BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION	**)**	
OF NEW MEXICO GAS COMPANY, INC.	**)**	
FOR APPROVAL OF REVISIONS TO ITS	**)**	
RATES, RULES, AND CHARGES PURSUANT	**)**	
TO ADVICE NOTICE NO. 96	**)**	**Case No. 23- 00255UT**
	)	
NEW MEXICO GAS COMPANY, INC.	**)**	
	)	
Applicant.	**)**	

DIRECT TESTIMONY AND EXHIBIT

OF

DYLAN W. D'ASCENDIS

September 14, 2023

DIRECT TESTIMONY OF
DYLAN W. D'ASCENDIS
NMPRC CASE NO. 23-00255-UT

TABLE OF CONTENTS

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I. INTRODUCTION

A. Witness Identification

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Dylan W. D'Ascendis. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054.

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

A. I am a Partner at ScottMadden, Inc.

B. Background and Qualifications

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I have offered expert testimony on behalf of investor-owned utilities in over 35 state regulatory commissions in the United States, the Federal Energy Regulatory Commission, the Alberta Utility Commission, one American Arbitration Association panel, and the Superior Court of Rhode Island on issues including, but not limited to, common equity cost rate, rate of return, valuation, capital structure, class cost of service, and rate design.

On behalf of the American Gas Association ("AGA"), I calculate 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.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, 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 am also a member of the National Association of Certified Valuation Analysts ("NACVA") and was awarded the professional designation "Certified Valuation Analyst" by the NACVA in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are included in Appendix A.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to present evidence on behalf of New Mexico Gas Company, Inc. ("NMGC" or the "Company") regarding the appropriate rate of return on common equity ("ROE") for the Company's jurisdictional rate base. I also evaluate the reasonableness of the Company's requested capital structure.

Q. HAVE YOU PREPARED AN EXHIBIT IN SUPPORT OF YOUR RECOMMENDATION?

A. Yes. I have prepared NMGC Exhibit DWD-1, which consists of Schedules DWD-1 through DWD-9.

Q. ARE YOU SPONSORING ANY OF THE INFORMATION REQUIRED UNDER 17.10.630 NMAC?

A. Yes, I am sponsoring the information contained in Schedule G-10 – Summary of Requested Rate of Return.

III. SUMMARY

Q. WHAT ARE YOUR RECOMMENDATIONS?

A. I recommend that the New Mexico Public Regulation Commission ("NMPRC" or the "Commission") authorize NMGC the opportunity to earn a weighted average cost of capital ("WACC") of 7.38% on its jurisdictional rate base. I recommend that the Commission approve the Company's requested capital structure which consists of 47.00% long-term debt and 53.00% common equity, as it is consistent with current and expected capital structures maintained by the Proxy Group of Natural Gas Utility companies comparable in risk to NMGC ("Utility Proxy Group") and their operating subsidiaries. The 3.86% cost of long-term debt for the Company is their 13-month average cost of debt at the end of the future test year in accordance with Commission rules. My recommended ROE for the Company is 10.50%, as will be discussed in detail below. The summary of the Company's requested WACC are shown on page 1 of Schedule DWD-1, and on Table 1, below.

Table 1: Summary of Recommended Weighted Average Cost of Capital for NMGC

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	47.00%	3.86%	1.81%
Common Equity	53.00%	10.50%	5.57%
Total	100.00%		7.38%

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY COST RATE.

A. My recommended ROE of 10.50% applicable to NMGC is summarized on page 2 of Schedule DWD-1. I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical, risk to the Company. Using companies of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the *Hope*[1] and *Bluefield*[2] decisions. No proxy group can be <u>identical</u> in risk to any single company. Consequently, there must be an evaluation of relative risk between the Company and a proxy group to determine if it is appropriate to adjust the proxy group's indicated rate of return.

My recommendation results from applying several cost of common equity models, specifically the Discounted Cash Flow ("DCF") model, the Risk Premium Model ("RPM"), and the Capital Asset Pricing Model ("CAPM"), to the market data of the Utility Proxy Group whose selection criteria will be discussed below. In addition, I applied the DCF model, RPM, and CAPM to a proxy group of domestic, non-price regulated companies comparable in total risk to the Utility Proxy Group ("Non-Price Regulated Proxy Group"). The results derived from each are as follows:

1 *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944)*("Hope").*

2 *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1922).

Table 2: Summary of Common Equity Cost Rates

Discounted Cash Flow Model (DCF)	9.65%
Risk Premium Model (RPM)	10.85%
Capital Asset Pricing Model (CAPM)	11.69%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	12.15%
Indicated Range of Common Equity Cost Rates Before Adjustments	9.65% - 12.15%
Business Risk Adjustment	0.20%
Credit Risk Adjustment	0.23%
Flotation Cost Adjustment	0.09%
Recommended Range	10.17% - 12.67%
Recommended Cost of Equity Cost Rate	10.50%

The indicated ranges of common equity cost rates applicable to the Utility Proxy Group was between 9.65% and 12.15% before any Company-specific adjustments. The indicated range of ROEs applicable to the Utility Proxy Group was then adjusted upward by 0.20%, 0.23%, and 0.09% to reflect the Company's smaller relative size, greater relative credit risk, and flotation costs, respectively. These adjustments resulted in a Company-specific range of ROEs from 10.17% to 12.67%. Given the indicated range of common equity cost rates for the Company, I recommend the Commission to approve a common equity cost rate of 10.50% for NMGC in this proceeding, which is both reasonable and conservative.

Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

A. The remainder of my Direct Testimony is organized as follows:

- Section IV – Provides a summary of financial theory and regulatory principles pertinent to the development of the cost of common equity;
- Section V – Explains my selection of the Utility Proxy Group used to develop my cost of common equity analytical results;
- Section VI – Explains the reasonableness of the proposed capital structure;
- Section VII – Describes the analyses on which my cost of common equity recommendation is based;
- Section VIII – Summarizes my common equity cost rate before adjustments to reflect Company-specific factors;
- Section IX – Explains my adjustments to my common equity cost rate to reflect Company-specific factors; and
- Section X – Presents my conclusions.

IV. GENERAL PRINCIPLES

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. In unregulated industries, marketplace competition is the principal determinant of the price of products or services. For regulated public utilities, regulation must act as a substitute for marketplace competition. Assuring that the utility can fulfill its obligations to the public, while providing safe and reliable service at all times, requires a level of earnings sufficient to maintain the integrity of presently invested capital. Sufficient earnings also permit the attraction of needed new capital at a reasonable cost, for which the utility must compete with other firms of comparable risk, consistent with the fair rate of return standards established by the U.S. Supreme Court in the previously cited *Hope* and *Bluefield* cases. The U.S. Supreme Court affirmed the fair rate of return standards in *Hope*, when it stated:

> 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 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.[3]

In summary, the U.S. Supreme Court has found a return that is adequate to attract capital at reasonable terms enables the utility to provide service while maintaining its financial integrity. As discussed above, and in keeping with established regulatory standards, that return should be commensurate with the returns expected

[3] *Hope*, 320 U.S. 591 (1944), at 603.

elsewhere for investments of equivalent risk. Therefore, the Commission's decision in this proceeding should provide the Company with the opportunity to earn a return that is: (1) adequate to attract capital at a reasonable cost and terms; (2) sufficient to ensure their financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks.

Lastly, the required return for a regulated public utility is established on a stand-alone basis, i.e., for the utility operating company at issue in a rate case. Parent entities, like other investors, have capital constraints and must look at the attractiveness of the expected risk-adjusted return of each investment alternative in their capital budgeting process. That is, utility holding companies that own many utility operating companies have choices as to where they will invest their capital within the holding company family. Therefore, the opportunity cost concept applies regardless of the source of the funding, whether it be public funding or corporate funding.

When funding is provided by a parent entity, the return still must be sufficient to provide an incentive to allocate equity capital to the subsidiary or business unit rather than other internal or external investment opportunities. That is, the regulated subsidiary must compete for capital with all the parent company's affiliates, and with other, similarly situated companies. In that regard, investors value corporate entities on a sum-of-the-parts basis and expect each division within the parent company to provide an appropriate risk-adjusted return.

It therefore is important that the authorized ROE reflects the risks and prospects of the utility's operations and supports the utility's financial integrity from a stand-alone perspective, as measured by its combined business and financial risks. Consequently, the ROE authorized in this proceeding should be sufficient to support the operational (i.e., business risk) and financing (i.e., financial risk) of the Company on a stand-alone basis.

Q. WITHIN THAT BROAD FRAMEWORK, HOW IS THE COST OF CAPITAL ESTIMATED IN REGULATORY PROCEEDINGS?

A. Regulated utilities primarily use common stock and long-term debt to finance their permanent property, plant, and equipment (i.e., rate base). The fair rate of return for a regulated utility is based on its weighted average cost of capital, in which, as noted earlier, the costs of the individual sources of capital are weighted by their respective book values with appropriate adjustments.

The cost of capital is the return investors require to make an investment in a firm. Investors will provide funds to a firm only if the return that they *expect* is equal to, or greater than, the return that they *require* to accept the risk of providing funds to the firm.

The cost of capital (that is, the combination of the costs of debt and equity) is based on the economic principle of "opportunity costs." Investing in any asset (whether debt or equity securities) represents a forgone opportunity to invest in alternative assets. For any investment to be sensible, its expected return must be at least equal to the return expected on alternative, comparable risk investment opportunities. Because investments with like risks should offer similar returns, the opportunity cost of an investment should equal the return available on an investment of comparable risk.

