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APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES	**PUBLIC UTILITY COMMISSION OF TEXAS**

THE UNITED STATES DEPARTMENT OF DEFENSE AND ALL OTHER FEDERAL EXECUTIVE AGENCIES' NOTICE OF FILING DIRECT TESTIMONY OF MAUREEN L. RENO

The United States Department of Defense and all other Federal Executive Agencies ("DoD/FEA") files the Direct Testimony of Maureen L. Reno, together with accompanying exhibits. This notice includes the following:

1. Affidavit of Maureen L. Reno
2. Direct Testimony of Maureen L. Reno
3. Exhibits MLR-1, MLR-2a, MLR-2b, MLR-2c, MLR-3, MLR-4, MLR-5a, MLR-5b, MLR-5c, MLR-5d, MLR-6a, MLR-6b, MLR-6c, MLR-6d, MLR-6e, MLR-6f, MLR-7a, MLR-7b, MLR-7c, MLR-7d, MLR-7e, MLR-7f, MLR-8a, MLR-8b, MLR-8c, MLR-8d, and MLR-8d

October 22, 2021

Respectfully submitted,

/s/ Kyle J Smith
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CERTIFICATE OF SERVICE

I, Kyle J Smith, representative for DoD/FEA, hereby certify that a copy of DoD/FEA's Notice of Filing Direct Testimony of Maureen L. Reno was served on all parties of record in this proceeding on October 22, 2021 by electronic mail.

/s/ Kyle J Smith_____
Kyle J Smith

SOAH DOCKET NO. 473-21-2606
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APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES	§ § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

Affidavit of Maureen Reno

STATE OF NEW HAMPSHIRE)
COUNTY OF ROCKINGHAM) **ss:**

I, Maureen Reno, being duly sworn state that the Direct Testimony and exhibits for introduction into evidence in Public Utility Commission of Texas Docket No. 52195 were prepared by me or under my supervision, control, and direction; that the Direct Testimony and exhibits are true and correct to the best of my information, knowledge and belief; and that I would give the same testimony orally and would present the same and exhibits and attachments if asked under oath.

Dated at Rockingham County, New Hampshire, this 22th day of October, 2021.

Signature: _____

Name: Maureen L. Reno
Date: October 22, 2021

Subscribed and sworn to before me this 22th day of October, 2021.

_____

Notary Public, State of New Hampshire

My Commission expires: JAMIE A. BREEN Notary Public - New Hampshire My Commission Expires January 10, 2023

SOAH DOCKET NO. 473-21-2606
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APPLCATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES	)	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

DIRECT TESTIMONY

OF

MAUREEN L. RENO

ON BEHALF OF

THE UNITED STATES DEPARTMENT OF DEFENSE
AND
ALL OTHER FEDERAL EXECUTIVE AGENCIES

OCTOBER 22, 2021

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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR FULL NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is Maureen L. Reno. I am an economist with a specialization in public utility economics and finance. I am the founder and principal consultant of Reno Energy Consulting Services LLC. My business address is 19 Hope Hill Road, Derry, New Hampshire 03038.

Q. PLEASE SUMMARIZE YOUR EDUCATION.

A. I received a Bachelor of Arts degree in Economics from the University of Maine at Orono, Maine in 1996. In 1998, I earned a Master of Arts degree in Economics from the University of New Hampshire in Durham, New Hampshire, where I also completed all coursework and examination requirements for the Ph.D. degree in economics, except for my dissertation. My areas of academic concentration included industrial organization and environmental economics.

Q. WHAT IS YOUR PROFESSIONAL BACKGROUND?

A. I have 20 years of professional experience in the regulated utilities and energy sectors. From 2001 to 2011, I served as a utility analyst and program manager with the New Hampshire Public Utilities Commission advising the Commissioners on regulated utilities' cost of capital and return on equity ("ROE"). From 2011 to 2012, I served as a Senior Energy Economist with the Union of Concerned Scientists, advising on the intricacies of the regulated utility industry and helping to develop alternative financing programs for renewable energy investments. Since 2012, I have served as an independent consultant to multiple firms, including Exeter Associates Inc. and TAHOEconomics LLC on utility cost of capital, ROE, and capital structure;

Stephenson Strategic Communications LLC on federal climate and energy policy; and TrueLight Energy LLC on regulated utility rate impacts and energy markets.

Q. HAVE YOU PREVIOUSLY TESTIFIED AS AN EXPERT WITNESS BEFORE A PUBLIC UTILITY COMMISSION?

A. Yes. My testimony was presented and accepted in more than twenty rate proceedings in several states--to include Arizona, Georgia, Missouri, New Hampshire, New Mexico, Oklahoma, and Texas--on a wide range of issues concerning regulated utilities, retail and wholesale energy markets, and renewable energy. (*See* Appendix A for my curriculum vitae and qualifications.)

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS?

A. Yes. I served as an expert witness on cost of capital, ROE, capital structure for the United States Department of Energy in Docket No. 43695 in the *Application of Southwestern Public Service Company for Authority to Change Rates* and Docket No. 41791 in the *Application of Entergy Texas, Inc. for Authority to Change Rates and Reconcile Fuel Costs*.

Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A. I am serving as an expert witness on cost of capital on behalf of the United States Department of Defense ("DoD") and all other Federal Executive Agencies ("FEA") (collectively, "DoD/FEA").

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony is organized into seven sections, including this one. In Section II, I present the purpose of my testimony; summarize the El Paso Electric Company's ("EPE's" or the "Company's") ROE, capital structure, and rate of return in the context of Public Utility Commission of Texas ("PUCT" or "Commission") precedent; and

provide my ROE recommendation. In Section III, I discuss current economic and financial conditions that are affecting investors' opportunity cost of capital (in general and specifically for utility companies). In Section IV, I evaluate the Company's proposed capital structure. In Section V, I explore different types of risks for regulated electric utilities, and I evaluate EPE's business and economic position to determine whether such risks are effectively captured in my sample proxy group and ROE recommendation. In Section VI, I describe the methodologies that I applied to develop my cost of equity findings and ROE recommendation. Finally, in Section VII, I summarize my conclusions and provide my recommendations to the Commission.

II. PURPOSE AND SUMMARY RECOMMENDATIONS

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

A. The purpose of my testimony is to recommend, for ratemaking purposes in this case, an overall rate of return, a capital structure, and a fair rate of ROE for EPE. My recommendation is set forth according to the standards in *Bluefield Water Works v. PSC*, 262 U.S. 679, 692-93 (1923) ("*Bluefield*") and *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 605 (1944) ("*Hope*"). In *Bluefield* and *Hope*, the U.S. Supreme Court established the principle that a public utility may be allowed to earn a return comparable to a return on investments in other enterprises having similar risks that allow the utility, under efficient management, to maintain financial integrity, the opportunity to attract capital on reasonable terms, and to maintain a satisfactory credit rating.

Q. WHAT IS THE RETURN ON EQUITY AND WEIGHTED AVERAGE COST OF CAPITAL THAT THE COMPANY IS REQUESTING IN ITS FILING?

A. EPE's witness, Lisa D. Budtke, is recommending that the Commission grant the Company a Weighted Average Cost of Capital ("WACC") of 7.985 percent. Her WACC is based on a hypothetical capital structure of 51.0 percent equity and 49.0 percent long-term debt and a cost of debt of 5.576 percent. EPE's ROE witness, Jennifer E. Nelson, recommends a ROE of 10.3 percent, which is within her ROE range of 9.75 percent to 10.75 percent.[1]

Q. DO YOU RECOMMEND THAT THE COMMISSION ACCEPT MS. BUDTKELS COST OF DEBT AND CAPITAL STRUCTURE AND MS. NELSON'S RETURN ON EQUITY?

A. I recommend that the Commission accept Ms. Budtke's recommendation on cost of debt and capital structure. However, I oppose Ms. Nelson's recommendation on ROE.

Q. SHOULD THE COMMISSION REJECT MS. NELSON'S ROE RECOMMENDATION?

A. Yes, for several reasons. First, the data presented in Ms. Nelson's testimony does not support her ROE recommendation. An objective analysis of her data would yield a lower ROE. Second, Ms. Nelson skews her analysis through the over-emphasis of and overreliance on inputs with an upward bias. For example, Ms. Nelson relies exclusively on earnings growth estimates, which has the effect of inflating her Discounted Cash Flow ("DCF") model results as well as her Capital Asset Pricing Model ("CAPM") and Empirical CAPM ("ECAPM") results. Relying exclusively on earnings growth estimates also inflates her estimated Equity Risk Premium ("ERP"), a key input in the

[1] Nelson Direct, at 2:21-29.

CAPM and ECAPM analyses. (By contrast, I rely on multiple inputs including earnings growth estimates, dividend growth, book value growth, and sustainable growth - the combination of which produce results that are more accurate.) Third, Ms. Nelson relies heavily on interest rates that do not reflect current trends in financial markets or investors' expectations of inflation and economic growth. Her historical interest rates, which reflect market conditions from earlier this year, and forecasted interest rates inflate all her CAPM, ECAPM, and Risk Premium estimates. (By contrast, I rely on current market data--specifically, the 30-day period ended September 30, 2021--which produces results that are more accurate.)

Q. WHAT DO YOU RECOMMEND AS THE WACC FOR EPE?

A. I recommend an overall WACC of 7.50 percent, based on a ROE of 9.35 percent, an embedded cost of long-term debt of 5.576 percent, and a capital structure comprised of 49.0 percent long-term debt and 51.0 percent common equity. My calculations and recommendations are shown in Table 1.

Q. WHAT IS THE BASIS OF YOUR RECOMMENDED ROE FOR EPE?

A. My ROE recommendation is based on the maximum of my range of 8.61 percent to 9.35 percent, which is derived from my cost of equity methodologies using a proxy group of comparable risk companies. Although the mid-point of my range is 8.98 percent, I recommend a ROE at the maximum of my range because it represents a fair and reasonable ROE for EPE in light of the Company's risk and investors' current valuation of equity assets in general.

Table 1. Comparison of Nelson and Reno Recommendations for Weighted Average Cost of Capital for El Paso Electric Company

	Weight	Pre-Tax Cost of Capital	Weighted Average Cost
Long-Term Debt (Nelson)	49.0%	5.576%	2.730%
Long-Term Debt (Reno)	49.0%	5.576%	2.730%
Common Equity (Nelson)	51.0%	10.300%	5.253%
Common Equity (Reno)	51.0%	9.350%	4.770%
Total Capitalization (Nelson)	100.00%		7.985%
Total Capitalization (Reno)	100.00%		7.500%

Source: EPE Filing, Schedule K-1.

