MRH-5, page 2.
[60] Exhibit MRH-5, page 1.

D. SUMMARY OF RESULTS APPLICABLE TO THE UTILITY PROXY GROUP

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR COST OF EQUITY MODELS AS APPLIED TO THE UTILITY PROXY GROUP.

A. As shown in Table 13 below, the application of the multiple Cost of Equity models to the market data of the Utility Proxy Group results in an indicated range of 9.75 percent to 12.05 percent.

Table 13: Summary of ROE Results Applicable to the Utility Proxy Group[61]

	Mean	Median
Discounted Cash Flow	9.72%	9.72%
Midpoint	9.72%	
Capital Asset Pricing Model	12.09%	11.99%
Midpoint	12.04%	
Risk Premium Model	10.52%	
Recommended Range Prior to the Application of Company-Specific Adjustments	9.75% - 12.05%	

However, as noted above, the use of a Utility Proxy Group cannot fully reflect the risks of Atmos Energy. Therefore, it is necessary to conduct a relative risk analysis between Atmos Energy and the Utility Proxy Group to determine whether additional adjustments need to be made. Also, one must account for flotation costs.

[61] Exhibit MRH-1, page 2.

VIII. ADDITIONAL RISK FACTORS

A. SIZE PREMIUM

Q. PLEASE EXPLAIN THE BASIS FOR A SIZE PREMIUM FOR ATMOS ENERGY.

A. Size affects business risk because smaller companies are less able to handle fluctuations in revenues, expenses, and capital outlays than larger companies. Significant events or unexpected capital needs could have more serious consequences for smaller companies that exceed those of larger, more diverse companies. For example, a smaller company that losses several large customers, or requires significant expenditures, ultimately has fewer options in which to generate returns on its investments compared to a larger company with a broad and diverse customer base. As such, investors require an increased return to compensate for this additional risk.

That size is an additional risk factor has also been well documented in financial literature. For example, Duff & Phelps' (now Kroll) notes:

> The size effect is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital. The "size" of a company is one of the most important risk elements to consider when developing cost of equity capital estimates for use in valuing a business simply because size has been shown to be a *predictor* of equity returns. In other words, there is a significant (negative) relationship between size and historical equity returns - as size *decreases*, returns tend to *increase*, and vice versa. (emphasis in original)[62]
>
> ***
>
> Despite many criticism of the size effect, it continues to be observed in data sources.

[62] Kroll, Cost of Capital Navigator: U.S. Cost of Capital Module, Size as a Predictor of Returns, at 1.

Similarly, Eugene Brigham states:

> A number of researchers have observed that portfolios of small-firms (sic) have earned consistently higher average returns than those of large-firm stocks; this is called the "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; **what the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.** (emphasis added)[63]

It is clear from the above that the market compensates investors for taking on small size as a risk factor. Therefore, the size of Atmos Energy relative to the Utility Proxy Group should be considered in determining the Company's ROE.

Q. HOW HAVE YOU CALCULATED THE ESTIMATED MARKET CAPITALIZATION FOR ATMOS ENERGY?

A. Because Atmos Energy's Kansas natural gas utility operations is not a separately traded entity, it is necessary to estimate an implied stand-alone market capitalization for the Company. To do so, I applied the median market-to-book ("M/B") ratio for the Utility Proxy Group of 1.88 to Atmos Energy's Kansas operation's implied common equity of $172.8 million.[64] Applying the proxy group M/B ratio to that amount results in an implied market capitalization of $324 million.[65]

Q. WHAT IS THE APPLICABLE SIZE PREMIUM FOR ATMOS ENERGY?

A. In its *Cost of Capital Navigator*, Kroll calculates the size premium for deciles of market capitalizations relative to the S&P 500. As shown on Exhibit MRH-6, as

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63 Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989), at 623.

64 Exhibit MRH-6; calculated as Atmos Energy's proposed rate base multiplied by Atmos Energy's common equity ratio.

65 Exhibit MRH-6.

of May 31, 2022, the median market capitalization of the Utility Proxy Group is approximately $4.496 billion, which corresponds to the 5th decile, or a size premium of 0.89 percent, based on Kroll's market capitalization data. The implied market capitalization for Atmos Energy as noted earlier is approximately $324 million, which falls within the 9th decile and corresponds to a size premium of 2.10 percent. The difference between those size premiums is 1.21 percent (2.10 percent – 0.89 percent).

Q. HAVE YOU APPLIED A SIZE PREMIUM OF 2.10 PERCENT IN YOUR RECOMMENDATION?

A. No. As noted above, I conservatively applied a size premium of 0.20 percent, which accounts for Atmos Energy's Kansas natural gas utility operations' smaller size relative to the Utility Proxy Group.

B. CREDIT RISK

Q. PLEASE SUMMARIZE YOUR CREDIT RISK ADJUSTMENT.

A. Atmos Energy Corporation's long-term credit ratings are A1 and A- from Moody's Investors Services and S&P, respectively, which are less risky overall than the average long-term ratings for the Utility Proxy Group of A2 and A-, respectively.[66] Since Atmos Energy is an operating division of Atmos Energy Corporation, the long-term ratings would apply to them as well. Although long-term ratings do not directly translate to common equity risks, the indicated business and financial risks applicable to bondholders based on their respective credit ratings reflect a lesser degree of general risk facing Atmos Energy Corporation, relative to the Utility

[66] Source of Information: S&P Global Market Intelligence.

Proxy Group. As such, I have adjusted the Utility Proxy Group's indicated ROE downward to reflect this lower degree of risk.