Whereas the cost of debt is contractually defined and can be directly observed as the interest rate or yield on debt securities, the cost of common equity must be estimated based on market data and various financial models. Because the cost of common equity is premised on opportunity costs, the models used to determine it are typically applied to a group of "comparable" or "proxy" companies.

In the end, the estimated cost of capital should reflect the return that investors require in light of the subject company's business and financial risks, and the returns available on comparable investments.

Q. IS THE AUTHORIZED RETURN SET IN REGULATORY PROCEEDINGS GUARANTEED?

A. No, it is not. Consistent with the *Hope* and *Bluefield* standards, the ratemaking process should provide the utility a reasonable opportunity to recover its return of, and return on, its reasonably incurred investments, but it does not guarantee that return. While a utility may have control over some factors that affect the ability to earn its authorized return (e.g., management performance, operating and maintenance expenses, etc.), there are several factors beyond a utility's control that affect its ability to earn its authorized return. Those may include factors such as weather, the economy, and the prevalence and magnitude of regulatory lag.

A. <u>Business Risk</u>

Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT FOR DETERMINING A FAIR RATE OF RETURN.

A. The investor-required return on common equity reflects investors' assessment of the total investment risk of the subject firm. Total investment risk is often discussed in the context of business and financial risk.

Business risk reflects the uncertainty associated with owning a company's common stock without the company's use of debt and/or preferred stock financing. One way of considering the distinction between business and financial risk is to view the former as the uncertainty of the expected earned return on common equity, assuming the firm is financed with no debt.

Examples of business risks <u>generally</u> faced by utilities include, but are not limited to, the regulatory environment, mandatory environmental compliance requirements, customer mix and concentration of customers, service territory economic conditions, market demand, risks and uncertainties of supply, operations, capital intensity, size, the degree of operating leverage, emerging technologies including distributed energy resources, and the vagaries of weather.

Although analysts, including rating agencies, may categorize business risks individually, as a practical matter, such risks are interrelated and not wholly distinct from one another. When determining an appropriate return on common equity, the relevant issue is where investors see the subject company in relation to other similarly situated utility companies (i.e., the Utility Proxy Group). To the extent investors view a company as being exposed to higher risk, the required return will increase, and vice versa.

For regulated utilities, business risks are both long-term and near-term in nature. Whereas near-term business risks are reflected in year-to-year variability in earnings and cash flow brought about by economic or regulatory factors, long-term business risks reflect the prospect of an impaired ability of investors to obtain both a fair rate of return on, and return of, their capital. Moreover, because utilities accept the obligation to provide safe, adequate, and reliable service at all times (in exchange for the opportunity to earn a fair return on their investment), they generally do not have the option to delay, defer, or reject capital investments. Because those investments are capital-intensive, utilities generally do not have the option to avoid raising external funds during periods of capital market distress, if necessary.

Because utilities invest in long-lived assets, long-term business risks are of paramount concern to equity investors. That is, the risk of not recovering the return on their investment extends far into the future. The timing and nature of events that may lead to losses, however, also are uncertain and, consequently, those risks and their implications for the required return on equity tend to be difficult to quantify. Regulatory commissions (like investors who commit their capital) must review a variety of quantitative and qualitative data and apply their reasoned judgment to determine how long-term risks weigh in their assessment of the market-required return on common equity.

B. <u>Financial Risk</u>

Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT IN DETERMINING A FAIR RATE OF RETURN.

A. Financial risk is the additional risk created by the introduction of debt and preferred stock into the capital structure. The higher the proportion of debt and preferred stock in the capital structure, the higher the financial risk to common equity owners (i.e., failure to receive dividends due to default or other covenants). Therefore, consistent with the basic financial principle of risk and return, common equity investors demand higher returns as compensation for bearing higher financial risk.

Q. CAN BOND AND CREDIT RATINGS BE A PROXY FOR A FIRM'S COMBINED BUSINESS AND FINANCIAL RISKS TO EQUITY OWNERS (I.E., INVESTMENT RISK)?

A. Yes, similar bond ratings/issuer credit ratings reflect, and are representative of, similar combined business and financial risks (i.e., total risk) faced by bond investors. Although specific business or financial risks may differ between companies, the same bond/credit rating indicates that the combined risks are roughly similar from a debtholder perspective. The caveat is that these debtholder risk measures do not translate directly to risks for common equity.

V. NEW MEXICO GAS COMPANY AND THE UTILITY PROXY GROUP

Q. PLEASE SUMMARIZE YOUR KNOWLEDGE OF NMGC.

A. Based in Albuquerque, NMGC functions as a natural gas distribution utility and as a natural gas transmission utility. NMGC maintains 12,000 miles of natural gas pipeline to provide service to more than 545,000 residential, commercial and transportation customers. Strategically situated between two large natural gas production basins, the Company's service area encompasses 60% of the population of New Mexico. The Company has a BBB+ long-term issuer rating from Fitch Ratings and is not rated by Moody's Investor Services ("Moody's") or Standard & Poor's ("S&P"). The Company is not publicly traded as it is an operating subsidiary of Emera, Inc. Emera, Inc. is publicly traded under ticker symbol "EMA.TO".

Q. WHY IS IT NECESSARY TO DEVELOP A PROXY GROUP WHEN ESTIMATING THE ROE FOR THE COMPANY?

A. Because the Company is not publicly traded and does not have publicly traded equity securities, it is necessary to develop groups of publicly traded, comparable companies to serve as "proxies" for the Company. In addition to the analytical necessity of doing so, the use of proxy companies is consistent with the *Hope* and *Bluefield* comparable risk standards, as discussed above. I have selected two proxy groups that, in my view, are fundamentally risk-comparable to the Company: a Utility Proxy Group, and a Non-Price Regulated Proxy Group, that is comparable in total risk to the Utility Proxy Group.[4]

Even when proxy groups are carefully selected, it is common for analytical results to vary from company to company. Despite the care taken to ensure comparability, because no two companies are identical, market expectations regarding future risks and prospects will vary within the proxy group. It therefore is common for analytical results to reflect a seemingly wide range, even for a group of similarly situated companies. At issue is how to estimate the ROE from within that range. That determination will be best informed by employing a variety of sound analyses that necessarily must consider the sort of quantitative and qualitative information discussed throughout my Direct Testimony. Additionally, a relative risk analysis between the Company and the Utility Proxy Group must be made to determine whether or not explicit Company-specific adjustments need to be made to the Utility Proxy Group's indicated results.

My analyses are based on the Utility Proxy Group, which is comprised of North American gas distribution utilities. As discussed earlier, utilities must compete for capital with other companies with commensurate risk (including non-utilities) and, to do so, must be provided the opportunity to earn a fair and reasonable return.

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[4] The development of the Non-Price Regulated Proxy Group is explained in more detail in Section VII.

Consequently, it is appropriate to consider the Utility Proxy Group's market data in determining the Company's ROE.

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Q. PLEASE EXPLAIN HOW YOU CHOSE THE COMPANIES IN THE UTILITY PROXY GROUP.

A. The companies selected for the Utility Proxy Group met the following criteria:

(i) They were included in the Natural Gas Utility Group of *Value Line's Standard Edition* ("*Value Line*") (May 26, 2023);

(ii) They have 60% or greater of fiscal year 2022 total operating income derived from, or 60% or greater of fiscal year 2022 total assets attributable to, regulated gas distribution operations;

(iii) At the time of preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (i.e., one publicly-traded utility merging with or acquiring another) or any other major development;

(iv) They have not cut or omitted their common dividends during the five years ended 2022 or through the time of preparation of this testimony;

(v) They have *Value Line* and Bloomberg Professional Services ("Bloomberg") adjusted Beta coefficients ("beta");

(vi) They have positive *Value Line* five-year dividends per share ("DPS") growth rate projections; and

(vii) They have *Value Line*, Zacks, or Yahoo! Finance consensus five-year earnings per share ("EPS") growth rate projections.

The following six companies met these criteria:

Table 3: Utility Proxy Group Companies

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

Q. PLEASE DESCRIBE PAGE 1 OF SCHEDULE DWD-2.

A. Page 1 of Schedule DWD-2 contains comparative capitalization and financial statistics for the Utility Proxy Group identified above for the years 2018 to 2022.

VI. CAPITAL STRUCTURE AND LONG-TERM DEBT COST RATE

Q. WHAT IS THE COMPANY'S REQUESTED RATEMAKING CAPITAL STRUCTURE?

A. As discussed in NMGC Witness Erik C. Buchanan's Testimony, the Company requests the use of an imputed capital structure which consists of 47.00% long-term debt and 53.00% common equity.

Q. DOES NMGC HAVE A SEPARATE CAPITAL STRUCTURE THAT IS RECOGNIZED BY INVESTORS?

A. Yes. NMGC is a separate corporate entity that has its own capital structure and issues its own debt.

Q. WHAT ARE THE TYPICAL SOURCES OF CAPITAL COMMONLY CONSIDERED IN ESTABLISHING A UTILITY'S CAPITAL STRUCTURE?

A. Common equity and long-term debt are commonly considered in establishing a utility's capital structure because they are the typical sources of capital financing a utility's rate base.