III. MACROECONOMIC CONDITIONS

Q. WHY IS IT IMPORTANT TO CONSIDER MACROECONOMIC CONDITIONS IN DEVELOPING A RECOMMENDED ROE?

A. Investors consider both economic and monetary conditions when assessing the opportunity costs of their investments. Global, national, and regional economic conditions affect investor expectations regarding investment returns, as measured by stock prices, interest rates, and sustainable dividend growth.

Q. HOW WOULD YOU DESCRIBE CURRENT NATIONAL ECONOMIC CONDITIONS?

A. Although the economy has been recovering from the devastating economic shutdown caused by the COVID-19 Pandemic throughout the last 18 months, there are lingering concerns about its impact on business recovery as parts of the country experience an uptick in cases that rival the number of COVID-19 cases during last winter. There are also growing inflation concerns, demonstrated by rising Treasury yields, brought on by

supply chain bottlenecks and a surge in oil and natural gas prices. In response, the Federal Reserve has suggested that it may pare back on monetary support in 2022 by reducing asset purchases. In general, the economic signals are mixed with signs of increasing manufacturing but decreasing auto sales due to supply shortages.[2]

Recent economic growth, as measured by real Gross Domestic Product ("GDP"), shows that the U.S. economy overall is rebounding after the COVID-19 Pandemic. Specifically, real GDP increased from -3.4 percent in 2020 to 6.3 percent in Q1 2021 and 6.7 percent Q2 2021. Unemployment is decreasing from 8.1 percent in 2020 to about 6 percent in Q2 2021 as people return to work. Unfortunately, inflation, measured by the Consumer Price Index ("CPI"), has increased from 1.2 percent last year to 2.6 percent in Q1 2021 and 5.4 percent in Q2 2021 as supply chain bottlenecks and gas shortages persist. (*See* Exhibit MLR-1.)

The Federal Reserve's Open Market Committee ("Federal Reserve" or "FOMC") made the following observations in its most recent press release dated September 22, 2021:

> With progress on vaccinations and strong policy support, indicators of economic activity and employment have continued to strengthen. The sectors most adversely affected by the pandemic have improved in recent months, but the rise in COVID-19 cases has slowed their recovery. Inflation is elevated, largely reflecting transitory factors. Overall financial conditions remain accommodative, in part reflecting policy measures to support the economy and the flow of credit to U.S. households and businesses.
>
> The path of the economy continues to depend on the course of the virus. Progress on vaccinations will likely continue

[2] *Value Line Investment Survey, Selection & Opinion* (October 15, 2021).

> to reduce the effects of the public health crisis on the economy, but risks to the economic outlook remain.[3]

Given this cautious optimism, the FOMC decided to keep the target range for the federal funds rate at 0 to ¼ percent and expects to maintain this target until labor market conditions have reached levels consistent with full employment and inflation has risen to 2 percent and is on track to moderately exceed 2 percent for some time. The FOMC also stated that if the economy progresses towards these full employment and price stability goals, "the Committee judges that a moderation in the pace of asset purchases may soon be warranted."[4] Thus, the FOMC could begin to reduce the extraordinary help it has been providing to the economy during the COVID-19 Pandemic at some point in the near future, depending on economic and financial conditions.

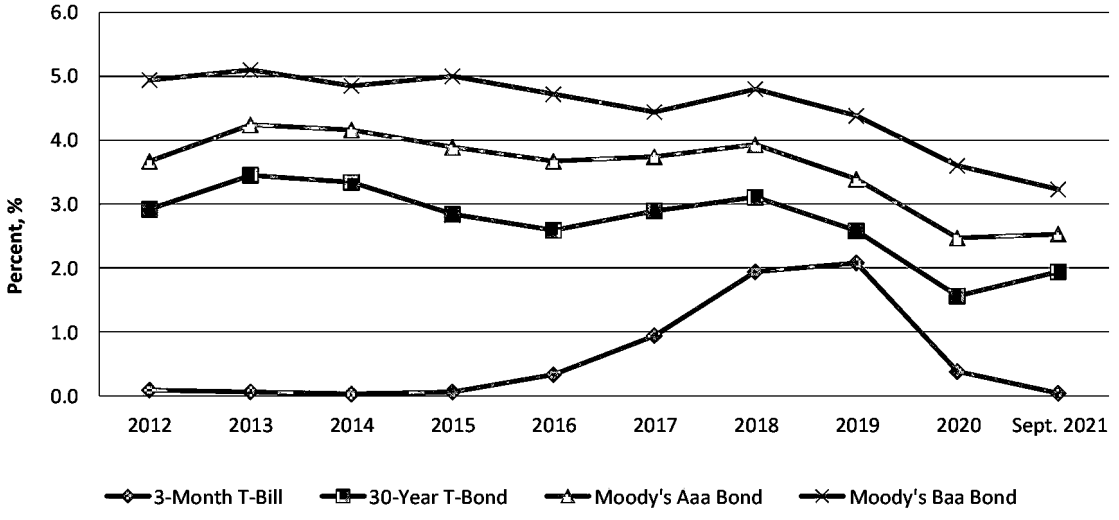
Q. HOW HAVE FINANCIAL CONDITIONS CHANGED IN RECENT YEARS?

A. Figure 1 shows how different market costs of capital have changed for the period 2012 through 2021. (*See also* Exhibit MLR-2a.) Despite gains in short-term interest rates and long-term bond yields in 2017 and 2018, interest rates and long-term bond yields reached historical lows in 2019, only to continue to fall during the COVID-19 Pandemic in response to investor demand for low-risk Treasury bonds.

Yields on long-term bonds (reference the 30-Year U.S. Treasury Bond, or 30-Year T-Bond, in Figure 1) are 1.94 percent. Other rates are following this trajectory. The cost of debt for Moody's Baa-rated corporations is presently at 3.23 percent. Moreover, short-term interest rates (reference the 3-Month U.S. Treasury Bill, or 3-Month T-Bill, in Figure 1) are hovering near zero percent.

[3] Federal Reserve, Press Release (September 22, 2021), *available at* https://www.federalreserve.gov/monetarypolicy/files/monetary20210922a1.pdf
[4] Id., at 2.

Figure 1. Interest Rates and Bond Yields, 2012 to 2021



Source: Economic Indicators, September 2021 Prepared for the Joint Economic Committee by the Council of Economic Advisors and https://fred.stlouisfed.org

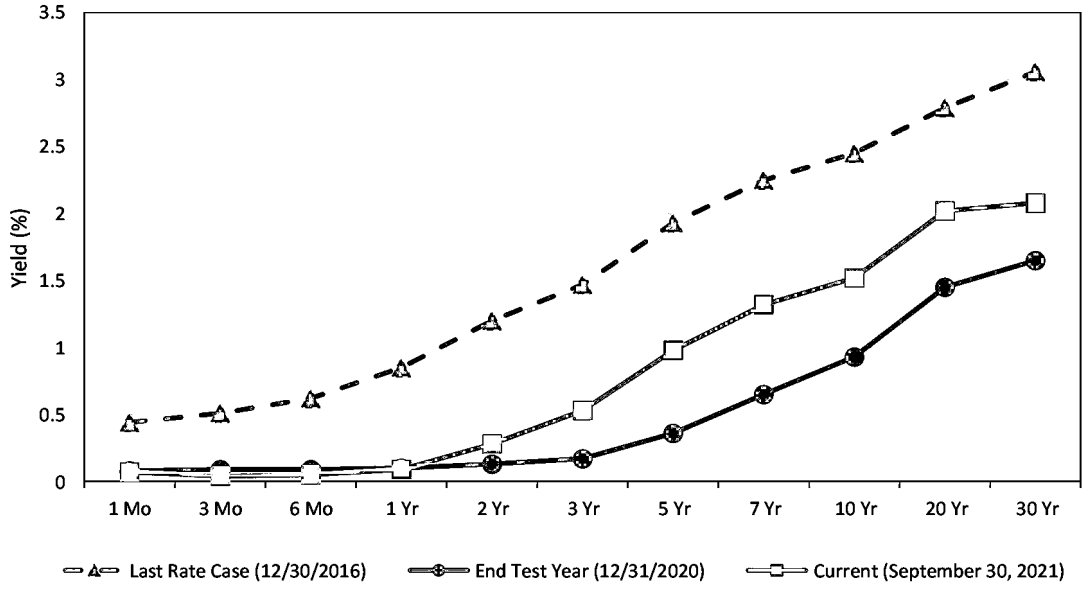
It is crucial to note that decreases in short-term interest rates are the result of the FOMC's policy actions, specifically the FOMC's decreasing the Federal Funds rate and employing its quantitative easing program to maintain its employment and inflation goals during the COVID-19 Pandemic.

By contrast, long-term interest rates are primarily determined by market forces, including investor expectations of future levels of inflation. Figure 2 shows the yields on the different types of T-Bills and T-Bonds, which is referred to by financial analysts as the "yield curve." The yield curve reflects the bond market's consensus opinion of future economic conditions, such as levels of inflation and interest rates.

As of September 30, 2021, the yield curve is mostly upward sloping. In other words, the yields on short-term T-Bills are lower than yields on long-term T-bonds, indicating that investors anticipate a higher rate of inflation in the near future. However,

the yields on long-term T-Bonds in general remain relatively low, demonstrating uncertainty about inflation expectations over the long-term.

Figure 2. Treasury Security Yield Curve



Source: www.treasury.gov

Another measure of the collective views of investors regarding long-term inflation expectations is the Treasury Inflation-Protected Securities ("TIPS") spread, or the difference between yields on long-term nominal Treasury securities and long-term TIPS. The yield on a long-term conventional Treasury bond pays its holder a fixed nominal coupon and principal to compensate the investor for future inflation, and it includes the real rate of interest and the inflation compensation. For TIPS, the coupons and principal both rise and fall with inflation, as measured by the Consumer Price Index ("CPI"). The published yield includes only the real rate of interest. Therefore, the difference, roughly speaking, between the prevailing yields on these two types of

Treasury securities reflects the inflation compensation over that maturity horizon that is expected by bond investors.

The 30-day average difference in the yield on the 30-year Treasury bond and 30-year TIPS for the period ended September 30, 2021 equals 2.23 percent and represents the market's most recent expectations of long-term inflation. (*See* Exhibit MLR-2b.) This confirms that investors are anticipating a moderate rate of inflation over the long term, although there are signs of higher inflation in the near term.

Q. WHAT ARE THE ECONOMIC EXPECTATIONS FOR THE U.S. IN THE NEAR FUTURE?

A. According to the Q3 2021 edition of *Survey of Professional Forecasters* by the Federal Reserve Bank of Philadelphia, economic growth, as measured by real GDP, is expected to grow at an annual rate of 6.1 percent in 2021 and 3.6 percent in 2022, while unemployment is expected to fall from 5.6 percent in 2021 to 4.3 percent in 2022. Over the next couple years, both GDP growth and the unemployment rate are expected to fall. (*See* Exhibit MLR-3.)