To determine the necessary downward adjustment for an A1 rating relative to an A2 rating, one can take one-third of the spread between the 30-day average Moody's A2 public utility bond yields and the 30-day average Moody's Aa2 public utility bond yields (0.20 percent; see Exhibit MRH-5, page 3, column [6]), which translates into a downward adjustment of 0.07 percent.[67]

C. FLOTATON COST ADJUSTMENT

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are the costs associated with the sale of new issuances of common stock. Those costs include the compensation to the underwriting firm for distributing the shares, direct fees such as filing and legal expenses, and market pressure (i.e., downward pressure on the stock due to the increased supply of shares). Flotation costs ultimately reflect the fact that for every dollar raised through the issuances of debt or common stock, less than one full dollar is ultimately received.

Q. WHY IS IT IMPORTANT TO ACCOUNT FOR FLOTATION COSTS IN THE AUTHORIZED RETURN?

A. Flotation costs are a permanent loss of investment to the utility and should be accounted for. When any company, including a utility, issues common stock, flotation costs are incurred for legal, accounting, printing fees and the like. For

[67] 0.07% = 1/3 * 0.20%.

each dollar of issuing market price, a small percentage is expensed and is permanently unavailable for investment in utility rate base. Morin notes:

> The costs of issuing these securities are just as real as operating and maintenance expenses or costs incurred to build utility plants, and fair regulatory treatment must permit recovery of these costs….
>
> The simple fact of the matter is that common equity capital is not free….[Flotation costs] must be recovered through a rate of return adjustment.[68]

In other words, if a company issues stock at $1.00 with 5.00 percent in flotation costs, it will net $0.95 in investment. Assuming the investor in that stock requires a 10% return on his or her invested $1.00 (i.e., a return of $0.10), the company needs to earn approximately 10.50 percent on its invested $0.95 to receive a $0.10 return.

Q. CAN FLOTATION COSTS BE DIRECTLY EXPENSED OR AMORTIZED LIKE DEBT ISSUANCE EXPENSES?

A. While it may be possible to directly expense flotation costs for common equity when they occur, this unfairly burdens current customers as the benefits gained from raising capital extend indefinitely. Similarly, because the capital raised through an equity issuance has no predetermined maturity, it is not possible to amortize those expenses.

Q. HOW DID YOU CALCULATE THE FLOTATION COST ALLOWANCE?

A. I modified the DCF calculation to provide a dividend yield that would reimburse investors for issuance costs in accordance with the method cited in literature by Brigham and Daves, as well as by Morin. The flotation cost adjustment recognizes

[68] Morin, at p. 329.

the actual costs of issuing equity that were incurred by Atmos Energy Corporation in issuances since 2016. Based on the issuance costs shown on page 1 of Exhibit MRH-7, an adjustment of 0.05 percent is required to reflect the flotation costs applicable to the Utility Proxy Group.

IX. SUMMARY AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION OF THE APPROPRIATE WEIGHTED AVERAGE COST OF CAPITAL FOR THE COMPANY.

A. I recommend the Commission authorize a WACC of 8.18 percent for Atmos Energy. My recommendation takes into consideration a range of well documented analytical models, which are applied to relevant market data in determining the appropriate Cost of Equity of 10.95 percent for the Company. My recommendation also considers the benefit to customers given the authorization of the Company's actual capital structure of 38.86 percent debt and 61.14 percent common equity. Based on those assessments, I determined the appropriate WACC for Atmos Energy to be 8.18 percent.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

VERIFICATION

COMMONWEALTH OF MASSACHUSETTS)
)
COUNTY OF WORCESTER)

Matthew R. Howard, being duly sworn upon his oath, deposes and states that he is Manager at ScottMadden, 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.

Matthew R. Howard

Subscribed and sworn before me this 29th day of August, 2022.

Notary Public

My appointment expires: March 9, 2029

Summary

Matthew is an experienced consultant and a Certified Rate of Return Analyst (CRRA). Matthew joined ScottMadden in 2017 and has provided written testimony as an expert witness on several occasions regarding rate of return. He has also authored and co-authored valuation reports on several occasions and provided primary support on numerous occasions. In addition, he has extensive experience working across a variety of regulatory matters, having supported over 100 proceedings and filings. Mr. Howard earned a B.A. in psychology from the University of Colorado and an M.B.A. with honors, concentrating in finance, from Babson College. Mr. Howard also has experience managing funds for Babson College's endowment and conducting investment research at an investment advisory during a summer internship.

Areas of Specialization

- Return on Equity
- Valuation
- Capital structure
- Rates and regulation
- Business risk assessment
- Capital market assessment
- Financial modeling

Recent Assignments

- Maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured
- Authored valuation report on behalf of investor-owned utility for internal planning purposes
- Provides ongoing primary support across various Return on Equity proceedings

VALUATION REPORT FILINGS

Sponsor Company	Date	Assets Valued	Subject Matter
CSWR-Texas Utility Operating Company, LLC	04/2022	North Orange Water & Sewer, LLC	Authored Valuation Report for Sale, Transfer or Merger Filing in Texas.
City of York, PA	06/2021	Wastewater Operations	Co-Authored Valuation Report, which is part of an Act 12 Filing
Artesian Water Company, Inc.	01/2021	Confidential Wastewater Operations	Co-Authored valuation report for internal purposes
Artesian Water Company, Inc.	06/2020	Confidential Wastewater Operations	Co-Authored valuation report for internal purposes

EXPERT WITNESS TESTIMONY LISTING

Sponsor Company	Date Filed	Docket No.	Subject Matter
Maryland Public Service Commission			
Maryland Water Service	09/2021	Case No. 9671	Return on Equity
Michigan Public Service Commission			
Alpena Power Company	06/2021	Case No. U-21045	Rate of Return