Q. PLEASE EXPLAIN.

A. Long-lived assets are typically financed with long-lived securities, so that the overall term structure of the utility's long-term liabilities (both debt and equity) closely match the life of the assets being financed. As stated by Brigham and Houston:

> In practice, firms don't finance each specific asset with a type of capital that has a maturity equal to the asset's life. However, academic studies do show that most firms tend to finance short-term assets from short-term sources and long-term assets from long-term sources.[5]

Whereas short-term debt generally has a maturity of one year or less, long-term debt may have maturities of 30 years or longer. Although there are practical financing constraints, such as the need to "stagger" long-term debt maturities, the general objective is to extend the average life of long-term debt. Still, long-term debt has a finite life, which is likely to be less than the life of the assets included in

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5 Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management, Concise 4th Ed., Thomson South-Western, 2004, at 574.

rate base. Common equity, on the other hand, is outstanding into perpetuity. Thus, common equity more accurately matches the life of the going concern of the utility, which is also assumed to operate in perpetuity. Consequently, it is both typical and important for utilities to have significant proportions of common equity in their capital structures.

Q. WHY IS IT IMPORTANT THAT THE COMPANY'S RECOMMENDED CAPITAL STRUCTURE, CONSISTING OF 47.00% LONG-TERM DEBT AND 53.00% COMMON EQUITY, BE AUTHORIZED IN THIS PROCEEDING?

A. As a preliminary matter, the Company's recommended capital structure is comparable to the capital structures maintained by the Utility Proxy Group companies and their operating subsidiaries.[6] The use of an operating subsidiary's capital structure is consistent with the Federal Energy Regulatory Commission ("FERC") precedent, under which they use the applicant's capital structure, where possible.[7] In particular, the FERC will use the utility operating company's capital structure if it meets three criteria: (1) it issues its own debt without guarantees; (2) it has its own bond rating; and (3) it has a capital structure within the range of capital structures approved by the commission.[8] The Company's requested capital structure meets all of these criteria.

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6 *See,* Schedule DWD-2.

7 *See, Transcontinental Gas Pipe Line Corp,* 80 FERC ¶ 61,157, 61,657 (1997) ("Opinion No. 414").

8 148 FERC ¶ 61,049 Docket No. EL14-12-000, at 190.

In order to provide safe, reliable, and affordable service to its customers, NMGC must meet the needs and serve the interests of its various stakeholders, including customers, shareholders, and bondholders. The interests of these stakeholder groups are aligned with maintaining a healthy balance sheet, strong credit ratings, and a supportive regulatory environment, so that the Company has access to capital on reasonable terms in order to make necessary investments.

Safe and reliable service cannot be maintained at a reasonable cost if utilities do not have the financial flexibility and strength to access competitive financing markets on reasonable terms. As NMGC Witness Erik C. Buchanan explains, an appropriate capital structure is important not only to ensure long-term financial integrity, it also is critical to enabling access to capital during constrained markets, or when near-term liquidity is needed to fund extraordinary requirements. In that important respect, the capital structure, and the financial strength it engenders, must support both normal circumstances and periods of market uncertainty. Safe and reliable service for customers cannot be sustained over the long term if the interests of shareholders and bondholders are minimized such that the public interest is not optimized. Consequently, NMGC's requested capital structure should be used to set rates in this proceeding.

Q. HOW DOES NMGC'S REQUESTED COMMON EQUITY RATIO OF 53.00% COMPARE WITH THE COMMON EQUITY RATIOS MAINTAINED BY THE UTILITY PROXY GROUP?

A. The Company's requested ratemaking common equity ratio of 53.00% is reasonable and consistent with the range of common equity ratios maintained by the Utility Proxy Group. As shown on page 2 of Schedule DWD-2, common equity ratios of the Utility Proxy Group companies range from 34.43% to 62.21% for fiscal year 2022.

I also considered *Value Line* projected capital structures for the utilities for 2026-2028. That analysis shows a range of projected common equity ratios between 40.00% and 60.00%.[9]

In addition to comparing the Company's requested common equity ratio with common equity ratios currently and expected to be maintained by the Utility Proxy Group, I also compared the Company's requested common equity ratio with the equity ratios maintained by the operating subsidiaries of the Utility Proxy Group companies. As shown on page 3 of Schedule DWD-2, common equity ratios of the operating utility subsidiaries of the Utility Proxy Group range from 33.79% to 59.89% for fiscal year end 2022.

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[9] *See*, pages 3 through 8 of Schedule DWD-3.

Q. IN VIEW OF THE ABOVE, IS NMGC'S RECOMMENDED EQUITY RATIO OF 53.00% APPROPRIATE FOR RATEMAKING PURPOSES?

A. Yes, it is. The Company's recommended equity ratio of 53.00% is appropriate for ratemaking purposes in the current proceeding because it issues its own debt without guarantees, it has its own credit rating, and its capital structure is within the range of the common equity ratios currently maintained and expected to be maintained, by the Utility Proxy Group and their operating subsidiaries.

Q. WHAT IS YOUR RECOMMENDED EMBEDDED LONG-TERM DEBT COST RATE FOR THE COMPANY?

A. I recommend the 13-month average embedded long-term debt cost rate of the Company at the end of the future test year, which is 3.86%.

VII. COMMON EQUITY COST RATE MODELS

Q. IS IT IMPORTANT THAT COST OF COMMON EQUITY MODELS BE MARKET-BASED?

A. Yes. As discussed previously, regulated public utilities like NMGC must compete for equity in capital markets along with all other companies with commensurate risk, including non-utilities. The cost of common equity is thus determined based on equity market expectations for the returns of those companies. If an individual investor is choosing to invest their capital among companies with comparable risk, they will choose the company providing a higher return over a company providing a lower return.

Q. ARE YOUR COST OF COMMON EQUITY MODELS MARKET-BASED?

A. Yes. The DCF model is market-based in that market prices are used in developing the dividend yield component of the model. The RPM and CAPM are also market-based in that the bond/issuer ratings and expected bond yields/risk-free rate used in the application of the RPM and CAPM reflect the market's assessment of bond/credit risk. In addition, the use of beta to determine the equity risk premium also reflects the market's assessment of market/systematic risk, as betas are derived from regression analyses of market prices. Moreover, market prices are used in the development of the monthly returns and equity risk premiums used in the Predictive Risk Premium Model ("PRPM"), one of the specific methods used in the RPM analysis. Selection criteria for the Non-Price Regulated Proxy Group are based on regression analyses of market prices and reflect the market's assessment of total risk.

Q. WHAT ANALYTICAL APPROACHES DID YOU USE TO DETERMINE THE COMPANY'S ROE?

A. As discussed earlier, I have relied on the DCF model, the RPM, and the CAPM, which I applied to the Utility Proxy Group described above. I also applied these same models to a Non-Price Regulated Proxy Group described later in this section.

I rely on these models because reasonable investors use a variety of tools and do not rely exclusively on a single source of information or single model. Moreover, the models on which I rely focus on different aspects of return requirements and provide different insights to investors' views of risk and return. The DCF model, for example, estimates the investor-required return assuming a constant expected dividend yield and growth rate in perpetuity, while risk premium-based methods (i.e., the RPM and CAPM approaches) provide the ability to reflect investors' views of risk, future market returns, and the relationship between interest rates and the cost of common equity. Just as the use of market data for the Utility Proxy Group adds the reliability necessary to inform expert judgment in arriving at a recommended common equity cost rate, the use of multiple generally accepted common equity cost rate models also adds reliability and accuracy when arriving at a recommended common equity cost rate.

The use of multiple models also makes intuitive sense when we consider that market prices are set by the buying and selling behavior of multiple investors, whose circumstances, objectives, and constraints vary over time and across market conditions. We cannot assume a single method is the best measure of the factors motivating those decisions for all investors at all times. Giving undue weight to a single method runs the very real risk of ignoring important information provided by other methods.

In other words, no single model is more reliable than all others under all market conditions. Intuition suggests it is more appropriate to use as many methods as we reasonably can and to reflect the many factors motivating investment decisions as best we can. In this instance, intuition, financial theory,[10] and financial practice reach a common conclusion: we should apply and reasonably consider multiple methods when estimating the ROE.

Q. HAS NEW MEXICO NOTED THE IMPORTANCE OF REVIEWING MULTIPLE METHODS IN PRIOR UTILITY PROCEEDINGS?

A. Yes. Although I am not an attorney, I understand that in prior cases, the Supreme Court of New Mexico (the "Court") found that the Commission is not bound to a single method. As the Court noted in *Hobbs Gas*:[11]

> Neither New Mexico case law nor the Public Utility Act imposes any one particular method of valuation upon the Commission in ascertaining the rate base of a utility. *Mountain States Tel. v. New Mexico State Corp.*, 90 N.M. 325, 563 P.2d 588 (1977). Nor does the spirit of the statute tie the Commission down to the consideration of a single factor in establishing rates.[12]

Citing to its decision in *Mountain States Telephone*, the Court further noted that:

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[10] As Brigham explains: "Whereas debt and preferred stocks are contractual obligations which have easily determined costs, it is not at all easy to estimate [the ROE]. However, three methods can be used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) model, and (3) the bond-yield-plus-risk-premium approach. These methods should not be regarded as mutually exclusive – no one dominates the others, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand." Eugene F. Brigham, Louis C. Gapenski, Financial Management, Theory and Practice, 7th ed., The Dryden Press, 1994, at 341.