Over the next year, inflation, measured by the CPI, is expected to fall to moderate levels of 2.4 percent in 2022 after reaching a high of 4.9 percent this year. The data shows that analysts expect the national economy to remain above full employment in the near term. The national unemployment rate is expected to remain near 4.3 percent in 2022 and to fall to 3.6 percent in 2024, though this may reflect a lack of participation in the labor market.

The prospect of uncertainty regarding whether the economic recovery will persist and whether recent trends in inflation will remain creates uncertainty and reinforces investor expectations of a low opportunity cost of purchasing utility stocks, as demonstrated by my cost of equity study estimates.

Q. HOW DOES TEXAS' ECONOMY COMPARE TO THE NATIONAL ECONOMY?

A. The Texas unemployment rate fell by 0.1 percent to 6.5 percent in June, which was higher than the national average of 5.9 percent. According to the Federal Reserve Bank of Dallas, other indicators suggest that there is not much labor market slack at this rate. Specifically, the June employment-to-population ratio of 59.7 percent in Texas was higher than the nation's ratio of 59.0 percent.[5] Also, the continued in-migration of residents from other states has created a surging demand for homes.

According to the Federal Reserve Bank of Dallas, the Eleventh District (an area shared by New Mexico and Texas) is undergoing a solid expansion, although the recent surge in COVID-19 cases has added uncertainty to such an outlook.[6] Texas manufacturing activity continued to expand at an above average pace in July and August. Most other sectors experienced continued growth with the exception of retail sales, which remained flat in July and rose in August. Wage growth has increased, reflecting a shortage of workers. Prices in general continue to rise, albeit at a slower pace than earlier in the summer.

Q. WHY IS THE TEXAS ECONOMY IMPORTANT TO INVESTORS?

A. In general, investors are aware of current regional and national economic conditions and know that the Company operates in Texas, where economic indicators are currently exhibiting signs of economic rebound. Investors will also gauge the Company's prospects for sales growth as they consider the state's economy. Investors would likely

[5] Federal Reserve Bank of Dallas, *Texas Economy Strongly Expands Despite Supply-Chain Disruption, Hiring Challenges*, August 5, 2020 https://www.dallasfed.org/research/economics/2021/0805

[6] US Federal Reserve Systems, *The Beige Book: Summary of Commentary on Current Economic Conditions by Federal Reserve District*, September 8, 2021, at K-1 and K-2.
https://www.federalreserve.gov/monetarypolicy/files/BeigeBook_20210908.pdf

compare Texas' economy to the economies of other states when deciding whether to invest in a similar utility company located elsewhere, all else being equal.

IV. RATE OF RETURN AND CAPITAL STRUCTURE

Q. PLEASE SUMMARIZE THE PROCESS OF ESTIMATING UTILITIES' COST OF CAPITAL.

A. The overall cost of capital is comprised of the costs of long-term debt and equity capital. The first step in estimating the cost of capital is to determine the appropriate capital structure. Long-term debt costs are computed using the Company's actual embedded costs for a certain time period (e.g., the test year). Unlike the debt component of the capital structure, the equity cost rate must be estimated. The overall WACC is computed by weighting individual costs of debt and equity capital by their respective proportions of total capitalization and summing the result.

The capital structure is particularly important because investors may view a high reliance on debt as risky (referred to as financial risk), thereby leading to a higher required ROE relative to similar investment opportunities. A high reliance on debt may be viewed as risky because it can contribute to earnings volatility. However, excessive equity, while reducing financial risk, may improperly increase the overall cost of capital (and therefore return on rate base) for customers.

Q. WHAT CAPITAL STRUCTURE IS THE COMPANY REQUESTING FOR USE IN THIS CASE?

A. The Company is requesting a hypothetical capital structure of 51.0 percent common equity and 49.0 percent long-term debt for establishing new return rates in this case. Based on this capital structure—a proposed embedded cost of long-term debt of 5.576

percent, and an ROE of 10.3 percent—EPE is requesting that the Commission allow the Company an opportunity to earn an WACC of 7.985 percent.

Q. WHAT WAS EPE'S LAST AUTHORIZED WEIGHTED AVERAGE COST OF CAPITAL AND ROE?

A. EPE's current WACC is 7.725 percent based upon a 5.922 percent cost of debt, an authorized ROE of 9.65 percent, and an authorized regulatory capital structure of 51.652 percent long-term debt and 48.348 percent equity, which was set by the Commission in its last rate case. These rates were set in EPE's last rate case, Docket No. 46831, which was filed in February 2017 and based on a Test Year ended September 30, 2016.[7] The case was resolved by an unopposed stipulation in December of 2017.[8]

Q. HOW HAS THE COMPANY'S CAPITAL STRUCTURE CHANGED SINCE ITS LAST RATE CASE?

A. There have been three long-term debt transactions that include the following: on June 28, 2018, the Rio Grande Resources Trust II ("RGRT") completed the sale of $65 million aggregate principal 4.07 percent Senior Guaranteed Notes due August 15, 2025; on June 28, 2018, EPE issued $125 million of 4.22 percent Senior Notes due August 15, 2028; and on May 22, 2019, EPE refinanced $63.5 million of 2009 Series A and $37.1 million of 2009 Series B 7.25 percent Maricopa County, Arizona Pollution Control Bonds ("PCBs") with a new interest rate of 3.60 percent. The Company has excluded the financial obligations of the RGRT from the debt component of the capital structure because nuclear fuel financed by the RGRT is

[7] *Application of El Paso Electric Company to Change Rates,* Docket No. 46831, Order ¶ 30 (December 18, 2017).
[8] Order, PUC Docket No. 46831, December 18, 2017.

excluded from the rate base. The 2009 Series A and the 2009 Series B PCBs mature on February 1, 2040, and April 1, 2040, respectively. The 2009 Series A and the 2009 Series B PCBs are subject to optional redemption at a redemption price at par on or after June 1, 2029.

On August 15, 2020, the RGRT's $45.0 million Series C 5.04 percent Senior Guaranteed Notes matured and were paid utilizing funds borrowed under the RCF.

EPE also received equity infusions from its parent Sun Jupiter Holdings LLC ("Sun Jupiter") of $124 million and $105 million on September 24, 2020, and on March 26 2021, respectively.[9]

Q. WHAT WAS THE COMPANY'S CAPITAL STRUCTURE AS OF DECEMBER 31, 2020, THE END OF THE TEST YEAR?

A. As of the December 31, 2020, the Company's capital structure was comprised of 52.5 percent equity and 47.5 percent long-term debt.

Q. WHY IS THE COMPANY NOT USING IN ITS CALCULATIONS THE CAPITAL STRUCTURE THAT EXISTED AT THE END OF THE TEST YEAR BUT A HYPOTHETICAL CAPITAL STRUCTURE?

A. According to Ms. Budtke, the Company has several financings on the horizon that would increase the long-term debt portion of the capital structure. The Company may seek to refinance $59.2 million of 4.50 percent 2012 Marcopa Series A PCBs, due in 2042, that are redeemable at par in August 2022. Also, the Company plans to replace the $150 million of 3.30 percent Senior Notes that will mature in December 2022.[10]

Q. DO YOU ACCEPT THE COMPANY'S PROPOSED CAPITAL STRUCTURE?

[9] Budtke Direct at 6.
[10] Id., at 6-7

A. Yes. I accept the Company's requested capital structure for ratemaking purposes given the proposed equity ratio is lower than the amount of equity contained in its actual capital structure as the end of the Test Year ending December 31, 2020. The proposed equity ratio reflects future debt issuances, dividend distributions and future equity infusions from Sun Jupiter. Since the cost of debt is typically less than the cost of equity, this requested capital structure will yield lower cost to customers, all else equal.

Q. IS THE COMPANY'S PROPSED CAPITAL STRUCTURE SUFFICIENT TO SUPPORT ITS CURRENT CREDIT RATING?

A. Yes. Ms. Budtke testifies that the proposed capital structure is sufficient to support the current credit rating. Specifically, she testifies that a 51 percent equity ratio supports the BBB corporate rating from Fitch.[11]

Q. WHAT IS THE BASIS OF THE COMPANY'S PROPOSED COST OF LONG-TERM DEBT?

A. The Company is proposing a cost of long-term debt of 5.576 percent, which is less than the 5.922 percent that was approved in the Company's 2017 Texas base rate case. This reduction in the cost of debt decreased the required return requested by the Company in this case by approximately $4.4 million.[12]

Q. WHY HAS EPE'S COST OF LONG-TERM DEBT DECREASED SINCE ITS LAST RATE CASE?

A. EPE has been able to lower its cost of long-term debt since the 2017 Texas base rate case due to several debt issuances that were accomplished at lower than historical costs. One of the primary issuances was for the refinancing of the Company's 2009 Series A and B PCBs. EPE refinanced the 2009 Series A and B notes when they became callable

[11] Id., at 11, Table LDB-2.
[12] Id., at 8:27-30.

at par. The refinancing dropped the interest rate on the $100.6 million of Series A and Series B PCBs from 7.25 percent to 3.60 percent, resulting in an annual interest savings of approximately $3.7 million. [13]

Q. DO YOU RECOMMEND THAT THE COMMISSION ACCEPT THE COMPANY'S REQUESTED LONG-TERM COST OF DEBT?

A. Yes. The Company's proposed cost of debt is reasonable when compared to the prevailing yields on equivalent long-term debt for utilities of similar risk profiles at the time of its issuances.

V. COST OF COMMON EQUITY CAPITAL

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDED ROE?

A. For ratemaking purposes, the cost of equity must be estimated because it cannot be directly observed, and it varies with changing financial market conditions. The cost of equity is the long-term annualized market return investors (in general) expect when they purchase equity shares of a particular company. It reflects the risk factors of that investment as compared to alternative investment opportunities and to investors' current opportunity cost of investing in the securities of that company (i.e., the investors' risk-adjusted alternatives).

Since EPE is a wholly-owned subsidiary of Sun Jupiter and is not a publicly traded company, it is not possible to directly apply cost of equity models to the Company. As an alternative, I calculate an estimate of EPE's cost of equity by deriving average expected market returns for a proxy group of regulated electric companies with comparable risk.

[13] Id., at 9:1-9.

Q. PLEASE DISCUSS THE DIFFERENT TYPES OF RISK THAT A REGULATED MONOPOLY, SUCH AS AN ELECTRIC UTILITY, MAY FACE.

A. An investor's expected return on an investment is composed of the risk-free rate and different types of risk, to include inflation risk, interest rate risk, business risk, financial risk, and regulatory risk.

The risk-free rate is the level of return investors can achieve without assuming any risk. In general, most investors agree that an asset perceived by the market as having relatively less risk than other market bonds is a U.S. Treasury bond, because the federal government's access to tax proceeds to fulfill its debt obligations and strong credit rating makes Treasury securities practically default-free. However, Treasury bonds are not absolutely risk-free because they incorporate a risk-premium associated with interest rate risk, which is the premium investors require to compensate them for the forgone opportunity cost of an alternative higher interest rate later.