PRIMARY TESTIMONY SUPPORT EXPERIENCE

Sponsor Company	Date Filed	Docket No.	Subject Matter
Alberta Utilities Commission			
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	01/2020	Proceeding ID. 24110	Return on Equity, Capital Structure
Arizona Corporation Commission			
EPCOR Water Arizona Inc	06/2020	Docket No. WS-01303A-20-0177	Return on Equity
Arizona Water Company – Western Group	12/2019	Docket No. W-01445A-19-0278	Return on Equity
Southwest Gas Corporation	05/2019	Docket No. G-01551A-19-0055	Return on Equity
Arkansas Public Service Commission			
CenterPoint Energy Resources Corp.	05/2021	Docket No. 21-004-U	Return on Equity
Entergy Arkansas, LLC	11/2020	Docket No. 16-036-FR	Return on Equity
Southwestern Electric Power Company	02/2019	Docket No. 19-008-U	Return on Equity
Liberty Utilities (Pine Bluff Water) Inc.	10/2018	Docket No. 18-027-U	Return on Equity
California Public Utilities Commission			
Southwest Gas Corporation	08/2019	Docket No. A-19-08-015	Return on Equity, Capital Structure
District of Columbia Public Service Commission			
Washington Gas Light Company	01/2020	Formal Case No. 1162	Return on Equity
Potomac Electric Power Company	05/2019	Formal Case No. 1156	Return on Equity
Federal Energy Regulatory Commission			
LS Power Grid California, LLC	10/2020	Docket No. ER21-195-000	Return on Equity
LS Power Grid New York Corporation I	12/2019	Docket No. ER20-716-000	Return on Equity
Duke Energy Progress, LLC	11/2019	Docket No. EL20-4-000	Respond to Compliant Testimony Regarding Return on Equity
Florida Public Service Commission			
Utilities, Inc. of Florida	06/2020	Docket No. 20200139	Return on Equity
Hawaii Public Utilities Commission			
Launiupoko Irrigation Co., Inc.	12/2020	Docket No. 2020-0217	Return on Equity, Capital Structure
Kansas Corporation Commission			
Empire District Electric Company	02/2019	Docket No. 19-EPDE-223-RTS	Return on Equity
Louisiana Public Service Commission			
Southwestern Electric Power Company	12/2020	Docket No. U-35441	Return on Equity
Maryland Public Service Commission			
Washington Gas Light Company	04/2019	Case No. 9605	Return on Equity
Potomac Edison Company	08/2018	Case No. 9490	Return on Equity
Massachusetts Department of Public Utilities			
NSTAR Electric Company d/b/a Eversource Energy	11/2018	DPU 18-76/DPU 18-77/DPU 18-78	Response to Direct Testimony by Attorney General Witness regarding Remuneration Rate Section 83C
Michigan Public Service Commission			
Indiana Michigan Power Company	06/2019	Case No. U-20359	Return on Equity
SEMCO Energy Gas Company	05/2019	Case No. U-20479	Return on Equity

Sponsor Company	Date Filed	Docket No.	Subject Matter
Missouri Public Service Commission			
Spire Missouri Inc.	12/2020	Case No. GR-2021-0108	Return on Equity
Nevada Public Utilities Commission			
Southwest Gas Corporation	02/2020	Docket No. 20-02023	Return on Equity
North Carolina Utilities Commission			
Piedmont Natural Gas Company, Inc.	04/2019	Docket No. G-9, Sub 743	Return on Equity
Aqua North Carolina, Inc.	07/2018	Docket No. W-218, Sub 497	Return on Equity
Oklahoma Corporation Commission			
Empire District Electric Company	03/2019	Cause No. PUB 201800133	Return on Equity
Pennsylvania Public Utility Commission			
Vicinity Energy Philadelphia, Inc.	04/2021	Docket No. R-2021-3024060	Rate of Return
Public Utility Commission of Texas			
Southwestern Electric Power Company	10/2020	Docket No. 51415	Rate of Return
CenterPoint Energy Houston Electric LLC	02/2019	Docket No. 49421	Return on Equity
Entergy Texas, Inc.	05/2018	Docket No. 48371	Return on Equity
Texas Railroad Commission			
EPCOR Gas Texas Inc.	06/2020	GUD 10988	Return on Equity, Capital Structure, Cost of Debt
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	10/2019	GUD 10920	Return on Equity, Capital Structure, Cost of Debt
Atmos Energy Corporation – Mid-Tex Division	10/2018	GUD 10779	Return on Equity, Capital Structure
Atmos Energy Corporation – West Texas Division	06/2018	GUD 10743	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/2018	GUD 10742	Return on Equity

SECONDARY TESTIMONY SUPPORT EXPERIENCE

Sponsor Company	Sponsor Company	Sponsor Company
AEP Texas Inc.	Ameren Illinois Company d/b/a Ameren Illinois	Aqua Virginia, Inc.
Arizona Water Company – Northern Group	Atlantic City Electric Company	Boston Gas Company and Colonial Gas Company d/b/a National Grid
Carolina Water Service, Inc. of North Carolina	Citizens' Electric Company of Lewisburg, PA, Wellsboro Electric Company and Valley Energy Company	Colorado Natural Gas, Inc.
Connecticut Light and Power Company	Cook Inlet Natural Gas Storage Alaska, LLC	Delmarva Power & Light Company
Dominion Energy North Carolina	Duke Energy Carolinas, LLC	Duke Energy Indiana, Inc.
El Paso Electric Company	Elizabethtown Gas Company	Emera Maine
Entergy New Orleans, LLC	Fitchburg Gas and Electric Light Company	Hawaiian Electric Company, Inc.
Hawai'i Electric Light Company, Inc.	Hope Gas, Inc., d/b/a Dominion Energy West Virginia	Jersey Central Power & Light
Kansas City Power & Light Company	Laclede Gas Company/Missouri Gas Energy	Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	Maui Electric Company, Limited
Narragansett Electric Company d/b/a National Grid	Northern Utilities, Inc. d/b/a Unitil	NSTAR Gas Company d/b/a Eversource Energy
Otter Tail Power Company	Potomac Electric Power Company	South Carolina Electric & Gas
Southwestern Public Service Company	SUEZ Water Pennsylvania Inc.	Summit Natural Gas of Missouri, Inc.
Summit Utilities, Inc.	Texas-New Mexico Power Company	Union Electric Company d/b/a Ameren Missouri
Virginia Electric and Power Company	Virginia Natural Gas	Westar Energy