[11] *Hobbs Gas Co. v. New Mexico Public Service Commission, 94 N.M. 731* (1980).

[12] *Hobbs Gas Co. v. New Mexico Public Service Commission, 94 N.M. 731* (1980), at 4.

> The Commission was not bound to the use of any single formula or combination of formulae in determining rates. The rate-making function involves the making of pragmatic adjustments. It is the result reached, not the method employed, which is controlling. (Citations omitted.)[13]

In *PNM Gas Services*, the Court likewise found that because of the complexity and number of variables at issue in rate proceedings, the Commission is not bound to a single formula. Again, the Court found that "…the rate-making function…involves the making of pragmatic adjustments" and that in the end, "[i]t is the result reached, not the method employed, which is controlling."[14]

Lastly, I understand that in *Zia Natural Gas*, the Court again cited back to *Mountain States Telephone*, noting the importance of the "immediate economic situation":

> [t]his Court can see no reason why it should adopt as the law of this state any single formula which has been evolved out of this history of litigation.... [T]he regulatory authorities seek a formula which will adjust rates to the *immediate economic situation*" (emphasis added).[15]

My plain reading of those decisions suggests that although the Commission historically has put emphasis on the constant growth DCF approach, it is not bound to do so. Equally important, the Court found that the immediate economic situation may call for "pragmatic adjustments" to the method used to establish the ROE, and

[13] *Hobbs Gas Co. v. New Mexico Public Service Commission, 94 N.M. 731* (1980), at 4.
[14] *In re Petition of PNM Gas Services, 129 N.M. 1* (2000), at 10.
[15] *In re Zia Natural Gas Co., 128 N.M. 728* (2000), at 8.

that it is the reasonableness of the ROE itself, rather than the methodology used in its determination, that controls.

A. <u>Discounted Cash Flow Model</u>

Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?

A. The theory underlying the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory indicates that an investor buys a stock for an expected total return rate, which is derived from the cash flows received from dividends and market price appreciation. Mathematically, the dividend yield on market price plus a growth rate equals the capitalization rate; i.e., the total common equity return rate expected by investors.

Q. WHICH VERSION OF THE DCF MODEL DID YOU USE?

A. I used the single-stage constant growth DCF model in my analyses.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN APPLYING THE CONSTANT GROWTH DCF MODEL.

A. The unadjusted dividend yields are based on the proxy companies' dividends as of July 14, 2023, divided by the average closing market price for the 60 trading days ended July 14, 2023.[16]

[16] *See*, Column 1, page 1 of Schedule DWD-3.

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE DIVIDEND YIELD.

A. Because dividends are paid periodically (e.g. quarterly), as opposed to continuously (daily), an adjustment must be made to the dividend yield. This is often referred to as the discrete, or the "Gordon Periodic," version of the DCF model.

DCF theory calls for using the full growth rate, or D_1, in calculating the model's dividend yield component. Because the companies in the Utility Proxy Group increase their quarterly dividends at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the dividend yield component, or $D_{1/2}$. Because the dividend should be representative of the next 12-month period, this adjustment is a conservative approach that does not overstate the dividend yield. Therefore, the actual average dividend yields in Column 1, page 1 of Schedule DWD-3 have been adjusted upward to reflect one-half the average projected growth rate shown in Column 5.

Q. PLEASE EXPLAIN THE BASIS FOR THE GROWTH RATES YOU APPLIED TO THE UTILITY PROXY GROUP IN YOUR CONSTANT GROWTH DCF MODEL.

A. Investors with more limited resources than institutional investors are likely to rely on widely available financial information services, such as *Value Line*, Zacks, and Yahoo! Finance. Investors realize that analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as companies' abilities to effectively manage the effects of changing laws and regulations, and ever-changing economic and market conditions. For these reasons, I used analysts' five-year forecasts of EPS growth in my DCF analysis.

Over the long run, there can be no growth in DPS without growth in EPS. Security analysts' earnings expectations have a more significant influence on market prices than dividend expectations. Thus, using earnings growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth rate component of the DCF.

Q. PLEASE SUMMARIZE THE CONSTANT GROWTH DCF MODEL RESULTS.

A. As shown on page 1 of Schedule DWD-3, for the Utility Proxy Group, the mean result of applying the single-stage DCF model is 9.79%, the median result is 9.50%, and the average of the two is 9.65%. In arriving at a conclusion for the constant growth DCF-indicated common equity cost rate for the Utility Proxy Group, I relied on an average of the mean and the median results of the DCF, or 9.65%. This approach considers all the proxy utilities' results, while mitigating the high and low outliers of those individual results.

Q. DID YOU CONSIDER ANY OTHER CONSTANT GROWTH DCF MODEL RESULTS?

A. Yes, I did. I recognize that in prior orders, the Commission has relied exclusively on a specific form of the constant growth DCF approach ("NM DCF").

Specifically, that form has recently included a 30-day stock price averaging period, a full dividend yield growth rate adjustment, and determined the ROE at the midpoint of the proxy group mean and mean high DCF results. Consistent with the Commission's prior precedent, I have included a NM DCF analysis incorporating the Commission's preferred inputs, as shown on page 2 of Schedule DWD-3.

Q. PLEASE EXPLAIN HOW YOU DETERMINED THE MEAN HIGH DCF RESULTS FOR THE UTILITY PROXY GROUP.

A. For each proxy company, I calculated the high DCF result by applying the highest of the three growth rates to the expected dividend yield. The mean high DCF result for the Utility Proxy Group is the average of the individual company indicated DCF result.

Q. PLEASE SUMMARIZE THE RESULTS OF THE NM DCF.

A. As shown on page 2 of Schedule DWD-3, the NM DCF as applied to the Utility Proxy Group indicated an ROE of 10.33%. While the model is presented in Schedule DWD-3, I do not directly consider the NM DCF results in the calculation of my recommended range of ROEs in this proceeding.

B. <u>The Risk Premium Model</u>

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. The RPM is based on the fundamental financial principle of risk and return; namely, that investors require greater returns for bearing greater risk. The RPM recognizes that common equity capital has greater investment risk than debt capital, as common equity shareholders are behind debt holders in any claim on a company's assets and earnings. As a result, investors require higher returns from common stocks than from bonds to compensate them for bearing the additional risk.

While it is possible to directly observe bond returns and yields, investors' required common equity returns cannot be directly determined or observed. According to RPM theory, one can estimate a common equity risk premium over bonds (either historically or prospectively) and use that premium to derive a cost rate of common equity. The cost of common equity equals the expected cost rate for long-term debt capital, plus a risk premium over that cost rate, to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings upon liquidation.

Q. PLEASE EXPLAIN HOW YOU DERIVED YOUR INDICATED COST OF COMMON EQUITY BASED ON THE RPM.

A. To derive my indicated cost of common equity under the RPM, I used two risk premium methods. The first method was the PRPM and the second method was a RPM using a total market approach. The PRPM estimates the risk-return relationship directly, while the total market approach indirectly derives a risk premium by using known metrics as a proxy for risk.

Q. PLEASE EXPLAIN THE PRPM.

A. The PRPM, published in the *Journal of Regulatory Economics,*[17] was developed from the work of Robert F. Engle, who shared the Nobel Prize in Economics in 2003 "for methods of analyzing economic time series with time-varying volatility ("ARCH")".[18] Engle found that volatility changes over time and is related from one period to the next, especially in financial markets. Engle discovered that volatility of prices and returns clusters over time and is therefore highly predictable and can be used to predict future levels of risk and risk premiums.

The PRPM estimates the risk-return relationship directly, as the predicted equity risk premium is generated by predicting volatility or risk. The PRPM is not based on an estimate of investor behavior, but rather on an evaluation of the results of that behavior (i.e., the variance of historical equity risk premiums).

The inputs to the model are the historical returns on the common shares of each Utility Proxy Group company minus the historical monthly yield on long-term U.S. Treasury securities through June 2023. Using a generalized form of ARCH, known as GARCH, I calculated each Utility Proxy Group company's projected equity risk premium using Eviews© statistical software. When the GARCH model is applied to the historical return data, it produces a predicted GARCH variance series[19] and a

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[17] Autoregressive conditional heteroscedasticity. See "A New Approach for Estimating the Equity Risk Premium for Public Utilities", Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. The Journal of Regulatory Economics (December 2011), 40:261-278.

[18] www.nobelprize.org.

[19] Illustrated on Columns 1 and 2, page 2 of Schedule DWD-4.

GARCH coefficient[20]. Multiplying the predicted monthly variance by the GARCH coefficient and then annualizing it[21] produces the predicted annual equity risk premium. I then added the forecasted 30-year U.S. Treasury bond yield of 3.85%[22] to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. The 30-year U.S. Treasury bond yield is a consensus forecast derived from *Blue Chip Financial Forecasts ("Blue Chip")*[23].

Q. WHAT ARE THE INDICATED RESULTS OF THE PRPM AS APPLIED TO YOUR UTILITY PROXY GROUP?

A. The mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.20%, the median is 10.28%, and the average of the two is 10.74%. Consistent with my reliance on the average of the median and mean results of the DCF models, I relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 10.74%.