Inflation risk, also called purchasing power risk, is the chance that the cash flows from an investment won't be worth as much in the future because of changes in purchasing power due to inflation.

Interest rate risk is the risk that arises for investors from the variability in returns caused by fluctuating interest rates, which depends on how sensitive its price is to interest rate changes in the market. For bonds, for example, its sensitivity depends on the bond's time to maturity and the coupon rate of the bond.

Business risk, as perceived by investors, includes all the operating factors that increase the probability that expected future cash flows accruing to investors may not be realized. Business risk would include such factors as sales volatility and operating leverage. A utility's business risk is a function of such factors as customer base

diversity, necessary capital expenditures, the regional and national economy, the regulatory environment in which it operates, and inflation.

Financial risk relates to the capital structure of a company, including its fixed contractual obligations and ability to pay interest on its debt and refinance that debt when it is due. Credit rating agencies assess the financial health of a company through the use of key financial ratios that measure the extent to which a company can pay its debt, including principal and interest. Corporate rating designations that are commonly used are shown in Table 2, which identifies rating categories used by Standard & Poor's ("S&P"), Fitch Ratings, Inc. ("Fitch"), and Moody's Investors Service ("Moody's"), for investment grade issuances.

Table 2. Rating Categories (Investment Grade)

S&P and Fitch	Moody's
AAA	Aaa
AA+	Aa1
AA	Aa2
AA-	Aa3
A+	A1
A	A2
A-	A3
BBB+	Baa1
BBB	Baa2
BBB-	Baa3

Regulatory risk is based on the investor's perceived understanding of the current regulatory environment along with possible changes to that regulatory environment. How regulators treat regulatory lag is one example of regulatory risk. To the extent that companies face a time lag between incurring expenses and cost recovery,

such risk is best measured by choosing a proxy group of companies that face similar regulatory oversight and earn the majority of their revenues from regulated operations.

Q. IN YOUR VIEW, DOES THE COMPANY FACE GREATER INFLATION RISK THAN OTHER REGULATED UTILITIES IN THE PROXY GROUP?

A. No. As mentioned previously, the risks associated with uncertainty regarding the staying power of the economic rebound post-COVID and the presence of high inflation are reflected in my proxy group's calculated costs of equity.

Q. IN YOUR VIEW, DOES THE COMPANY FACE GREATER BUSINESS RISK THAN OTHER REGULATED UTILITIES IN THE PROXY GROUP?

A. No. The Company would like the Commission to believe that it has greater business risk, and it has presented some information in that regard, which I discuss below. But, the overall point is this -the fundamental comparison here is to the sample group, and I see nothing particularly unique that would demonstrate conclusively that the Company has greater business risk than its peers in the sample group. Every utility is different, but compared to the sample, it has similar business risk.

Company witnesses Ms. Nelson and Ms. Budtke mention the Company's capital investment plans. Specifically, EPE projects approximately $1.64 million in planned capital expenditures over the 2021 to 2025 timeframe, equal to about 50 percent of EPE's total net utility plant as of the end of the Test Year. Such investment will require access to capital markets. However, the electricity utility sector in general is facing rapid change and the need to invest in infrastructure, thus this type of business risk and the need to access capital at reasonable debt and equity costs is reflected in my estimated ROE using a proxy group of companies facing similar risk.

Ms. Nelson also identifies EPE's generation of nuclear power as another source of business risk. EPE's generation portfolio includes 665 megawatts ("MW") of owned

nuclear generating capacity in its Palo Verde facility, which also represent about 49 percent of EPE's total generation in 2019.[14] She also avers that increasing oversight and regulatory requirements from the Nuclear Regulatory Commission may necessitate increased capital investments that would place yet more pressure on EPE's cash flow and credit metrics.

Q. DOES THE COMPANY IDENTIFY OTHER TYPES OF BUSINESS RISK?

A. Mr. Nelson also contributes the Company's relatively small size to business risk due to a lack of liquidity (i.e., the risk of not being able to sell one's shares in a timely manner due to the relatively thin market for the securities); and its operations are smaller in size and less diversified. Although Ms. Nelson attempts to quantify this risk of 1.09 percent to 1.37 percent based on equivalent capitalization, she does not add her estimate to her ROE recommendation and only considers such risk when weighing her higher estimates when making a recommendation to the Commission. [15]

Q. DO YOU BELIEVE THAT THE COMPANY'S SIZE IS A SOURCE OF RISK THAT SHOULD BE CONSIDERED BY THE COMMISSION IN RENDERING ITS ROE DECISION?

A. No. I do not believe that the Company's size is a source of risk. The Company does not face liquidity relative to the companies in Ms. Nelson's proxy group because it has access to the parent company's revolving loan fund or credit facilities.

There also exists a body of finance literature that refutes the relationship between a firm's size and its risk. A paper by Professor Jonathan Berk of the University of Washington found that "[W]e fail to find evidence to support the hypothesis that there is a cross-sectional relation between firm size and expected return… Taken

[14] Nelson Direct, at 55:1-8.
[15] Id., at 61-62.

together, the results in this paper are evidence against the hypothesis that firm size proxies for exposure to specific risk factors."[16] In a paper published in the Journal of Portfolio Management, the authors conclude that "this [small firm] anomaly did not persist, that the outperformance of smaller companies vanished, and that the out-of-sample small firm premium turned negative."[17]

Q. WHAT DO YOU CONCLUDE, THEREFORE, ABOUT MS. NELSON'S CLAIM THAT COMPANY SIZE IS AN INDICATOR OF RISK?

A. I would conclude that Ms. Nelson's claim is incorrect and based upon a very old and very well-refuted hypothesis. For this reason, the Commission should disregard her generalizations about firm size being related to risk.

Q. IN YOUR VIEW, DOES THE COMPANY FACE GREATER FINANCIAL RISK THAN OTHER REGULATED UTILITIES IN THE PROXY GROUP)?

A. No. EPE faces similar financial risk as the companies in my proxy group. (*See* Exhibit MLR-4.) I control for financial risk by choosing representative electric utilities with credit ratings similar to those of EPE. According to the Company's filing, EPE has a corporate credit rating of Baa2 with a Stable outlook from Moody's and a credit rating of BBB with a Stable outlook from Fitch Ratings.[18]

Q. IN YOUR VIEW, DOES THE COMPANY FACE GREATER REGULATORY RISK THAN OTHER REGULATED UTILITIES IN THE PROXY GROUP?

A. No. The Company faces similar regulatory risk as the other companies in my sample group. The Company has alleviated regulatory risk (and regulatory lag) in the

[16] Berk, Jonathan, "An Empirical Re-Examination of the Relation between Firm Size and Return," Department of Finance, University of Washington, Working Paper 93-BJ-001, October 9, 1996.
[17] Dimson, Elroy and Paul Marsh, "Murphy's Law and Market Anomalies," *Journal of Portfolio Management*, August 1998.
[18] Nelson Direct, at 30, Table 5.

recovery of costs by including in its petition to the Commission a series of *pro forma* adjustments for its generation resource transition, rate base, revenue, and expense changes. *Pro forma* adjustments are adjustments to the recorded test year for actual non-repeating occurrences or for events that did not occur during that test year.

The Company also has a series of adjustment factors (rate clauses or riders) that allow it to collect revenues to recover certain costs in between rate cases under 16 Texas Administrative Code §§ 25.239, 25.243, and 25.248. For example, EPE's proposed revenue increase of $69.7 million will be offset by a $27.9 million decrease in annualized Transmission Cost Recovery Factor and Distribution Cost Recovery Factor revenues. Thus, EPE's net proposed retail revenue increase is $41.8 million. EPE expects to continue to file DCRF and TCRF cases on an annual basis, so they are likely to become a regular action by EPE.[19] EPE also seeks to set a baseline for generation costs in between rate cases through the Generation Cost Recovery Rate to address ratemaking for EPE's newest gas-fired generation unit, Newman Unit 6, which is expected to begin commercial operation in May 2023.[20] The Company also proposed a COVID-19 rider to recover acreages, bad debt, and other costs incurred during the COVID-19 Pandemic.

Q. PLEASE BRIEFLY DESCRIBE HOW MS. NELSON CHOOSES THE COMPANIES FOR HER REPRESENTATIVE SAMPLE.

A. Ms. Nelson begins with the group of domestic companies that *Value Line* classified as electric utilities, and she applies a series of criteria to include companies that:

- Pay consistent quarterly cash dividends over the past five years;

[19] Schichtl Direct, at 32: 9-17.
[20] Id., at 5:10-14.

- Have been consistently covered by at least two utility industry equity analysts;
- Have investment grade long-term issuer ratings from both S&P and/or Moody's;
- Are vertically integrated companies (i.e. utilities that own and operate regulated generation, transmission, and distribution assets);
- Derive more than 60 percent of their net operating income from regulated operations;
- Derive more than 60 percent of their net operating income from regulated electric operations, on average, over the last three years; and
- Were not party to a merger or other transformative transaction.[21]

As a result of applying the above criteria, Ms. Nelson's proxy group consists of 21 electric utilities.

Q. DO YOU MAKE ANY ADJUSTMENTS TO MS. NELSON'S PROXY GROUP?

A. No. I use her sample, because I do not disagree with the qualitative and quantitative criteria of her screens. The companies in her sample meet criteria that I would have employed, such as a credit-rating criteria that requires companies in the sample to have a similar credit rating as the Company and its Parent. As stated previously in this testimony, EPE is currently rated Baa2 by Moody's and BBB by Fitch. Thus, the majority of companies in my sample have similar corporate ratings. (*See* Exhibit MLR-4.) I also require companies in my sample to have no ongoing involvement in a major merger or acquisition, and no cuts in dividend payments, and the companies in Ms. Nelson's proxy group meets these criteria as well. I exclude firms involved in any significant merger or acquisition activity because the market values of such firms differ significantly from those companies not involved in such activities. This difference

[21] Nelson Direct, at 30-31.

would be reflected in a company's stock price and dividend yields, which would distort the estimated cost of equity. I also exclude companies that have recently cut dividend payments to shareholders because such a management decision is usually perceived by investors as a sign of financial distress.

Q. WHICH COMPANIES DO YOU INCLUDE FROM MS. NELSON'S SAMPLE?

A. I use all the utilities in Ms. Nelson's proxy group. My proxy group includes the following companies: ALLETE, Inc.; Alliant Energy Corporation; Ameren Corporation, American Electric Power Company, Inc.; Avista Corporation; CMS Energy Corporation; DTE Energy Company; Duke Energy Corporation; Entergy Corporation; Evergy, Inc.; Hawaiian Electric Industries, Inc., IDACORP, Inc.; NextEra Energy, Inc., NorthWestern Corporation; OGE Energy Corp.; Otter Tail Corporation; Pinnacle West Capital Corporation; Portland General Electric Company; The Southern Company; WEC Energy Group, Inc.; and Xcel Energy Inc. (*See* Exhibit MLR-4.)