Atmos Energy Corporation
Table of Contents
Supporting Exhibits Accompanying the Direct Testimony of
Matthew R. Howard

Atmos Energy Corporation
Summary of Common Equity Cost Rate

Type of Capital	Ratio [1]	Cost Rate		Weighted Cost Rate
Long-Term Debt	38.86%	3.84%	[2]	1.49%
Common Equity	61.14%	10.95%	[3]	6.69%
Total	100.00%			8.18%

Notes:

[1] Atmos Energy Corporation Consolidated Capital Structure as of March 31, 2022.

[2] Company Provided.

[3] From Page 2 of this Exhibit.

Atmos Energy Corporation
Summary of Common Equity Cost Rate

	Mean		Median	
DCF	9.72%		9.72%	[1]
Midpoint	9.72%			
CAPM	12.09%	[2]	11.99%	[3]
Midpoint	12.04%			
Risk Premium	10.52%			[4]
Recommended Range Prior to the Application of a Size Premium	9.75% - 12.05%			
Size Premium	0.20%			[5]
Credit Risk Adjustment	-0.07%			[6]
Flotation Cost Adjustment	0.05%			[7]
Recommended Range Applicable to Atmos Energy Corporation	9.90% - 12.20%			
Recommendation	10.95%			

Notes:

[1] Exhibit MRH-3.
[2] Page 1 of Exhibit MRH-4; Average of Mean Results Based on Current and Projected Interest Rates, respectively.
[3] Page 1 of Exhibit MRH-4; Average of Median Results Based on Current and Projected Interest Rates, respectively.
[4] Page 1 of Exhibit MRH-5; Average of Results Based on Current and Projected Utility Bond Yields.
[5] Adjustment to reflect the Company's greater risk due to its smaller size relative to the Utility Proxy Group as detailed in Mr. Howard's Direct Testimony.
[6] Company-specific risk adjustment to reflect Atmos Energy's lower credit risk due to its lower long-term credit rating relative to the Utility Proxy Group as detailed in Mr. Howard's Direct Testimony.
[7] Exhibit MRH-7.

Atmos Energy Corporation
Range of Capital Structures for the Past Eight Quarters for the
Proxy Group of Six Natural Gas Distribution Companies

Common Equity Ratio

Company	2022Q1	2021Q4	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	Average
Atmos Energy Corporation	53.02%	51.02%	51.89%	51.47%	51.67%	58.46%	59.98%	58.78%	54.54%
New Jersey Resources Corporation	43.22%	42.23%	42.19%	42.84%	44.33%	42.56%	44.65%	52.10%	44.27%
NiSource Inc.	34.40%	33.36%	30.34%	30.46%	33.28%	32.49%	31.01%	33.01%	32.29%
Northwest Natural Holding Company	48.60%	47.23%	49.31%	48.61%	49.48%	48.19%	47.16%	48.09%	48.33%
ONE Gas, Inc.	39.94%	38.95%	38.60%	36.21%	36.00%	58.53%	58.17%	58.08%	45.56%
Spire Inc.	42.75%	41.09%	42.74%	42.72%	44.98%	44.96%	45.55%	45.94%	43.84%
								Minimum	32.29%
								Maximum	54.54%

Long-Term Debt Ratio

Company	2022Q1	2021Q4	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	Average
Atmos Energy Corporation	46.98%	48.98%	49.63%	48.53%	48.33%	41.54%	42.11%	43.35%	46.18%
New Jersey Resources Corporation	60.29%	61.36%	61.58%	60.08%	58.47%	60.18%	57.81%	50.75%	58.81%
NiSource Inc.	56.19%	57.30%	58.73%	58.64%	60.92%	61.91%	62.98%	60.92%	59.70%
Northwest Natural Holding Company	55.36%	56.85%	55.17%	55.68%	54.83%	56.24%	57.37%	56.32%	55.98%
ONE Gas, Inc.	60.06%	61.05%	61.40%	63.79%	64.00%	42.46%	41.83%	41.92%	54.57%
Spire Inc.	53.27%	54.81%	54.04%	53.07%	50.65%	50.40%	50.91%	50.57%	52.22%
								Minimum	46.18%
								Maximum	59.70%

Source: S&P Global Market Intelligence; S&P Capital IQ; Company Filings

Atmos Energy Corporation
Range of Capital Structures for the Past Eight Quarters for the
Proxy Group of Six Natural Gas Distribution Companies at the Operating Company Level