Q. PLEASE EXPLAIN THE TOTAL MARKET APPROACH RPM.

A. The total market approach RPM adds a prospective public utility bond yield to an average of: (1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, (2) an equity risk premium based on the S&P Utilities

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20 Illustrated on Column 4, page 2 of Schedule DWD-4.
21 Annualized Return = (1 + Monthly Return) ^12 – 1.
22 *See,* Column 6, page 2 of Schedule DWD-4.
23 *Blue Chip Financial Forecasts*, June 1, 2023 at page 14 and June 30, 2023 at page 2.

Index, and (3) an equity risk premium based on authorized ROEs for natural gas distribution utilities.

Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF 5.44% APPLICABLE TO THE UTILITY PROXY GROUP.

A. The first step in the total market approach RPM analysis is to determine the expected bond yield. Because both ratemaking and the cost of capital, including common equity cost rate, are prospective in nature, a prospective yield on similarly-rated long-term debt is essential. I relied on a consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds for the six calendar quarters ending with the fourth calendar quarter of 2024, and *Blue Chip's* long-term projections for 2025 to 2029 and 2030 to 2034. As shown on line 1, page 3 of Schedule DWD-4, the average expected yield on Moody's Aaa rated corporate bonds is 4.75%. To derive an expected yield on Moody's A2 rated public utility bonds, I made an upward adjustment of 0.69%, which represents a recent spread between Aaa rated corporate bonds and A2 rated public utility bonds, in order to adjust the expected Aaa rated corporate bond yield to an equivalent A2 rated public utility bond yield.[24] Adding that recent 0.69% spread to the expected Aaa rated corporate bond yield of 4.75% results in an expected A2 rated public utility bond yield of 5.44%.

[24] As shown on line 2 and explained in note 2, page 3 of Schedule DWD-4.

I then reviewed the average credit rating for the Utility Proxy Group from Moody's to determine if an adjustment to the estimated A2 rated public utility bond was necessary. Since the Utility Proxy Group's average Moody's long-term issuer rating is A2, no other adjustment is needed to make the A2 prospective bond yield applicable to the A2 rated public utility bond. The results are a 5.44% expected bond yield applicable to the Utility Proxy Group.

Table 4: Summary of the Calculation of the Utility Proxy Group Projected Bond Yield[25]

Prospective Yield on Moody's Aaa Rated Corporate Bonds (*Blue Chip*)	4.75%
Adjustment to Reflect Yield Spread Between Moody's Aaa Rated Corporate Bonds and Moody's A2 Rated Utility Bonds	0.69%
Prospective Bond Yield Applicable to the Utility Proxy Group	5.44%

Q. PLEASE EXPLAIN HOW THE BETA-DERIVED EQUITY RISK PREMIUM IS DETERMINED.

A. The components of the beta-derived risk premium model are: (1) an expected market equity risk premium over corporate bonds, and (2) the beta. The derivation of the beta-derived equity risk premium that I applied to the Utility Proxy Group is shown on lines 1 through 9, page 8 of Schedule DWD-4. The total beta-derived equity risk premium I applied is based on an average of three historical market data-

[25] As shown on page 3 of Schedule DWD-4.

based equity risk premiums, two *Value Line*-based equity risk premiums, and one Bloomberg-based equity risk premium. Each of these is described below.

Q. HOW DID YOU DERIVE A MARKET EQUITY RISK PREMIUM BASED ON LONG-TERM HISTORICAL DATA?

A. To derive a historical market equity risk premium, I used the most recent holding period returns for the large company common stocks from the Stocks, Bonds, Bills, and Inflation ("SBBI") Yearbook 2023 ("SBBI - 2023")[26] less the average historical yield on Moody's Aaa/Aa rated corporate bonds for the period 1928 to 2022. Using holding period returns over a very long time is appropriate because it is consistent with the long-term investment horizon presumed by investing in a going concern, i.e., a company expected to operate in perpetuity.

SBBI's long-term arithmetic mean monthly total return rate on large company common stocks was 11.78% and the long-term arithmetic mean monthly yield on Moody's Aaa/Aa rated corporate bonds was 5.96%.[27] As shown on line 1, page 8 of Schedule DWD-4, subtracting the mean monthly bond yield from the total return on large company stocks results in a long-term historical equity risk premium of 5.82%.

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26 SBBI Appendix A Tables: Morningstar Stocks, Bonds, Bills, & Inflation 1926-2022.

27 As explained in note 1, page 9 of Schedule DWD-4.

I used the arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for the Moody's Aaa/Aa rated corporate bonds, because they are appropriate for the purpose of estimating the cost of capital as noted in SBBI - 2023.[28] Using the arithmetic mean return rates and yields is appropriate because historical total returns and equity risk premiums provide insight into the variance and standard deviation of returns needed by investors in estimating future risk when making a current investment. If investors relied on the geometric mean of historical equity risk premiums, they would have no insight into the potential variance of future returns, because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, which is critical to risk analysis.

Q. PLEASE EXPLAIN THE DERIVATION OF THE REGRESSION-BASED MARKET EQUITY RISK PREMIUM.

A. To derive the regression-based market equity risk premium of 7.46% shown on line 2, page 8 of Schedule DWD-4, I used the same monthly annualized total returns on large company common stocks relative to the monthly annualized yields on Moody's Aaa/Aa rated corporate bonds as mentioned above. I modeled the relationship between interest rates and the market equity risk premium using the observed monthly market equity risk premium as the dependent variable, and the monthly yield on Moody's Aaa/Aa rated corporate bonds as the independent variable. I then used a linear Ordinary Least Squares ("OLS") regression, in which

[28] SBBI - 2023, at page 194.

the market equity risk premium is expressed as a function of the Moody's Aaa/Aa rated corporate bonds yield:

$$RP = \alpha + \beta\ (R_{Aaa/Aa})$$

Q. PLEASE EXPLAIN THE DERIVATION OF THE PRPM EQUITY RISK PREMIUM.

A. I used the same PRPM approach described above to the PRPM equity risk premium. The inputs to the model are the historical monthly returns on large company common stocks minus the monthly yields on Moody's Aaa/Aa rated corporate bonds during the period from January 1928 through June 2023.[29] Using the previously discussed generalized form of ARCH, known as GARCH, the projected equity risk premium is determined using Eviews© statistical software. The resulting PRPM predicted a market equity risk premium of 8.70%.[30]

Q. PLEASE EXPLAIN THE DERIVATION OF A PROJECTED EQUITY RISK PREMIUM BASED ON *VALUE LINE* DATA FOR YOUR RPM ANALYSIS.

A. As noted above, because both ratemaking and the cost of capital are prospective, a prospective market equity risk premium is needed. The derivation of the forecasted or prospective market equity risk premium can be found in note 4, page 8 of Schedule DWD-4. Consistent with my calculation of the dividend yield component

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29 Data from January 1926 to December 2022 is from SBBI - 2023. Data from January 2023 to June 2023 is from Bloomberg.

30 Shown on line 3, page 8 of Schedule DWD-4.

in my DCF analysis, this prospective market equity risk premium is derived from an average of the three- to five-year median market price appreciation potential by *Value Line* for the 13 weeks ended July 14, 2023, plus an average of the median estimated dividend yield for the common stocks of the 1,700 firms covered in *Value Line*'s Standard Edition.[31]

The average median expected price appreciation is 63%, which translates to a 12.99% annual appreciation, and when added to the average of *Value Line's* median expected dividend yields of 2.32%, equates to a forecasted annual total return rate on the market of 15.31%. The forecasted Moody's Aaa rated corporate bond yield of 4.75% is deducted from the total market return of 15.31%, resulting in an equity risk premium of 10.56%, as shown on line 4, page 8 of Schedule DWD-4.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON THE S&P 500 COMPANIES.

A. Using data from *Value Line*, I calculated an expected total return on the S&P 500 companies using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The expected total return for the S&P 500 is 14.14%. Subtracting the prospective yield on Moody's Aaa rated corporate bonds of 4.75% results in a 9.39% projected equity risk premium.

[31] As explained in detail in note 1, page 2 of Schedule DWD-5.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON BLOOMBERG DATA.

A. Using data from Bloomberg, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation, identical to the method described above. The expected total return for the S&P 500 is 16.04%. Subtracting the prospective yield on Moody's Aaa rated corporate bonds of 4.75% results in an 11.29% projected equity risk premium.

Q. WHAT WAS YOUR CONCLUSION OF A BETA-DERIVED EQUITY RISK PREMIUM FOR USE IN YOUR RPM ANALYSIS?

A. I gave equal weight to all six equity risk premiums based on each source - historical, *Value Line*, and Bloomberg - in arriving at an 8.87% equity risk premium.

Table 5: Summary of the Calculation of the Equity Risk Premium Using Total Market Returns[32]

Historical Spread Between Total Returns of Large Stocks and Aaa and Aa2 Rated Corporate Bond Yields (1928 – 2022)	5.82%
Regression Analysis on Historical Data	7.46%
PRPM Analysis on Historical Data	8.70%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected Aaa Corporate Bond Yields	10.56%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected Aaa Corporate Bond Yields	9.39%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected Aaa Corporate Bond Yields	11.29%
Average	8.87%

After calculating the average market equity risk premium of 8.87%, I adjusted it by the beta to account for the risk of the Utility Proxy Group. As discussed below, the beta is a meaningful measure of prospective relative risk to the market as a whole, and is a logical way to allocate a company's, or proxy group's, share of the market's total equity risk premium relative to corporate bond yields. As shown on page 1 of Schedule DWD-5, the average of the mean and median beta for the Utility Proxy Group is 0.77. Multiplying the 0.77 average beta by the market equity risk premium of 8.87% results in a beta-adjusted equity risk premium for the Utility Proxy Group of 6.83%.