VI. METHODOLOGIES

Q. WHAT METHODOLOGIES DO YOU USE TO DERIVE YOUR COST OF EQUITY RECOMMENDATION?

A. I use variants of the constant-growth DCF model to form the range of my recommendation of an 8.61 percent to 9.35 percent ROE. Although the mid-point of my range is 8.98 percent, my point recommendation is based on the maximum of 9.35 percent for EPE.

Q. WHAT IS THE PREDOMINANT ROE MODEL UTILIZED BY REGULATORY BODIES IN THE UNITED STATES?

A. For decades, the Federal Energy Regulatory Commission ("FERC") and public utility commissions across the United States have relied primarily on the DCF model to develop a range of returns earned on investments in companies with corresponding risks for purposes of determining the ROE for regulated entities. Although I use variants of the constant-growth DCF model, the CAPM and the Comparable Earnings Model, I rely on my constant growth DCF to form the basis of my recommendation of an 9.35 percent ROE for EPE.

A. Constant-Growth Discounted Cash Flow Model

Q. PLEASE DESCRIBE THE CONSTANT-GROWTH DCF MODEL.

A. The Constant-Growth DCF model is based on the dividend discount model first proposed by J.B. Williams in 1938.[22] The model is based on the premise that since cash dividends are the only income from a share of stock held to infinity, the value of that stock will be the present value of its stream of dividends, where the discount rate is the market's required return. The model can be modified to take into account the (more common) situation whereby shares of stock are bought and sold, producing capital gains income in addition to dividend income. In order to simplify the mathematics of the model, expected future dividends are represented by applying a constant growth rate to the current observable dividend. Mathematically, the present value of an asset (common stock) is expressed as:

$$P_0 = \frac{D_1}{(K-g)},$$

Where:

[22] J.B. Williams, *The Theory of Investment Value* (1938), at 45-48.

D_1 is the dividend payment in one year from today or the expected dividend;
K is the rate of return used by investors to discount future dividends; and
g is the growth rate of the dividend payment.

The estimated cost of equity, K, is specified as:

$$K = \frac{D_1}{P_0} + g ,$$

Where:

D_1 is the expected dividend, represented by $D_1 = D_0(1 + g)$,

Where:

D_0 is the current annual dividend per share.

Therefore, the market return on equity capital is the sum of the dividend yield (anticipated dividend payments divided by the market price) and the expected growth in dividend income.

Q. PLEASE DESCRIBE HOW YOU DERIVE THE DIVIDEND YIELD COMPONENT OF YOUR DCF ANALYSIS.

A. The dividend yield in my DCF analysis is the annual dividend per share over the next 12 months, divided by the stock price average for different historical periods ended September 30, 2021. I first calculate my dividend yields using the 30-day average of closing stock prices. I also use a 90-day average of closing stock prices for capturing longer market trends.

In general, the most recent price of a security can be used to calculate the dividend yield because it represents current valuations in equity markets, calculating an average over time to mitigate any irregularities as necessary; however, using the average of a range of dates (e.g., 30 and 90 days) helps reduce the bias that might occur from day trading-driven irregularities or short-term volatility. (*See* Exhibits MLR-5a through MLR-6f.) The average 30-calendar day stock price for my sample is $72.12

per share, which is less than the 90-calendar day average stock price of $72.81 per share.

I then estimate the expected dividend yield by applying the growth rate component of my Constant-Growth DCF analysis. I use three variants for calculating the growth rate component that I will discuss later in my testimony. These methods produce a range of expected (year-ahead) dividend yields from 3.49 percent to 3.56 percent using my sample. (*See* Exhibits MLR-5a through MLR-6f).

Q. PLEASE DESCRIBE THE GROWTH RATE COMPONENT OF YOUR DCF ANALYSIS.

A. My first set of growth rates is based on published earnings per share ("EPS") forecasts, because investors typically view earnings growth as an indicator of dividend growth. Unlike Ms. Nelson, however, I believe that investors also incorporate other sources of information when setting their expectations of dividend growth, which I will discuss shortly.[23]

I calculate the estimated earnings growth rates by taking the average of analysts' forecasts (which typically cover roughly the next five years) from *Value Line*, Zacks Investment Research ("Zacks"), YahooFinance, and CNNMoney. CNNMoney, Zacks and YahooFinance websites, which are publicly available, report results incorporating forward-looking surveys of securities analysts' EPS projections. *Value Line*, in contrast, uses a historical base period average value for 2018-2020 and a forecast of 2024-2026 to calculate its growth rates, and is not a survey. The average expected earnings growth rate using my sample of companies is 5.53 percent. (*See* Exhibits MLR-5a and MLR-5c.) Ms. Nelson uses the same data sources yielding an

[23] Ibid., at 47.

average expected earnings growth rate of 5.75 percent for her sample, which differs slightly because she uses data points reported earlier this year.

When I use only expected EPS growth rates, my proxy group average median DCF results range from 9.25 percent to 9.35 percent. These results are not very different from Ms. Nelson's median constant-growth DCF results that range from 9.37 percent to 9.51 percent using only earnings growth rates.[24]

I also develop an alternative growth rate by averaging *Value Line's* dividends per share ("DPS") and book value per share ("BVPS") estimates with the previously estimated earnings growth rate projections weighted equally. I include these three components of growth in my alternative analysis because investors are not only concerned with dividend growth but also earnings and book value growth as an assurance that dividend growth will be sustained. Moreover, dividend growth rates are more stable than expected earnings growth. These calculations produce an average growth rate of 4.91 percent. (*See* Exhibits MLR-5b and MLR-5d.)

Q. DO YOU REACH THE SAME RESULTS AS MS. NELSON? IF NOT, WHY DO YOUR RESULTS DIFFER FROM MS. NELSON'S?

A. No. When I incorporate DPS, BVPS and EPS growth estimates in my constant growth DCF, my results range from 8.43 percent to 8.50 percent. Unlike Ms. Nelson, I incorporate other financial information by averaging my earnings growth rates with DPS and BVPS for average growth rates that equals 4.91 percent.

[24] Nelson Direct Testimony, at Exhibit JEN-2.

B. Sustainable-Growth Discounted Cash Flow Model

Q. DO YOU EMPLOY OTHER METHODS TO DERIVE GROWTH RATES IN YOUR DCF MODEL?

A. Yes. I also use the sustainable growth method to estimate the rate of dividend growth. The standard DCF model assumes only one source of equity financing, namely the retention of earnings. Growth in earnings and dividends, however, can also be achieved by the sale of new common equity.[25] The basic Constant-Growth DCF model of:

$$K = \frac{D_1}{P} + g$$

can be rewritten to assume that external sources of financing influence investor expectations of dividend growth and is represented as the following:

$$K = \frac{D_1}{P} + br + sv$$

Therefore:

$$G = br + sv,$$

Where:

G is the retention growth rate;

r is the earned rate of return;

b is the portion of retained earnings or 1 minus payout ratio;

s represents the funds raised from the sale of stock as a fraction of existing common equity; and

v is the fraction of funds raised from the sale of stock that accrues to current shareholders.

[25] This expanded version of the DCF model allows for the value of stocks to vary from book values. If the stock prices equal book value, then the equity held by new shareholders is equal to the funds they invest and the existing shareholders' equity is not changed. If, however, stock prices are greater than book value, a portion of the funds accrues to the existing shareholders, thereby increasing their expectations of dividend growth in the future. David Parcell, *The Cost of Capital – A Practitioner's Guide* (2010) at.144-145.

I use *Value Line* expectations regarding retention ratios and ROEs for five years into the future to derive estimates for *b* and *r*, which in turn are used to calculate the expected internal growth component, *br*. To incorporate external financing growth, *sv*, I use *Value Line* data to derive the market-to-book ratio (which is an actual, observed figure) and expected growth in the number of outstanding shares. The average sustainable growth rate for my proxy group is 4.67 percent (30-day stock prices) and 4.68 percent (90-day stock prices). (*See* Exhibits MLR-6c and MLR-6f.)

When I employ my DCF model using only my sustainable growth rates, I derive median ROE results of 7.87 percent (30-day stock prices) and 7.92 percent (90-day stock prices).

Q. WHY DO YOU THE MEDIAN ROE RESULTS AS THE BASIS OF YOUR RECOMMENDATION IN LIEU OF THE AVERAGE OF YOUR PROXY GROUP?

A. In lieu of simply relying on my proxy group average (or mean) results, I use my median results as a basis for my recommendation because my proxy group results include extreme outliers and, therefore, I use the median to determine the central tendency of the proxy group. When I rely on the mean, which includes all the ROE results, the average ROEs are lower.

Q. PLEASE SUMMARIZE YOUR DCF MODEL RESULTS.

A. As shown in Table 3 below, I employ three different methods for deriving the growth rate in the DCF model, yielding three sets of estimates of the ROE for my proxy group. First, I use the constant growth DCF model using only EPS growth rates. When I assume that investors are only concerned with earnings growth when valuing a company's stock, thereby only using EPS growth in the DCF model, I derive median

ROE estimates of 9.35 percent (30-day stock prices) and 9.25 percent (90-day stock prices). (*See* Exhibits MLR-5a, and MLR-5c.)

Second, I use the constant growth DCF model using EPS, DPS, and BVPS growth rates. Once I allow for other sources of growth, such as DPS and BVPS growth rates, to influence investors' expectations of the return on a particular equity, my analyses yield lower results. For instance, adding DPS and BVPS growth results in median ROE estimates of 8.50 percent (30-day stock prices) and 8.43 percent (90-day stock prices). (*See* Exhibits MLR-5b and MLR-5d.)

Third, I use the sustainable growth DCF model. When I allow for both internal and external funding sources to drive growth in investor income, for my sustainable growth rate model, I derive median ROE results of 7.87 percent (30-day stock prices) and 7.92 percent (90-day stock prices). (*See* Exhibits MLR-6c and MLR-6f.) The overall range of ROE estimates using my DCF is 7.87 percent to 9.35 percent, with an average of 8.61 percent. (*See* Table 3 below.)

Table 3. Reno Constant Growth DCF Results

Estimated Return on Equity	**ROE (%)**	
DCF Methodology	30-Day Stock Price	90-Day Stock Price
Constant Growth DCF (EPS Growth)	9.35%	9.25%
Constant Growth DCF (DPS, EPS and BVPS)	8.50	8.43
Sustainable Growth DCF	7.87	7.92
DCF Range (Min. & Max.)[1]	**7.87%**	**9.35%**

[1] ROE range (minimum and maximum values) for the 30-day and 90-day DCF results.