Common Equity Ratio

Company	2022Q1	2021Q4	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	Average
Atmos Energy Corporation	53.02%	51.02%	51.89%	51.47%	51.67%	58.46%	59.98%	58.78%	54.54%
New Jersey Natural Gas Company	56.38%	54.68%	56.23%	56.62%	55.58%	54.13%	53.10%	57.64%	55.55%
NiSource Inc.	34.40%	33.36%	30.34%	30.46%	33.28%	32.49%	31.01%	33.01%	32.29%
Northwest Natural Gas Company	50.87%	49.78%	49.35%	48.62%	49.01%	47.66%	46.76%	47.79%	48.73%
ONE Gas, Inc.	39.94%	38.95%	38.60%	36.21%	36.00%	58.53%	58.17%	58.08%	45.56%
Spire Alabama Inc.	62.05%	60.63%	58.66%	59.08%	59.05%	57.75%	64.35%	64.75%	60.79%
Spire Missouri Inc.	51.59%	49.79%	54.11%	54.26%	59.20%	57.73%	56.79%	56.78%	55.03%
								Minimum	32.29%
								Maximum	60.79%

Long-Term Debt Ratio

Company	2022Q1	2021Q4	2021Q3	2021Q2	2021Q1	2020Q4	2020Q3	2020Q2	Average
Atmos Energy Corporation	46.98%	48.98%	49.63%	48.53%	48.33%	41.54%	42.11%	43.35%	46.18%
New Jersey Natural Gas Company	43.62%	45.32%	43.77%	43.38%	44.42%	45.87%	46.92%	42.36%	44.46%
NiSource Inc.	56.19%	57.30%	58.73%	58.64%	60.92%	61.91%	62.98%	60.92%	59.70%
Northwest Natural Gas Company	53.13%	54.33%	55.43%	55.93%	55.53%	57.00%	57.99%	56.82%	55.77%
ONE Gas, Inc.	60.06%	61.05%	61.40%	63.79%	64.00%	42.46%	41.83%	41.92%	54.57%
Spire Alabama Inc.	37.95%	39.37%	41.65%	40.92%	40.95%	42.25%	36.15%	35.77%	39.38%
Spire Missouri Inc.	48.41%	50.21%	45.94%	45.74%	40.80%	42.27%	43.28%	43.29%	44.99%
								Minimum	39.38%
								Maximum	59.70%

Source: S&P Global Market Intelligence; S&P Capital IQ; Company Filings

Atmos Energy Corporation
Constant Growth Discounted Cash Flow Model

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Mean ROE
Atmos Energy Corporation	ATO	$2.72	$115.21	2.36%	2.45%	7.30%	8.61%	7.50%	7.80%	10.26%
New Jersey Resources Corporation	NJR	$1.45	$44.85	3.23%	3.32%	6.00%	6.00%	5.00%	5.67%	8.99%
NiSource Inc.	NI	$0.94	$30.37	3.09%	3.22%	7.20%	7.18%	9.50%	7.96%	11.18%
Northwest Natural Holding Company	NWN	$1.93	$50.78	3.80%	3.91%	4.70%	5.90%	6.50%	5.70%	9.61%
ONE Gas, Inc.	OGS	$2.48	$86.52	2.87%	2.95%	5.00%	5.00%	6.50%	5.50%	8.45%
Spire Inc.	SR	$2.74	$75.71	3.62%	3.73%	5.00%	4.30%	9.00%	6.10%	9.83%
Mean				3.16%	3.26%	5.87%	6.17%	7.33%	6.46%	9.72%
Median				3.16%	3.27%	5.50%	5.95%	7.00%	5.90%	9.72%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-trading day average as of May 31, 2022
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average([5], [6], [7])
[9] Equals [4] + [8]

Atmos Energy Corporation
Capital Asset Pricing Model

Company	Ticker	[1] Average Beta Coefficient	[2] Average Market Return	[3] Current Risk-Free Rate	[4] Market Risk Premium	[5] CAPM	[6] ECAPM	[7] Average
Atmos Energy Corporation	ATO	0.74	14.50%	3.02%	11.48%	11.47%	12.22%	11.85%
New Jersey Resources Corporation	NJR	0.84	14.50%	3.02%	11.48%	12.68%	13.14%	12.91%
NiSource Inc.	NI	0.75	14.50%	3.02%	11.48%	11.59%	12.31%	11.95%
Northwest Natural Holding Company	NWN	0.71	14.50%	3.02%	11.48%	11.21%	12.03%	11.62%
ONE Gas, Inc.	OGS	0.74	14.50%	3.02%	11.48%	11.54%	12.28%	11.91%
Spire Inc.	SR	0.75	14.50%	3.02%	11.48%	11.61%	12.33%	11.97%
Mean						11.68%	12.39%	12.04%
Median						11.57%	12.30%	11.93%

Company	Ticker	Average Beta Coefficient	Average Market Return	Projected Risk-Free Rate	Market Risk Premium	CAPM	ECAPM	Average
Atmos Energy Corporation	ATO	0.74	14.50%	3.51%	10.99%	11.60%	12.32%	11.96%
New Jersey Resources Corporation	NJR	0.84	14.50%	3.51%	10.99%	12.76%	13.20%	12.98%
NiSource Inc.	NI	0.75	14.50%	3.51%	10.99%	11.71%	12.41%	12.06%
Northwest Natural Holding Company	NWN	0.71	14.50%	3.51%	10.99%	11.35%	12.14%	11.75%
ONE Gas, Inc.	OGS	0.74	14.50%	3.51%	10.99%	11.67%	12.38%	12.02%
Spire Inc.	SR	0.75	14.50%	3.51%	10.99%	11.73%	12.42%	12.08%
Mean						11.80%	12.48%	12.14%
Median						11.69%	12.39%	12.04%

Notes:
[1] Source: Page 3 of this Exhibit
[2] Source: Page 2 of this Exhibit
[3] Current: 30-day average 30-year Treasury yield as of May 31, 2022 from Bloomberg Professional;
Projected: *Blue Chip Financial Forecats* Vol. 41, No. 6, June 1, 2022 at 2 and 14
for the six quarters ending Q3 2023 and the periods 2024-2028 and 2029-2033, respectively.
[4] Equals [2] - [3]
[5] Equals [4] x [1] + [3]
[6] Equals (([4] x [1]) x 0.75) + ([4] x 0.25)) + [3]
[7] = Average [5], [6]