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32 As shown on page 8 of Schedule DWD-4.

Q. HOW DID YOU DERIVE THE EQUITY RISK PREMIUM BASED ON THE S&P UTILITY INDEX AND MOODY'S A2 RATED PUBLIC UTILITY BONDS?

A. I estimated three equity risk premiums based on S&P Utility Index holding returns, and two equity risk premiums based on the expected returns of the S&P Utilities Index, using *Value Line* and Bloomberg data, respectively. Turning first to the S&P Utility Index holding period returns, I derived a long-term monthly arithmetic mean equity risk premium between the S&P Utility Index total returns of 10.63% and monthly Moody's A2 rated public utility bond yields of 6.44% from 1928 to 2022, to arrive at an equity risk premium of 4.20%.[33] I then used the same historical data to derive an equity risk premium of 5.16% based on a regression of the monthly equity risk premiums. The final S&P Utility Index holding period equity risk premium involved applying the PRPM using the historical monthly equity risk premiums from January 1928 to June 2023 to arrive at a PRPM-derived equity risk premium of 5.24% for the S&P Utility Index.

I then derived expected total return on the S&P Utilities Index of 10.00% using data from *Value Line* and Bloomberg, respectively, and subtracted the prospective Moody's A2 rated public utility bond yield of 5.44%[34], which resulted in an equity risk premium of 4.56%. As with the market equity risk premiums, I averaged each

[33] As shown on line 1, page 12 of Schedule DWD-4.
[34] Derived on line 3, page 3 of Schedule DWD-4.

risk premium based on each source (i.e., historical and *Value Line*) to arrive at my utility-specific equity risk premium of 4.79%.

Table 6: Summary of the Calculation of the Equity Risk Premium Using S&P Utility Index Holding Returns[35]

Historical Spread Between Total Returns of the S&P Utilities Index and A2 Rated Utility Bond Yields (1928 – 2022)	4.20%
Regression Analysis on Historical Data	5.16%
PRPM Analysis on Historical Data	5.24%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P Utilities Index less Projected A2 Utility Bond Yields	4.56%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P Utilities Index less Projected A2 Utility Bond Yields	NMF[36]
Average	4.79%

Q. HOW DID YOU DERIVE AN EQUITY RISK PREMIUM OF 4.92% BASED ON AUTHORIZED ROES FOR GAS DISTRIBUTION UTILITIES?

A. The equity risk premium of 4.92% shown on line 3, page 7 of Schedule DWD-4 is the result of a regression analysis based on regulatory awarded gas distribution ROEs related to the yields on Moody's A rated public utility bonds. That analysis is shown on page 13 of Schedule DWD-4. Page 13 of Schedule DWD-4 contains

35 As shown on page 12 of Schedule DWD-4.

36 "NMF" = Not Meaningful Figure. Using data from Bloomberg Professional Services for the S&P Utilities Index, an expected return of 4.25% was derived based on expected dividend yields as a proxy for income returns and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 5.44%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of -1.19%. (4.25% - 5.44% = -1.19%). Because a negative risk premium is inconsistent with financial theory, it is not included in the final average.

the graphical results of a regression analysis of 821 rate cases for gas distribution utilities which were fully litigated during the period from January 1, 1980 through July 14, 2023. It shows the implicit equity risk premium relative to the yields on A2 rated public utility bonds immediately prior to the issuance of each regulatory decision. It is readily discernible that there is an inverse relationship between the yield on A2 rated public utility bonds and equity risk premiums. In other words, as interest rates decline, the equity risk premium rises and vice versa, a result consistent with financial literature on the subject.[37] I used the regression results to estimate the equity risk premium applicable to the projected yield on Moody's A2 rated public utility bonds. Given the expected A2 rated utility bond yield of 5.44%, it can be calculated that the indicated equity risk premium applicable to that bond yield is 4.92%, which is shown on line 3, page 7 of Schedule DWD-4.

Q. WHAT IS YOUR CONCLUSION OF AN EQUITY RISK PREMIUM FOR USE IN YOUR TOTAL MARKET APPROACH RPM ANALYSIS?

A. The equity risk premiums I applied to the Utility Proxy Group is 5.51%, which is the average of the beta-adjusted equity risk premium for the Utility Proxy Group, the S&P Utilities Index, and the authorized return utility equity risk premiums of 6.83%, 4.79%, and 4.92%, respectively.[38]

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37 *See*, *e.g.*, Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, Vol. 11, No. 1, 2001, at 11-12; 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 pp. 33-45.

38 As shown on page 7 of Schedule DWD-4.

Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE BASED ON THE TOTAL MARKET APPROACH?

A. As shown on line 5, page 3 of Schedule DWD-4, and shown on Table 7, below, I calculated a common equity cost rate of 10.95% for the Utility Proxy Group based on the total market approach RPM.

Table 7: Summary of the Total Market Return Risk Premium Model[39]

Prospective Moody's A2 Rated Utility Bond Applicable to the Utility Proxy Group	5.44%
Prospective Equity Risk Premium	5.51%
Indicated Cost of Common Equity	10.95%

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE PRPM AND THE TOTAL MARKET APPROACH RPM?

A. As shown on page 1 of Schedule DWD-4, the indicated RPM-derived common equity cost rate is 10.85%, which gives equal weight to the PRPM (10.74%) and the adjusted-market approach results (10.95%).

C. <u>The Capital Asset Pricing Model</u>

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. CAPM theory defines risk as the co-variability of a security's returns with the market's returns as measured by the beta (β). A beta less than 1.0 indicates lower

[39] As shown on page 3 of Schedule DWD-4.

variability than the market as a whole, while a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all non-market or unsystematic risk can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. In addition, the CAPM presumes that investors only require compensation for systematic risk, which is the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by beta. The traditional CAPM model is expressed as:

$$R_s = R_f + \beta (R_m - R_f)$$

Where:	R_s	=	Return rate on the common stock
	R_f	=	Risk-free rate of return
	R_m	=	Return rate on the market as a whole
	β	=	Adjusted beta (volatility of the security relative to the market as a whole)

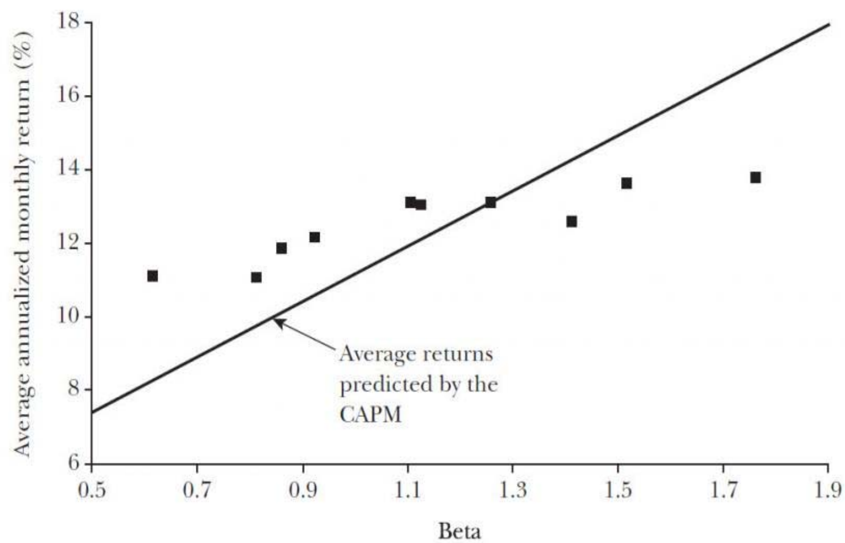
Numerous tests of the CAPM have measured the extent to which security returns and beta are related as predicted by the CAPM, confirming its validity. The empirical CAPM ("ECAPM") reflects the reality that while the results of these tests support the notion that the beta is related to security returns, the empirical Security

Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML.[40]

The ECAPM reflects this empirical reality. Fama and French clearly state regarding their Figure 2, below, that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low."[41]

Figure 2 http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on Prior Beta, 1928–2003



Morin also states that:

> 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.[42]

* * *

[40] Roger A. Morin, Modern Regulatory Finance, at page 223 ("Morin").

[41] Eugene F. Fama and Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, Journal of Economic Perspectives, Vol. 18, No. 3, Summer 2004 at p. 33 ("Fama & French").

[42] Morin, at p. 207.

> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,(R_M - R_F) + (1\text{-}x)\ \beta(R_M - R_F)$$
>
> 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:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\ \beta(R_M - R_F)$$[43]

Fama and French provide similar support for the ECAPM when they state:

> The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too "flat."… The regressions consistently find that the intercept is greater than the average risk-free rate… and the coefficient on beta is less than the average excess market return… This is true in the early tests… as well as in more recent cross-section regression tests, like Fama and French (1992).[44]

Finally, Fama and French further note:

> Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Lintner CAPM predicts. The returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return is 11.1 percent. The predicted return on the portfolio with the highest beta is 16.8 percent per year; the actual is 13.7 percent.[45]

Clearly, the justification from Morin, and Fama and French, along with their reviews of other academic research on the CAPM, validate the use of the ECAPM.