Q. DO YOU REACH THE SAME RESULTS AS MS. NELSON? IF NOT, WHY DO YOUR RESULTS DIFFER FROM MS. NELSON'S?

A. Table 3 above shows my proxy group median DCF results that range from 7.87 percent to 9.35 percent. These results are not very different from Ms. Nelson's median constant-growth DCF results that range from 9.37 percent to 9.51 percent using only earnings growth rates.[26]

Q. DOES YOUR METHODOLOGY FOR CALCULATING THE DCF GROWTH RATE DIFFER FROM THAT OF MS. NELSON?

A. Yes. The major differences in our constant growth DCF methodologies is that she relies on earnings growth rates and calculates her ROE estimates using growth rates based on her lowest, average (or mean), and highest growth rates. Ms. Nelson relies solely on analysts' estimates of earnings growth. Applying Ms. Nelson's methodology of using a growth rate comprised of only EPS growth yields over the 30-day and 90-day periods consistent with my analysis generates ROE results of 9.35 percent and 9.25 percent, respectively, as shown above. Since the DCF estimate is derived from the concept that cash dividends are the only income from a share of stock, in principle, the growth component should only include dividends. Investors, however, are also concerned about whether dividends are sustainable, and they realize that dividend growth sustainability is affected by earnings and book value growth. As a result, investors may not necessarily use a single growth estimate when valuing a utility's stock. Therefore, I believe it appropriate to include other measures for the growth component in my analysis.

Q. DO YOU HAVE ANY CONCERNS REGARDING MS. NELSON'S DCF ANALYSIS?

[26] Nelson Direct, at 3, Table 1.

A. Yes. Ms. Nelson's Constant-Growth DCF and Quarterly DCF analyses seem to place great weight on results derived using the highest growth rates, thereby inflating her overall DCF based results. Specifically, Ms. Nelson calculates a series of Mean Low ROE, Mean ROE, and High ROE estimates, with each using a particular growth rate. For instance, the Low ROE estimate uses only the minimum of her three sets of earnings growth rates, and her High ROE estimate employs the highest growth rate. Her Mean ROE estimate uses the mean or the average of all three of her growth rates. For instance, her Constant Growth DCF yields a range of ROE estimates from 8.67 percent (Low) to 10.07 percent (High) when her Mean ROE results range from 9.43 percent of 9.52 percent. For her Quarterly Growth DCF, her results range from 8.71 percent (Low) to 10.23 percent (High). Using Mean growth rates, Ms. Nelson's Quarterly Growth DCF estimates range from 9.57 percent to 9.69 percent.[27] These results are similar to my DCF results using EPS growth rate as discussed previously. Despite these results, Ms. Nelson places more weight on the DCF results employing the highest growth rates.

Q. DO YOU AGREE WITH MS. NELSON THAT RELYING EXCLUSIVELY ON HISTORICAL INPUTS AND ASSUMPTIONS IN THE DCF MODEL UNDERESTIMATES THE COMPANY'S ROE?

A. No. Ms. Nelson states that relying exclusively on the historical average of abnormally high stock prices results in low dividend yields, thus resulting in unreliable ROE estimates using the DCF model.[28] However, *Value Line* reports that most electric utility stocks have fared better as of late, with the average dividend yield for this industry at 3.4 percent, which is almost twice the median for dividend-paying stocks covered by

[27] Ibid.
[28] Ibid., at 7.

The Value Line Investment Survey.[29] The DCF and its inputs merely reflect the defensive nature of utility stocks as income-oriented investors "reach for yield," particularly as the yields on debt securities remain near historic lows.

C. Capital Asset Pricing Model

Q. DO YOU USE ANY OTHER METHODOLOGIES TO ESTIMATE THE ROE FOR THE COMPANY?

A. Yes. Like Ms. Nelson, I apply the CAPM and the ECAPM to derive a total of six ROE estimates.

Q. DESCRIBE THE CAPM YOU ALSO USE TO CALCULATE THE COST OF EQUITY.

A. The CAPM is a version of the "risk premium" approach that is rooted in modern portfolio theory. It recognizes that common equity capital is riskier than debt from an investor's perspective, and that investors require higher returns on stocks than on bonds to be compensated for the additional risk.[30] The cost of common equity is represented by the following equation:

$$K_e = R_f + \beta_s * RP,$$

Where:

K_e is the cost of equity;

R_f is the yield on risk-free securities;

RP is the ERP demanded by shareholders to accept equity relative to debt; and

β_s or Beta coefficient ("Beta") is a company-specific measure that reflects the movement in a company's stock price relative to movements in a composite group of companies representing the stock market. Beta measures the

[29] Value Line, *Electric Utility (Central) Industry* (Sept. 10, 2021).

[30] The CAPM is generally superior to the simple risk premium method because the CAPM recognizes the risk of a particular company or industry through the use of beta, whereas the simple risk premium method assumes the same risk premium for all companies exhibiting similar bond ratings.

investment risk that cannot be eliminated by holding a diverse portfolio of assets.

Q. PLEASE DESCRIBE THE RISK-FREE RATE YOU USE IN YOUR CAPM ANALYSIS.

A. The first term in the CAPM is the risk-free rate (R_f). I use the yield on the 30-year T-bond observed over a recent 30-day period ended September 30, 2021. I have estimated the 30-year T-Bond rate to be 1.94 percent, based on recent market information.[31] I also include in one of my CAPM analyses the Duff & Phelps Normalized Risk-Free Rate of 2.50 percent.

Q. DOES YOUR RISK-FREE RATE DIFFER FROM THE RISK-FREE RATE USED BY MS. NELSON?

A. Yes. Ms. Nelson favors high forecasted yields on the 30-year Treasury bonds over current rates, thereby inflating her CAPM and Empirical ("ECAPM") ROE estimates. Specifically, she uses two sources for her risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds of 2.31 percent and (2) a projected 30-year U.S. Treasury bond yield of 2.88 percent. Her projected risk-free rate is the average rate for the six quarters ended Q3 2022 and the average long-term projected 30-year Treasury yield for the years 2022-2026 and 2027-2031 reported in the April 1, 2021 and December 1, 2020 editions of *Blue Chip Financial Forecast*.[32] Such yields do not reflect the current market levels of risk-free rates of about 1.94 percent, using the 30-day average of the yield on the 30-year Treasury bond, ended September 30, 2021.

Not only do these yields inflate Ms. Nelson's CAPM average results that range from 12.71 percent to 12.78 percent and median results of 12.42 percent to

[31] Federal Reserve, *Selected Interest Rates (Daily), available at* https://www.federalreserve.gov/releases/h15/
[32] Nelson Direct, at 42, footnote 73.

12.51 percent, they also drive up her ECAPM average results, which range from 13.08 percent to 13.14 percent and median results of 12.87 percent to 12.93 percent.

Q. DO YOU RELY ON ANY FORECASTS OF RISK-FREE RATES IN YOUR ANALYSIS?

A. Yes. Like Ms. Nelson, I use a forecasted risk-free rate in addition to the current average of the 30-year Treasury bond rate. Specifically, when I employ the Duff & Phelps Recommended US ERP, I use the corresponding Duff & Phelps Normalized Risk-Free Rate, because they are estimated in relation to each other.[33]

Q. HOW DO YOU CALCULATE THE ERP?

A. In each of my three CAPM analyses, I use different estimates of the ERP that range from 5.50 percent to 7.25 percent provided by Duff & Phelps' *SBBI Yearbook*. For the high end of this range, I use the Duff & Phelps estimate of historical arithmetic average real market return over the period 1926 to 2020, which is the total return on common stocks (S&P 500) including capital appreciation, less the income returns on Treasury bond investments. [34] (*See* Exhibits MLR-7a and MLR-7b.)

Duff & Phelps also provides an updated Ibbotson & Chen supply-side model, which found that the market risk premium based on the S&P 500 was influenced by an abnormal experience of price-to-earnings ("P/E") ratios relative to earnings and dividend growth over the last 30 years. Thus, Duff & Phelps adjusted this market risk premium and published a long-horizon supply-side market risk premium of 6.0 percent.[35] (*See* Exhibits MLR-7c and MLR-7d.)

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[33] *Duff & Phelps Recommended U.S. Equity Risk Premium Decreased from 6.0% to 5.5%, Effective December 2020: Client Alert*, issued December 9, 2020.
[34] *Duff & Phelps, 2021 SBBI Yearbook, Stock, Bonds, Bills and Inflation*, p. 10-7, Exhibit 10.8.
[35] *Duff & Phelps, 2021 SBBI Yearbook, Stock, Bonds, Bills and Inflation*, p. 10-31, Exhibit 10.13.

Duff & Phelps also recommends a forward-looking ERP that was derived in conjunction with a normalized risk-free rate. Therefore, my final CAPM analysis uses the Duff & Phelps Recommended US ERP of 5.50 percent and Normalized Risk-Free Rate of 2.50 percent.[36] (*See* Exhibits MLR-7e and MLR-7f.) Therefore, the estimated ERP used across my three CAPM methods ranges from 5.50 percent to 7.25 percent. This upper bound is within the historical range of 5 percent to about 8 percent found in the finance literature.[37]

Q. DO YOU CALCULATE AN ERP IN THE SAME WAY AS MS. NELSON?

A. No. Although the S&P 500 is a popular index used by the investment community to estimate overall market returns, Ms. Nelson uses the DCF with forecasted earnings, yielding market returns that overestimate expectations of market risk.

Q. HOW DO YOU ADJUST THE EQUITY RISK PREMIUM TO ACCOUNT FOR COMPANY-SPECIFIC RISK?

A. I multiply company-specific betas to the equity risk premiums to account for company-specific risk. Specifically, I rely on *Value Line* betas because *Value Line* is widely used by the utility regulatory community and investment community in general. It is also known that *Value Line* adjusts its betas to account for the long-term tendencies of stocks to converge to a beta of one (1.0).[38] As a result, *Value Line* betas tend to have higher values than betas provided by some other sources. The average *Value Line* beta for my proxy group is 0.89. A beta value of 0.89 means that the stock price movement

[36] *Duff & Phelps Recommended U.S. Equity Risk Premium Decreased from 6.0% to 5.5%, Effective December 2020: Client Alert*, issued December 9, 2020.
[37] Richard Brealy et al., *Principles of Corporate Finance* (2017) at 164.
[38] Marshall Blume investigated the regression tendency of betas and reached the conclusion that betas have the tendency to approach a value of one (1) over time. That is, high-beta portfolios tend to decline over time toward one (1), while low-beta portfolios increase to one (1). Marshall Blume, "Betas and Their Regression Tendencies," *Journal of Finance* (1975) at 785-796.

for my proxy group is less than the movement in percentage terms than the stock market as a whole. The stock is, therefore, less volatile than the overall market.