Atmos Energy Corporation
Market Returns

Expectational Market Returns		
Market DCF - Bloomberg	12.35%	[1]
Market DCF - Value Line	16.29%	[2]
Market DCF - Value Line Summary & Index	14.85%	[3]
Average Market Return	14.50%	

Notes:

[1] Based on the application of a market capitalization weighted Constant Growth DCF to the individual companies within the S&P 500 using data from Bloomberg Professional.
[2] Based on the application of a market capitalization weighted Constant Growth DCF to the individual companies within the S&P 500 using data from Value Line.
[3] Based on the application of the average three- to five-year median market price appreciation by Value Line for the seven weeks ended June 3, 2022 plus an average of the median estimated dividend yield of the 1,700 firms covered by Value Line Standard Edition.

Atmos Energy Corporation
Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1] Bloomberg	[2] Value Line
Atmos Energy Corporation	ATO	0.67	0.80
New Jersey Resources Corporation	NJR	0.73	0.95
NiSource Inc.	NI	0.64	0.85
Northwest Natural Holding Company	NWN	0.63	0.80
ONE Gas, Inc.	OGS	0.69	0.80
Spire Inc.	SR	0.70	0.80
Mean		0.68	0.83

Notes:
[1] Source: Bloomberg Professional
[2] Source: Value Line

Atmos Energy Corporation
Risk Premium Summary

	Current Moody's Utility Bond Yield	Projected Moody's Utility Bond Yield	
Average Equity Risk Premium	5.75%	5.30%	[1]
Utility Bond Yield	4.67%	5.32%	[2]
Return on Equity	10.42%	10.61%	
Average	10.52%		

Notes:
[1] Page 2 of this Exhibit.
[2] Page 3 of this Exhibit; Columns [3], [9].

Atmos Energy Corporation
Summary of Equity Risk Premium Estimates

Equity Risk Premium	Current Moody's Utility Bond Yield	Projected Moody's Utility Bond Yield	
Predicted Risk Premium Based on the S&P 500 Utilities Index	6.21%	5.61%	[1]
Predicted Risk Premium Based on Regression Analysis of Natural Gas Utility Rates Cases 1980 - 2022	5.30%	4.98%	[2]
Average	5.75%	5.30%	

Notes:
[1] Page 6 of this Exhibit.
[2] Page 9 of this Exhibit.

Atmos Energy Corporation
Moody's Bond Yields

[1] Moody's Aaa2 Corporate Bond Yield	[2] Moody's Aa2 Utility Bond Yield	[3] Moody's A2 Utility Bond Yield	[4] Moody's Baa2 Utility Bond Yield
4.08%	4.47%	4.67%	4.99%

	[5] Moody's A2 Utility/Aaa2 Corporate Spread	[6] Moody's A2 Utility/Aa2 Utility Spread	[7] Moody's Baa2 Utility/A2 Utility Spread
	0.59%	0.20%	0.32%

[8] Projected Moody's Aaa2 Corporate Bond Yield	[9] Projected Moody's A2 Utility Bond Yield	[10] Current Moody's A3 Utility Bond Yield	[11] Projected Moody's A3 Utility Bond Yield
4.73%	5.32%	4.78%	5.42%

Notes:

[1] Source: Bloomberg Professional; 30-Day Average as of May 31, 2022
[2] Source: Bloomberg Professional; 30-Day Average as of May 31, 2022
[3] Source: Bloomberg Professional; 30-Day Average as of May 31, 2022
[4] Source: Bloomberg Professional; 30-Day Average as of May 31, 2022
[5] = [3] - [1]
[6] = [3] - [2]
[7] = [4] - [3]
[8] *Blue Chip Financial Forecasts* , Vol. 41, No. 6, June 1, 2022 at 2 and 14 for the six quarters ending Q3 2023 and the periods 2024-2028 and 2029-2033, respectively.
[9] = [8] + [5]
[10] = [3] + [7] / 3
[11] = [9] + [7] / 3

Atmos Energy Corporation
Moody's and S&P Proxy Group Long-Term Credit Ratings

Company	Ticker	Moody's [1]	Numerical Weighting [2]	S&P [1]	Numerical Weighting [2]
Atmos Energy Corporation	ATO	A1	5.0	A-	7.0
New Jersey Resources Corporation	NJR	A1	5.0	NR	NA
NiSource Inc.	NI	Baa1	8.0	BBB+	8.0
Northwest Natural Holding Company	NWN	Baa1	8.0	A+	5.0
ONE Gas, Inc.	OGS	A3	7.0	BBB+	8.0
Spire Inc.	SR	A1/A2	5.5	A-	7.0
Proxy Rating		A2	6.4	A-	7.00

Notes:
[1] Source: S&P Global Market Intelligence; Moody's Investor Services
Ratings are the average of each company's utility operating subsidiaries
[2] From page 5 of this Exhibit

Numerical Assignment for Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Atmos Energy Corporation
Summary of Equity Risk Premium Estimates Based on the S&P Utilities Index

Equity Risk Premium	Current Moody's Utility Bond Yield	Projected Moody's Utility Bond Yield	
Predicted Risk Premium Based on Constant Growth DCF Applied to S&P 500 Utilities Index	5.45%	4.80%	[1]
Predicted Risk Premium Based on CAPM Applied to S&P 500 Utilities Index	7.17%	6.63%	[2]
Average	6.31%	5.72%	
Adjusted to Reflect Proxy Group Moody's A2 Utility Bond Rating	-0.11%	-0.11%	[3]
S&P Utilities Index Derived Risk Premium Applicable to the Utility Proxy Group	6.21%	5.61%	

Notes:
[1] Page 7 of this Exhibit
[2] Page 8 of this Exhibit
[3] Adjustment to reflect the A2 rating of the Utility Proxy Group relative to the A3 rating of the S&P 500 Utilities Index. Calculated as 1/3rd of the spread between Moody's A2 and Baa2 Utility Bond (1/3 * 0.32% = 0.11%) as shown in Column [7] of page 3 of this Exhibit.