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43 Morin, at p. 221.
44 Fama & French, at 32.
45 Fama & French, at 33.

In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the Utility Proxy Group and averaged the results.

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

A. For the beta in my CAPM analysis, I considered two sources: *Value Line* and Bloomberg. While both of those services adjust their calculated (or "raw") betas to reflect the tendency of beta to regress to the market mean of 1.00, *Value Line* calculates beta over a five-year period, while Bloomberg calculates it over a two-year period.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.

A. As shown in Column 5, page 1 of Schedule DWD-5, the risk-free rate adopted for both applications of the CAPM is 3.85%. This risk-free rate is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the fourth calendar quarter of 2024, and long-term projections for the years 2025 to 2029 and 2030 to 2034.

Q. WHY IS THE YIELD ON LONG-TERM U.S. TREASURY BONDS APPROPRIATE FOR USE AS THE RISK-FREE RATE?

A. The yield on long-term U.S. Treasury bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on Moody's A rated public utility bonds; the long-term investment horizon inherent in utilities' common stocks; and the long-term life of the jurisdictional rate base to which the allowed fair rate of return (i.e., cost of capital) will be applied. In contrast, short-term U.S. Treasury yields are more volatile and largely a function of Federal Reserve monetary policy.

Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED RISK PREMIUM FOR THE MARKET USED IN YOUR CAPM ANALYSES.

A. The basis of the market risk premium is explained in detail in note 1 on Schedule DWD-5. As discussed above, the market risk premium is derived from an average of three historical data-based market risk premiums, two *Value Line* data-based market risk premiums, and one Bloomberg data-based market risk premium.

The long-term income return on U.S. Government securities of 5.00% was deducted from the SBBI - 2023 monthly historical total market return of 12.03%, which results in an historical market equity risk premium of 7.03%.[46] I applied a linear OLS regression to the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government securities from SBBI - 2023. That regression analysis yielded a market equity risk premium of 8.59%. The PRPM market equity risk premium is 9.69% and is derived using the PRPM relative to the yields on long-term U.S. Treasury securities from January 1926 through June 2023.

[46] SBBI - 2023, at Appendix A-1 (1) through A-1 (3) and Appendix A-7 (19) through A-7 (21).

The *Value Line*-derived forecasted total market equity risk premium is derived by deducting the forecasted risk-free rate of 3.85%, discussed above, from the *Value Line* projected total annual market return of 15.31%, resulting in a forecasted total market equity risk premium of 11.46%. The S&P 500 projected market equity risk premium using *Value Line* data is derived by subtracting the projected risk-free rate of 3.85% from the projected total return of the S&P 500 of 14.14%. The resulting market equity risk premium is 10.29%.

The S&P 500 projected market equity risk premium using Bloomberg data is derived by subtracting the projected risk-free rate of 3.85% from the projected total return of the S&P 500 of 16.04%. The resulting market equity risk premium is 12.19%.

These six measures, when averaged, result in an average total market equity risk premium of 9.87%.

Table 8: Summary of the Calculation of the Market Risk Premium for Use in the CAPM[47]

Historical Spread Between Total Returns of Large Stocks and Long-Term Government Bond Yields (1926 – 2022)	7.03%
Regression Analysis on Historical Data	8.59%
PRPM Analysis on Historical Data	9.69%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected 30-Year Treasury Bond Yields	11.46%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected 30-Year Treasury Bond Yields	10.29%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected 30-Year Treasury Bond Yields	12.19%
Average	9.87%

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE TRADITIONAL AND EMPIRICAL CAPM TO THE UTILITY PROXY GROUP?

A. As shown on page 1 of Schedule DWD-5, the mean result of my CAPM/ECAPM analyses for the Utility Proxy Group is 11.68%, the median is 11.70%, and the average of the two is 11.69%. Consistent with my reliance on the average of mean and median DCF results discussed above, the indicated common equity cost rate using the CAPM/ECAPM is 11.69%.

47 As shown on page 2 of Schedule DWD-5.

D. Common Equity Cost Rates for a Proxy Group of Domestic, Non-Price Regulated Companies Based on the DCF, RPM, and CAPM

Q. WHY DID YOU ALSO CONSIDER A PROXY GROUP OF DOMESTIC, NON-PRICE REGULATED COMPANIES?

A. In the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Because the purpose of rate regulation is to be a substitute for marketplace competition, non-price regulated firms operating in the competitive marketplace make an excellent proxy if they are comparable in total risk to the Utility Proxy Group being used to estimate the cost of common equity. The selection of such domestic, non-price regulated competitive firms theoretically and empirically results in a proxy group that is comparable in total risk to the Utility Proxy Group, because all of these companies compete for capital in the exact same markets.

Q. HOW DID YOU SELECT NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. In order to select a proxy group of domestic, non-price regulated companies similar in total risk to the Utility Proxy Group, I relied on beta and related statistics derived from *Value Line* regression analyses of weekly market prices over the most recent 260 weeks (i.e., five years). These selection criteria resulted in a proxy group of 46 domestic, non-price regulated firms comparable in total risk to the Utility Proxy Group. Total risk is the sum of non-diversifiable market risk and diversifiable company-specific risks. The criteria used in selecting the domestic, non-price regulated firms was:

(i) They must be covered by *Value Line Investment Survey* (Standard Edition);

(ii) They must be domestic, non-price regulated companies, i.e., not utilities;

(iii) Their unadjusted betas must lie within plus or minus two standard deviations of the average unadjusted beta of the Utility Proxy Group; and

(iv) The residual standard errors of the *Value Line* regressions which gave rise to the unadjusted betas must lie within plus or minus two standard deviations of the average residual standard error of the Utility Proxy Group.

Betas measure market, or systematic, risk, which is not diversifiable. The residual standard errors of the regressions measure each firm's company-specific, diversifiable risk. Companies that have similar betas <u>and</u> similar residual standard errors resulting from the same regression analyses have similar total investment risk.

Q. HAVE YOU PREPARED A SCHEDULE WHICH SHOWS THE DATA FROM WHICH YOU SELECTED THE 46 DOMESTIC, NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. Yes, the basis of my selection and both proxy groups' regression statistics are shown in Schedule DWD-6.

Q. DID YOU CALCULATE COMMON EQUITY COST RATES USING THE DCF MODEL, RPM, AND CAPM FOR THE NON-PRICE REGULATED PROXY GROUP?

A. Yes. Because the DCF model, RPM, and CAPM have been applied in an identical manner as described above, I will not repeat the details of the rationale and application of each model. One exception is in the application of the RPM, where I did not use public utility-specific equity risk premiums, nor did I apply the PRPM to the individual non-price regulated companies.

Page 2 of Schedule DWD-7 derives the constant growth DCF model common equity cost rate. As shown, the indicated common equity cost rate using the constant growth DCF for the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group is 10.60%.

Pages 3 through 5 of Schedule DWD-7 contain the data and calculations that support the 13.10% RPM common equity cost rate. As shown on line 1, page 4 of Schedule DWD-7, the consensus prospective yield on Moody's Baa2 rated corporate bonds for the six quarters ending in the fourth quarter of 2024, and for the years 2025 to 2029 and 2030 to 2034, is 5.73%.[48] Since the Non-Price Regulated Proxy Group has an average Moody's long-term issuer rating of Baa1, a downward adjustment of 0.17% to the projected Baa2 corporate bond yield is

[48] *Blue Chip Financial Forecasts*, June 1, 2023, at page 14 and June 30, 2023, at page 2.

necessary to reflect the difference in ratings,[49] which results in a projected Baa1 corporate bond yield of 5.56%.

When the beta-adjusted risk premium of 7.54%[50] relative to the Non-Price Regulated Proxy Group is added to the prospective Baa1 rated corporate bond yield of 5.56%, the indicated RPM common equity cost rate is 13.10%. Page 7 of Schedule DWD-7 contains the inputs and calculations that support my indicated CAPM/ECAPM common equity cost rate of 12.30%.

Q. WHAT IS THE COST RATE OF COMMON EQUITY BASED ON THE NON-PRICE REGULATED PROXY GROUP COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. As shown on page 1 of Schedule DWD-7, the results of the common equity models applied to the Non-Price Regulated Proxy Group that are comparable in total risk to the Utility Proxy Group are as follows:

49 As demonstrated in line 2 and described in note 2, page 3 of Schedule DWD-7.
50 Derived on page 5 of Schedule DWD-7.

Table 9: Summary of Common Equity Cost Rates for the Non-Price Regulated Proxy Group[51]

Discounted Cash Flow Model	10.60%
Risk Premium Model	13.10%
Capital Asset Pricing Model	12.30%
Mean	12.00%
Median	12.30%
Average of Mean and Median	12.15%

The average of the mean and median of these models is 12.15%, which I used as the indicated common equity cost rates for the Non-Price Regulated Proxy Group.

VIII. CONCLUSION OF COMMON EQUITY COST RATES BEFORE ADJUSTMENTS

Q. WHAT ARE THE INDICATED COMMON EQUITY COST RATES FOR THE UTILITY PROXY GROUP BEFORE ADJUSTMENTS?

A. By applying multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, the range of indicated cost of common equity before any relative risk adjustments is from 9.65% to 12.15%.