The cost of equity is the sum of the risk-free rate and the beta-adjusted ERP (ERP multiplied by my sample's average beta). I estimate beta-adjusted ERPs ranging from 4.90 percent to 6.46 percent. Adding these beta-adjusted ERPs to the risk-free rate, I estimate expected returns ranging from 7.28 percent to 8.39 percent (*See* Table 4 below). (*See* Exhibits MLR-7b, MLR-7d, and MLR-7f.) (*See also* Table 4 in my testimony.)

D. Empirical Capital Asset Pricing Model

Q. DO YOU PERFORM ADDITIONAL CAPM ANALYSES?

A. Yes. The simple CAPM has been criticized for underestimating the ROE for companies with betas less than 1 and overestimating the ROE for companies with betas greater than 1. Therefore, use of the ECAPM has gained popularity as a means to correct this under- or over-estimation problem, by applying an adjustment factor to increase the intercept and reduce its slope.

Q. PLEASE EXPLAIN THE ECAPM THAT YOU USE IN YOUR ANALYSES.

A. The ECAPM that I apply includes an adjustment factor "x" as shown in the following modified CAPM equation.

$$K_e = R_f + x(RP) + (1 - x)\beta(RP)$$

Where:

The *x*-term multiplied by the risk premium increases the intercept (the risk-free rate), while (*1-x*) decreases the slope of the equation.

Q. HOW IS THE VALUE OF X DETERMINED?

A. X is equal to 0.25, such that (1-X) is 0.75. Therefore, the only difference between the traditional CAPM and the ECAPM is that the beta-adjusted ERP is weighted by 0.75, while the market risk premium is weighted by 0.25, resulting in the following equation.

$$K_e = R_f + 0.25(RP) + 0.75\beta(RP)$$

Q. WHAT ARE THE RESULTS OF YOUR ECAPM ANALYSES?

A. Applying the same risk-free rates, market risk premium, and betas from the proxy group, I estimate expected returns ranging from 7.55 percent to 8.59 percent (*See* Table 4).

Table 4. Capital Asset Pricing Models – Estimated Return on Equity

	ERP	Beta-Adjusted ERP	Risk-Free Rate	CAPM ROE	ECAPM ROE
CAPM (Historical L-T ERP)	7.25	6.46	1.94	8.39%	8.59%
CAPM (Supply-Side Hist. L-T ERP)	6.0	5.34	1.94	7.28%	7.44%
CAPM (Duff & Phelps Recommended ERP)	5.50	4.90	2.50	7.40%	7.55%

Q. DO YOU REACH THE SAME RESULTS AS MS. NELSON? IF NOT, WHY DO YOUR RESULTS DIFFER FROM MS. NELSON'S?

A. My results shown in Table 4 are lower than Ms. Nelson's CAPM results, which range from 12.42 percent to 12.78 percent, and her ECAPM results, which range from 12.87 percent to 13.14 percent.

Q. DO YOU HAVE ANY CONCERNS REGARDING MS. NELSON'S CAPM AND ECAPM ANALYSES?

A. Yes. Ms. Nelson's estimated market risk premiums are overstated because they do not reflect a reasonable estimate of the expected equity returns. In her CAPM and ECAPM

analyses, Ms. Nelson calculates her Market Risk Premiums based on the expected total return on the S&P 500 Index less the 30-year Treasury bond yield. She estimates the expected total return on the S&P 500 Index using her DCF analyses for companies listed in the S&P 500 for which dividend yields and long-term growth estimates are available. Ms. Nelson seems to rely solely on earnings growth projections in her DCF analyses, although Exhibit JEN-4 does not explicitly clarify whether "Long-term Growth Est." in column 5 is earnings growth. Applying such growth rates in her CAPM produces estimated required annual market returns for the S&P 500 Index of 14.21 percent (Value Line) and 15.92 percent (Bloomberg). As a result, her market risk premium using the market return of 14.21 percent yields risk premiums of 11.9 percent (using the then current 30-year T-bond yield of 2.31 percent) and 11.32 percent (using a projected 30-year T-bond yield of 2.88 percent). These market returns and resulting risk premiums are too high.

Q. WHY DO YOU CONSIDER MS. NELSON'S MARKET RISK PREMIUM TOO HIGH?

A. Ms. Nelson's estimated market risk premiums do not match investors' current expectations. Market analysts have recently stated that the current expectation of U.S. equity markets is for about a 5 percent to 8 percent annualized return. Moreover, the Federal Reserve Bank of Philadelphia reported earlier this year that the average (mean) forecast of expected stock returns (S&P 500) over the next ten years is 5.08 percent, with a maximum of 8.0 percent.[39]

Q. WHAT OTHER MODELS DOES MS. NELSON USE TO ESTIMATE AN ROE?

A. Ms. Nelson employs a Bond Yield Plus Risk Premium Analysis, which defines the ERP as the difference between the authorized ROE and the yield on 30-year Treasury bonds. She gathers data for 1,658 electric utility rate proceedings between January 1, 1980 and March 31, 2021 and also calculates the average 30-year T-bon yield over the average period between the filing of each case and the data of the final order. Ms. Nelson then applies regression analysis to estimate the relationship between these allowed returns (dependent variable) and the risk-free rate (independent variable). Using a semi-log equation, she shows that there is a statistically, negative relationship between the 30-year T-bond yields and the equity risk premium – that is, as T-bond yields fall allowed returns increase. She estimates an ROE of 9.81 percent using this method.

[39] Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters: First Quarter 2021* at 19, Table 9, *available at* https://www.philadelphiafed.org/-/media/frbp/assets/surveys-and-data/survey-of-professional-forecasters/2021/spfq121.pdf

E. Comparable Earnings Model

Q. DO YOU EMPLOY OTHER METHODOLOGIES FOR YOUR ROE ESTIMATE FOR THE COMPANY?

A. Yes. I use the Comparable Earnings Model ("CEM"). A CEM estimate is derived from the "corresponding risk" standard of the *Hope* and *Bluefield* cases and is based on the economic concept of opportunity cost. The cost of capital is an opportunity cost whereby a company's return represents a return available from alternative investments of similar risk. I use the CEM by examining realized ROEs for my proxy group and comparing investor acceptance of these returns via corresponding market-to-book ("M/B") ratios. The M/B ratio is the stock price divided by the BVPS and shows the degree to which a given level of ROE equals the cost of capital. An M/B of greater than one (1) shows that a company can attract new equity capital without dilution.

Using market-based information via the M/B ratios, I show that historical ROEs have attracted investors to purchase shares of utility stock. I calculate historical M/B ratios using average annual stock prices and the *Value Line* reported BVPS data from 2011 through 2020. (*See* Exhibit MLR-8c.) My results show that the companies in my proxy group were successful in attracting investors given reported historical, book value-derived ROEs. Even in cases where a company's ROEs were as low as 6.91 percent (Duke Energy Corp.), a company's stock was valued higher than book value as demonstrated by M/B ratios greater than one (1) at 1.30. For my proxy sample, the median M/B ratio is 1.63 and median historical ROE is 9.59 percent. By way of comparison, the median *Value Line* forecasted ROE (2024-2026) for my sample is 10.50 percent. (*See* Exhibit MLR-8e.)

Q. HOW DO YOUR CEM RESULTS RELATE TO YOUR DCF, CAPM, AND ECAPM RESULTS?

A. My CEM results demonstrate that my ROE estimates discussed earlier reflect current market expectations and will attract investors.

Q. DO YOU RELY ON ANY ONE MODEL MORE THAN THE OTHERS?

A. Yes. Although I employ the DCF, CAPM, and the CEM models for estimates, my recommended ROE is driven estimates derived using the DCF model because my average DCF result is the basis for my minimum and the maximum of my DCF results is also the maximum of my recommended ROE range. My recommended ROE is the maximum of my range.

Q. WHY IS YOUR ROE RECOMMENDATION OF 9.35 PERCENT BASED ON YOUR DCF METHODOLOGIES?

A. I place more emphasis on my DCF-derived results because it is widely used by both the finance community and public utility commissions and yields more reliable results. It is a forward-looking model that directly incorporates investors' expectations of company dividend income through market pricing signals, particularly in the case of utility stocks where stock valuations are telling a different story than the general market.

The CAPM model, in contrast, is largely reliant on financial market outcomes complicated by monetary policy and near historically low interest rates. These low interest rates have persisted many years longer than anticipated. Given current expectations of high inflation in the near term and recent decisions by the Federal Reserve to keep the current federal funds rate, low interest rates will likely persist. However, I rely on my CAPM, ECAPM, and CEM results as a reasonableness check. Moreover, my recommendation of an 9.35 percent ROE is further supported by the average of results using all my models of 8.91 percent.

Q. HOW DOES YOUR RECOMMENDATION COMPARE TO MS. NELSON'S?

A. My recommendation is based on the maximum of my range DCF results. In contrast, Ms. Nelson does not specify the extent in which model or models she relies on to derive her range of 9.75 percent to 10.75 percent and resulting recommendation of 10.30 percent. Although she states that the analyses supporting her recommendation include her DCF model, CAPM. ECAPM, and Bond Yield Plus Risk Premium analyses, she fails to provide specific weights.

Q. HOW DOES YOUR RECOMMENDATION COMPARE TO RECENTLY ALLOWED EQUITY RETURNS?

A. RRA Regulatory Focus reports that the average allowed equity returns across vertically integrated electric utilities during the first half of 2021 fell to 9.46 percent from 9.55 percent in 2020.[40] Although my recommended ROE of 9.35 percent is 11 basis points less than the average allowed equity returns, it is more in line with recent allowed equity returns than Ms. Nelson's recommendation, because allowed ROEs in general have been decreasing and have been below 10 percent since 2012.

Q. HOW DOES MS. NELSON'S RECOMMENDATION COMPARE TO RECENTLY ALLOWED EQUITY RETURNS?

A. Ms. Nelson's recommended ROE of 10.3 percent is 84 basis points higher than the average allowed ROE for vertically integrated electric utilities in the first half of 2021. If the Commission granted Ms. Nelson's recommended ROE, it would be an extreme outlier relative to the average allowed ROE for vertically integrated electric utilities.

[40] S&P Global Market Intelligence, *RRA Regulatory Focus, Major Rate Case Decisions – January-June 2021* (July 27, 2021) at 5.

VII. SUMMARY AND RECOMMENDATION

Q. WHAT DO YOU RECOMMEND FOR EPE'S OVERALL WACC AND AUTHORIZED ROE?

A. I recommend that the Commission authorize an overall WACC of 7.50 percent, using a hypothetical capital structure that incorporates a cost of long-term debt of 5.576 percent and an authorized ROE of 9.35 percent. (*See* Table 5.) My ROE recommendation of 9.35 percent is the upper bound of my recommended DCF range of 8.61 percent and 9.35 percent, with a mid-point of 8.96 percent, and represents a conservative estimate of a fair and reasonable ROE for EPE for the reasons I have previously discussed.