Atmos Energy Corporation
S&P 500 Utilities Index DCF-Derived Equity Risk Premium

Expected Return		
S&P 500 Utilities Index DCF - Bloomberg	9.88%	[1]
S&P 500 Utilities Index DCF - Value Line	10.58%	[2]
Average	10.23%	[3]
Current Moody's A3 Utility Bond Yield	4.78%	[4]
Projected Moody's A3 Utility Bond Yield	5.42%	[5]
Risk Premium over Current Moody's A3 Utility Bond Yield	5.45%	[6]
Risk Premium over Projected Moody's A3 Utility Bond Yield	4.80%	[7]

Notes:
[1] Based on the application of a market capitalization weighted Constant Growth DCF to the individual companies within the S&P 500 Utilities Index using data from Bloomberg Professional.
[2] Based on the application of a market capitalization weighted Constant Growth DCF to the individual companies within the S&P 500 Utilities Index using data from Value Line.
[3] Average of [1], [2]
[4] From page 3 of this Exhibit; Column [10]
[5] From page 3 of this Exhibit; Column [11]
[6] = [3] - [4]
[7] = [3] - [5]

Atmos Energy Corporation
S&P 500 Utilities Capital Asset Pricing Model Dervied Equity Risk Premium

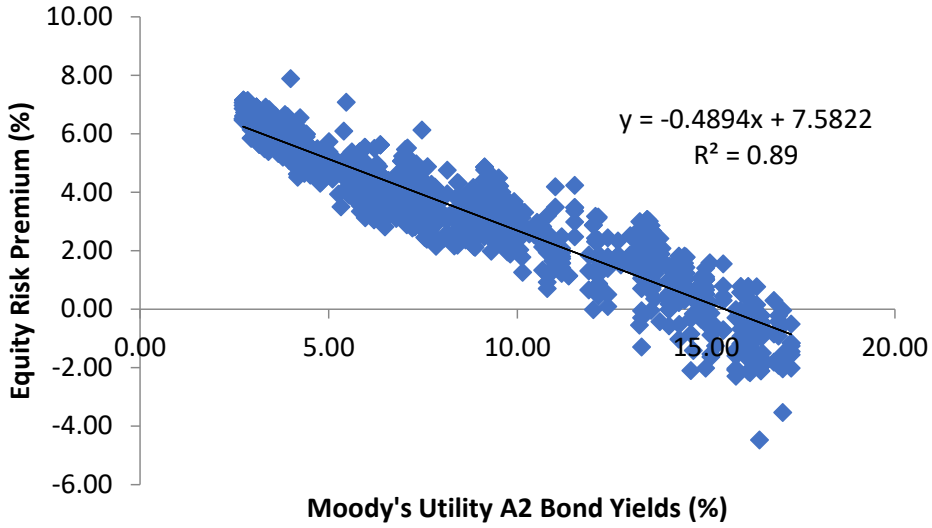
Company	[1] Average Beta Coefficient	[2] Average Market Return	[3] Risk-Free Rate	[4] Market Risk Premium	[5] Expected Return on the S&P Utilities Index Based on CAPM	[6] Expected Return on the S&P Utilities Index Based on ECAPM	[7] Average
S&P500 Utilities Index - Current Risk-Free Rate	0.75	14.50%	3.02%	11.48%	11.58%	12.31%	11.95%
S&P 500 Utilities Index - Projected Risk-Free Rate	0.75	14.50%	3.51%	10.99%	11.71%	12.41%	12.06%

Current Moody's A3 Utility Bond Yield	4.78%	[8]
Projected Moody's A3 Utility Bond Yield	5.42%	[9]
Risk Premium over Current Moody's A3 Utility Bond Yield	7.17%	[10]
Risk Premium over Projected Moody's A3 Utility Bond Yield	6.63%	[11]

Notes:

[1] Average of Weighted Beta coefficients for the S&P 500 Utilities Index based on data from Bloomberg Professional and Value Line.
[2] Source: Page 2 of Exhibit MRH-4
[3] Source: Page 1 of Exhibit MRH-4
[4] Equals [2] - [3]
[5] Equals [4] x [1] + [3]
[6] Equals (([4] x [1]) x 0.75) + ([4] x 0.25)) + [3]
[7] Average [5], [6]
[8] Page 3 of this Exhibit; Column [10]
[9] Page 3 of this Exhibit; Column [11]
[10] = Average expected return on the S&P 500 Utilities Index ([7]) based on current risk-free rate minus current Moody's A3 utility bond yield ([8]).
[11] = Average expected return on the S&P 500 Utilities Index ([7]) based on projected risk-free rate minus projected Moody's A3 utility bond yield ([9]).

Atmos Energy Corporation
Risk Premium Based on Authorized Returns 1980 - 2022



	[1] Constant	[2] Slope	[3] Moody's A2 Utility Bond Yield	[4] Equity Risk Premium
Current Moody's A2 Utility Bond Yield	7.5822 %	-0.4894 %	4.67 %	5.30 %
Projected Moody's A2 Utility Bond Yield	7.5822 %	-0.4894 %	5.32 %	4.98 %

Notes:

[1] Constant derived from a linear regression of equity risk premiums and monthly Moody's A2 utility bond yields; equity risk premium calculated as authorized ROEs for natural gas distribution utilities less monthly Moody's A2 utility bond yields available on date of order.