I used multiple cost of common equity models as primary tools in arriving at my recommended range of common equity cost rates, because no single model is so inherently precise that it can be relied on to the exclusion of other theoretically sound models. Using multiple models adds reliability to the estimated common

[51] As shown on page 1 of Schedule DWD-7.

equity cost rate, with the prudence of using multiple cost of common equity models supported in both the financial literature and regulatory precedent.

As will be discussed below, the Company has greater risk than the Utility Proxy Group. Because of this, the indicated range of model results based on the Utility Proxy Group must be adjusted to reflect the Company's greater relative risk.

IX. ADJUSTMENTS TO THE COMMON EQUITY COST RATES

A. Size Adjustment

Q. DOES THE COMPANY'S SMALLER SIZE RELATIVE TO THE UTILITY PROXY GROUP INCREASE ITS BUSINESS RISK?

A. Yes. The Company's smaller size relative to the Utility Proxy Group indicates greater relative business risk for the Company because, all else being equal, size has a material bearing on risk.

Size affects business risk because smaller companies generally are less able to cope with significant events that affect sales, revenues, and earnings. For example, smaller companies face more risk exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few larger customers would have a greater effect on a smaller company than on a bigger company with a larger, more diverse, customer base.

As further evidence that smaller firms are riskier, investors generally demand greater returns from smaller firms to compensate for less marketability and liquidity of their securities. Kroll's Cost of Capital Navigator: U.S. Cost of Capital Module ("Kroll") discusses the nature of the small-size phenomenon, providing an indication of the magnitude of the size premium based on several measures of size. In discussing "Size as a Predictor of Equity Premiums," Kroll states:

> 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 [sic]. 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. (footnote omitted) (emphasis in original)[52]

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence," Fama and French note size is indeed a risk factor which must be reflected when estimating the cost of common equity. On page 14, they note:

> . . . the higher average returns on small stocks and high book-to-market stocks reflect unidentified state variables that produce undiversifiable risks (covariances) in returns that are not captured by the market return and are priced separately from market betas.[53]

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

[53] Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives*, Volume 18, Number 3, Summer 2004, at 25-43.

Based on this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect size has on the cost of common equity.

Also, it is a basic financial principle that the use of funds invested, and not the source of funds, is what gives rise to the risk of any investment.[54] Eugene Brigham, a well-known authority, states:

> A number of researchers have observed that portfolios of small-firm stocks 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 firm to provide average returns in the stock market that are higher than those of large 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 large firms**. (emphasis added)[55]

Consistent with the financial principle of risk and return discussed above, increased relative risk due to small size must be considered in the allowed rate of return on common equity. Therefore, the Commission's authorization of a cost rate of common equity in this proceeding must appropriately reflect the Company's unique risks, including their small size, which is justified and supported above by evidence in the financial literature.

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54 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (McGraw-Hill Book Company, 1996), at 204-205, 229.

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

Q. IS THERE A WAY TO QUANTIFY A RELATIVE RISK ADJUSTMENT DUE TO THE COMPANY'S SMALL SIZE RELATIVE TO THE UTILITY PROXY GROUP?

A. Yes. The Company has greater relative risk than the average utility in the Utility Proxy Group because of its smaller size compared with the utilities in the proxy group, as measured by an estimated market capitalization of common equity for the jurisdictional operations of each company.

Table 10: Size as Measured by Market Capitalization for NMGC and the Utility Proxy Group[56]

	Market Capitalization* ($ Millions)	Times Greater than The Company
NMGC	$881.450	
Utility Proxy Group	$4,331.038	4.9x

NMGC's estimated market capitalization was $881.450 million as of July 14, 2023, compared with the median market capitalization of the Utility Proxy Group of $4.331 billion as of July 14, 2023. The Utility Proxy Group's market capitalization is 4.9 times the size of NMGC's estimated market capitalization.

56 From page 1 of Schedule DWD-8.

As a result, it is necessary to upwardly adjust the indicated common equity cost rate attributable to the Utility Proxy Group to reflect the Company's greater risk due to its smaller relative size. The determination is based on the size premiums for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2022 period. The average size premium for the Utility Proxy Group with market capitalizations of $4.331 billion falls in the 4th decile, while NMGC's estimated market capitalization of $881.450 million places it in the 7th decile. The size premium spread between the 4th decile and the 7th decile is 0.79%. Even though a size premium of 0.79% is indicated, I only applied a premium of 0.20% in order to be conservative.

Q. SINCE THE COMPANY IS PART OF A LARGER COMPANY, WHY IS THE SIZE OF EMERA, INC. NOT MORE APPROPRIATE TO USE WHEN DETERMINING THE SIZE ADJUSTMENT?

A. The return derived in this proceeding will not apply to Emera, Inc.'s operations as a whole, but only to NMGC. Emera, Inc. is the sum of its constituent parts, including those constituent parts' ROEs. Potential investors in Emera, Inc. are aware that it is a combination of operations in each state, and that each state's operations experience the operating risks specific to their jurisdiction. The market's expectation of Emera, Inc.'s return is commensurate with the realities of the company's composite operations in each of the states in which it operates.

Q. DOES THE FACT THAT THE COMPANY HAS SIGNIFICANT GAS TRANSMISSION OPERATIONS AFFECT ITS RISK RELATIVE TO THE UTILITY PROXY GROUP?

A. Yes, it does. As mentioned above, the Company has significant gas transmission operations and more transmission operations than the average of my Utility Proxy Group.[57] Therefore, NMGC would be considered riskier than the Utility Proxy Group as gas transmission operations are inherently riskier than gas distribution operations.

B. <u>Credit Risk Adjustment</u>

Q. PLEASE DISCUSS YOUR PROPOSED CREDIT RISK ADJUSTMENT.

A. As discussed above, NMGC's long-term issuer rating is BBB+ as rated by Fitch Ratings, which is riskier than the A2 average long-term issuer ratings for the Utility Proxy Group.[58] Hence, an upward credit risk adjustment is necessary to reflect the lower credit rating, i.e., BBB+ (equivalent Moody's rating of Baa1), of NMGC relative to the A2 average Moody's bond rating of the Utility Proxy Group.[59]

An indication of the magnitude of the necessary upward adjustment to reflect the greater credit risk inherent in a Baa1 bond rating is two-thirds of a recent three-

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[57] Based on the Proxy Group Companies' 2022 Forms 10-K, only 2 companies had transmission assets in 2022: Atmos Energy Corporation (less than 18.29% of total assets) and Spire Inc.(less than 25.01% of total assets). Whereas NMGC's transmission assets account for 35.17% of the Company's total assets.

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

[59] As shown on page 5 of Schedule DWD-4.

month average spread between Moody's A2 and Baa2 rated public utility bond yields of 0.35%, shown on page 4 of Schedule DWD-4, or 0.23%.[60]

C. <u>Flotation Costs</u>

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are those costs associated with the sale of new issuances of common stock. They include market pressure and the mandatory unavoidable costs of issuance (e.g., underwriting fees and out-of-pocket costs for printing, legal, registration, etc.). For every dollar raised through debt or equity offerings, the Company receives less than one full dollar in financing.

Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED COMMON EQUITY COST RATE?

A. It is important because there is no other mechanism in the ratemaking paradigm through which such costs can be recognized and recovered. Because these costs are real, necessary, and legitimate, recovery of these costs should be permitted. As noted by Morin:

> 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 the 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.[61]

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60 0.23% = 0.35% * (2/3).

61 Morin, at 329.

Q. DO THE COMMON EQUITY COST RATE MODELS YOU HAVE USED ALREADY REFLECT INVESTORS' ANTICIPATION OF FLOTATION COSTS?

A. No. All of these models assume no transaction costs. The literature is quite clear that these costs are not reflected in the market prices paid for common stocks. For example, Brigham and Daves confirm this and provide the methodology utilized to calculate the flotation adjustment.[62] In addition, Morin confirms the need for such an adjustment even when no new equity issuance is imminent.[63] Consequently, it is proper to include a flotation cost adjustment when using cost of common equity models to estimate the common equity cost rate.

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 the actual costs of issuing equity that were incurred by Emera, Inc. since its acquisition of NMGC in 2016. Based on the issuance costs shown on page 1 of Schedule DWD-9, an adjustment of 0.09% is required to reflect the flotation costs applicable to the Utility Proxy Group.

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62 Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management, 9th Edition, Thomson/Southwestern, at 342.

63 Morin, at 337-339.

Q. WHAT IS THE INDICATED COST OF COMMON EQUITY AFTER YOUR COMPANY-SPECIFIC ADJUSTMENTS?

A. Applying a 0.20% size adjustment, a 0.23% credit risk adjustment, and a 0.09% flotation cost adjustment to the indicated range of ROEs between 9.65% and 12.15% results in a Company-specific range of common equity rates between 10.17% and 12.67%.

X. <u>CONCLUSION</u>

Q. WHAT IS YOUR RECOMMENDED ROE FOR THE COMPANY?

A. Given the discussion above and the results from the analyses, I recommend that an ROE of 10.50% is appropriate for the Company at this time.

Q. IN YOUR OPINION, IS YOUR PROPOSED ROE OF 10.50% FAIR AND REASONABLE TO NMGC AND ITS CUSTOMERS?

A. Yes, it is.

Q. IN YOUR OPINION, IS NMGC'S PROPOSED CAPITAL STRUCTURE FAIR AND REASONABLE?

A. Yes, it is.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.