[2] Slope derived from a linear regression of equity risk premiums and monthly Moody's A2 utility bond yields; equity risk premium calculated as authorized ROEs for natural gas distribution utilities less monthly Moody's A2 utility bond yields available on date of order.

[3] Source: Page 3 of this Exhibit; Columns [3], [9]

[4] = [1] + ([2] x [3])

Source: Regulatory Research Associates

Atmos Energy Corporation
Small Size Premium

	[1] ($Mil)
Atmos Energy Corporation	$172.8
Average Market to Book for Utility Proxy Group	1.88
Atmos Energy Corporation Implied Market Cap	$324.0

Company Name	Ticker	[2] Market Cap ($Mil)	[3] Market to Book Ratio
Atmos Energy Corporation	ATO	$16,016.1	1.82
New Jersey Resources Corporation	NJR	$4,311.1	2.45
NiSource Inc.	NI	$12,325.5	2.22
Northwest Natural Holding Company	NWN	$1,739.4	1.64
ONE Gas, Inc.	OGS	$4,680.1	1.93
Spire Inc.	SR	$3,946.0	1.56
Median		$4,495.61	1.88

	Market Capitalization ($Mil) [4]		
Decile	Low	High	Size Premium
1	$ 36,160.584	$ 2,324,390.219	-0.22%
2	$ 16,759.390	$ 36,099.221	0.43%
3	$ 8,216.356	$ 16,738.364	0.55%
4	$ 5,019.883	$ 8,212.638	0.54%
5	$ 3,281.009	$ 5,003.747	0.89%
6	$ 2,170.315	$ 3,276.553	1.18%
7	$ 1,306.402	$ 2,164.524	1.34%
8	$ 629.118	$ 1,306.038	1.21%
9	$ 290.002	$ 627.803	2.10%
10	$ 10.588	$ 289.007	4.80%
Proxy Group		$ 4,495.606	0.89%
9th Decile Size Premium		$ 324.047	2.10%
Difference from Proxy Group			1.21%

Notes:
[1] Rate Base as of Test Year Ended March 31, 2022 multiplied by proposed common equity ratio.
[2] Source: S&P Capital IQ, 30-day average
[3] Source: S&P Capital IQ, 30-day average
[4] Source: Duff & Phelps (Kroll) 2022 Cost of Capital Navigator

Atmos Energy Corporation
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances and Flotation Costs for FY 2016 - 2022

		[Column 1]	[Column 2]	[Column 3]	[Column 4]	[Column 5]	[Column 6]	[Column 7]
Fiscal Year	Transaction (1)	Shares Issued	Average Offering Price per Share (2)	Net Proceeds per Share (3)	Gross Equity Issue before Costs	Total Net Proceeds	Total Flotation Costs (4)	Flotation Cost Percentage (5)
2022	At the Market Equity Offering	6,162,269	$ 98.0985	$ 96.5572	$ 604,509,329	$ 595,011,373	$ 9,497,956	1.57%
2021	At the Market Equity Offering	6,130,875	$ 101.5775	$ 99.0072	$ 622,758,775	$ 607,000,833	$ 15,757,941	2.53%
2020	At the Market Equity Offering	6,101,916	NA	NA	$ 632,630,269	$ 625,894,599	$ 6,735,669	1.06%
2019	At the Market Equity Offering	5,390,836	$ 92.7500	$ 91.6555	$ 500,000,000	$ 494,100,000	$ 5,900,000	1.18%
2018	At the Market Equity Offering	4,558,404	$ 87.7500	$ 86.6751	$ 400,000,000	$ 395,100,000	$ 4,900,000	1.23%
2017	At the Market Equity Offering	1,303,494	$ 76.7169	$ 75.7963	$ 100,000,000	$ 98,800,000	$ 1,200,000	1.20%
2016	At the Market Equity Offering	1,360,756	$ 73.4886	$ 72.4597	$ 100,000,000	$ 98,600,000	$ 1,400,000	1.40%
					$ 2,959,898,372	$ 2,914,506,806	$ 45,391,566	1.53%

Flotation Cost Adjustment

	Average Dividend Yield	Average Projected EPS Growth Rate (6)	Adjusted Dividend Yield (6)	Average DCF Cost Rate Unadjusted for Flotation (5)	DCF Cost Rate Adjusted for Flotation (7)	Flotation Cost Adjustment (8)
Proxy Group of Six Natural Gas Distribution Companies	3.16 %	6.46 %	3.26 %	9.72 %	9.77 %	0.05 %

See page 2 of this Exhibit for notes.

Source of Information: Atmos Energy Corporation SEC Filings, Company-Provided Data

Atmos Energy Corporation
Notes to Accompany the
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

(1) Atmos Energy Corporation SEC Filings, Company-provided.

(2) Column 4 ÷ Column 1.

(3) Column 5 ÷ Column 1.

(4) Column 4 - Column 5.

(5) Column 6 ÷ Column 4.

(6) Using the average growth rate from Exhibit MRH-3.

(7) Adjustment for flotation costs based on adjusting the average DCF constant growth cost rate in accordance with the following:

$$K = \frac{D(1+0.5g)}{P(1-F)} + g,$$

where g is the growth factor and F is the percentage of flotation costs.

(8) Flotation cost adjustment of 0.05% equals the difference between the flotation adjusted average DCF cost rate of 9.77% and the unadjusted average DCF cost rate of 9.72% of the Utility Proxy Group.

Sources of Information:

Company SEC Filings; Company-Provided