My results are derived using a proxy group of electric utilities representing the opportunity cost of investing in EPE's assets. My results best represent the opportunity cost of capital that an investor expects under today's financial circumstances.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does. However, I reserve the right to supplement my testimony as new information becomes available.

Table 5. ROE Estimates

Estimated Return on Equity	**ROE (%)**		
DCF Methodology	**30-Day Stock Price**	**90-Day Stock Price**	**Average**
Constant Growth DCF (EPS Growth)	9.35	9.25	
Constant Growth DCF (DPS, EPS and BVPS)	8.50	8.43	
Sustainable Growth DCF	7.87	7.92	
DCF Range:	**7.87**	**9.35**	**8.57**
CAPM & ECAPM Methodology	**CAPM**	**ECAPM**	
Capital Asset Pricing Model (Lg. Stock ERP, 30-yr T-Bond Rate)	8.39	8.59	
Capital Asset Pricing Model (Supply-Side ERM, 30-yr T-Bond Rate)	7.28	7.44	
Capital Asset Pricing Model (D&P Normalized Rate)	7.40	7.5	
CAPM Range:	**7.28**	**8.59**	**7.93**
Comparable Earnings Methodology			
Comparable Earnings Model (Historical ROE)	9.59		
Comparable Earnings Model (Adjusted ROE)	10.76		
Comparable Earnings Model (VL Forecasted ROE 24-26)	10.50		
CEM Range:	**9.59**	**10.76**	**10.17**
Summary			
DCF-Based ROE Average			**8.61**
All-Model ROE Average			**8.91**
	Min	**Max**	
Recommended ROE Range	**8.61**	**9.35**	**8.98**
Recommended ROE (%)			**9.35**

APPENDIX A: CURRICULUM VITAE AND QUALIFICATIONS

Maureen L. Reno

Maureen Reno is a seasoned expert with nearly 20 years of experience in the field of public utility regulation. After she completed her Ph.D. studies in Economics at the University of New Hampshire, Ms. Reno launched her career in public utility regulation as a utility analyst and program manager at the New Hampshire Public Utilities Commission, where she worked for the next 10 years. In this capacity, she provided expert testimony on rate of return (to include return on equity) in electricity, natural gas, and water utility rate cases. Ms. Reno also led the development and implementation of New Hampshire's Renewable Portfolio Standard program, helping both owners of distributed generation and load serving entities meet compliance requirements and maneuver the dynamic wholesale energy and renewable energy certificate markets. In addition, she managed New Hampshire's participation in the Regional Greenhouse Gas Initiative. Finally, Ms. Reno served as an expert witness on financial issues regarding the regulation of electric, natural gas, and water utilities, to include cost of capital and return on shareholder equity.

Subsequently, Ms. Reno served as a Senior Energy Economist with the Union of Concerned Scientists. In this capacity, she developed clean energy financing policies and advocated for electricity sector solutions to global warming.

Since 2012, Ms. Reno has served as an independent consultant, working with other small businesses to advise government and industry clients on diverse utility-related matters. In addition, she has served as an expert witness on rate design and rate of return (to include return on equity) in numerous cases. Her testimony has been presented to public utility commissions across the United States, to include the Arizona Corporation Commission, Georgia Public Service Commission, Missouri Public Service Commission, the New Mexico Public Regulation Commission, the Oklahoma Corporation Commission, and the Texas Public Utility Commission. Ms. Reno's testimony has been consistently accepted by public utility commissions.

Ms. Reno stays abreast of the latest developments in utility regulatory law and policy through her research and professional activities. Given the complexity of Federal and state regulations that affect her clients, Ms. Reno dedicates significant time and energy to reviewing regulatory developments enacted by the U.S. Department of Energy, the Federal Energy Regulatory Commission (FERC), and the U.S. Environmental Protection Agency. For instance, Ms. Reno recently evaluated Maryland's RPS in light of FERC rulings on PJM's Capacity Auction to assess the financial viability of renewable energy projects within Maryland.

EDUCATION

- Completed all course work and exam requirements towards the Doctorate of Philosophy in Economics – University of New Hampshire, Durham.
  Fields of Specialization: Industrial Organization and Environmental Economics
- Master of Arts in Economics – University of New Hampshire, Durham, 1998
- Bachelor of Arts in Economics – University of Maine, Orono, 1996

PROFESSIONAL EXPERIENCE

- Independent Consultant (2012-Present)
- Senior Energy Economist, Union of Concerned Scientists (2011-2012)
- Analyst, Program Manager, Utility Analyst, and Economist, New Hampshire Public Utilities Commission (2001-2011)
- Survey Manager, New Hampshire Small Business Development Center (1999-2001)
- Adjunct Instructor, University of New Hampshire (1999-2001)

PROFESSIONAL WORK

As an independent consultant for Exeter Associates Inc., Ms. Reno:

- Preparing the financial analysis and ratepayer impacts of a long-term contract requirement under Maryland's RPS for the Power Plant Research Program (PPRP) on behalf of the Maryland Department of Natural Resources.

- Evaluated utility proposals for deployment, cost-benefit analysis, and cost recovery of Maryland's Statewide Electric Vehicle Portfolio on behalf of the Maryland Energy Administration through the PPRP in Case No. 9478 In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio.

- Provided written and oral testimony on behalf of large federal executive agencies, such as the U.S. Department of Defense and the U.S. Department of Energy, in electric utility rate cases before the Corporation Commission of Oklahoma, the Public Utility Commission of Texas and the Missouri Public Service Commission. Assessed each utility's weighted average cost of capital and estimated the rate of return on equity using discounted cash flow, risk premium, and capital asset pricing models.

- Conducted research and drafted sections of regional energy market operations manuals for the US Department of Energy's Federal Energy Management Program. The reports focused on how federal facilities were pursuing renewable energy development under the different market constructs, such as by vertically integrated electric utilities, electric utilities with the PJM footprint, and electric utilities in California, and how those market constructs affected the prospects for future renewable energy development.

As an independent consultant for TAHOEconomics LLC, Ms. Reno:

- Provided written and oral testimony and legal briefs on behalf of the City of Clovis, New Mexico, in a water utility rate cases before the New Mexico Public Regulation Commission. Assessed EPCOR Water New Mexico Inc.'s weighted average cost of capital and estimated the rate of return on equity using discounted cash flow, risk premium, and capital asset pricing models.

As an independent consultant for Stephenson Strategic Communications, LLC, Ms. Reno:

- Provided consulting services to build support in New Hampshire for strong national climate and energy policies on behalf of a nationally recognized, non-profit environmental organization.

- Mobilized experts and leaders in New Hampshire to engage elected federal, state and locals official through targeted Senator visits, media interviews, public events, letters to the editor, and opinion and editorial articles.

- Communicated directly with targeted legislators and their staff to determine their positions on climate and clean air policies and address their concerns.

As an independent consultant for TrueLight Energy, LLC, Ms. Reno:

- Acted as director of regulatory affairs to expand upon current services to provide clients with guidance on how to navigate the dynamic deregulated electricity industry.

- Developed regulatory service product for clients, which includes ISO/utility tariff tracking and rate impact analysis, policy analysis, new market identification and participation in regulatory processes.

- Identified and originated new commercial opportunities in the U.S. to support principle product/service lines: retail supplier solutions; generation asset management; and sustainability management solutions for large energy users.

- Developed and implemented business development and business-to-business marketing strategies in coordination with senior management.

As a senior economist at the Union of Concerned Scientists, Ms. Reno:

- Promoted the development of clean energy technologies and policies in the electricity sector. Designed and evaluated energy policies at the state, regional, and national levels to maximize economic benefits and overcome market barriers to renewable energy.

- Evaluated and developed alternative financial policies to national and state renewable energy standards. Completed internal documents and research focusing on master limited partnerships and real estate investment trusts as possible sources of financing capital for renewable energy projects.

- Informed and enhanced coalition strategies by evaluating and developing appropriate responses to federal policy opportunities, including a low-carbon electricity standard, production tax credit, and other emerging opportunities.

- Evaluated the net benefits and opportunities for economic development in renewable energy manufacturing and the supply chain.

As an analyst and program manager at the New Hampshire Public Utilities Commission, Ms. Reno:

- Developed and managed New Hampshire's RPS Program.

- Developed internal protocols for managing New Hampshire's RPS program pursuant to PUC's RPS program rules (N.H. Code of Administrative Rules PUC 2500), including designing resource eligibility application forms.

- Verified electricity providers' compliance with New Hampshire's RPS program and processed applications for renewable energy source eligibility.

- Prepared and submitted annual RPS compliance reports, including program evaluation and policy analysis, to the State legislature on behalf of the PUC.

- Monitored and forecasted renewable energy certificate market trends in New England and New Hampshire to estimate available revenues supporting rebate programs.

- Maintained an RPS program website and renewable energy sources database.

- Participated in various regional working groups, including the RGGI Allowance and Offset Market Groups, and the GIS Regulators' Caucus to develop and maintain the NEPOOL GIS Operating Rules.

- Developed Greenhouse Gas Emissions Reduction Fund Cost Effectiveness Analysis model for request for proposal applicants.

As a utility analyst and economist at the New Hampshire Public Utilities Commission, Ms. Reno:

- Reviewed, analyzed and prepared oral and written recommendations in eight electric, natural gas and water utility rate cases in which she calculated each

company's weighted average cost of capital and estimated the rate of return on equity using discounted cash flow, risk premium, and capital asset pricing models.

- Advised the PUC on utilities' debt financings, bond issuances, power plant retrofit, advanced/net metering, demand response, environmental disclosure, and incentives for in-state energy efficiency programs.

- Collaborated on behalf of the PUC with public and private entities to write New Hampshire's RPS law (HB 873), state participation in RGGI (HB 1434) and the PUC's RPS program rules (N.H. Code of Administrative Rules Puc 2500).

- Advised the Commissioners on the development of the RGGI carbon dioxide emission limits and the Allowance Auction Market.

- Prepared fiscal impact statements regarding proposed legislation and regulations in the State of New Hampshire using cost-benefit analysis.

As a Survey Manager for the New Hampshire Small Business Development Center, Ms. Reno:

- Designed and distributed a survey to collect data on the characteristics of New Hampshire manufacturers.

- Managed collection of survey data, designed a database for the data collected and oversaw data entry efforts.

- Analyzed the economic and behavioral factors that lead to the growth of New Hampshire manufacturing companies using multivariate regression, factor and cluster analysis of survey data.

As an Adjunct Instructor for the University of New Hampshire, Ms. Reno:

- Taught undergraduate courses in Principles of Macroeconomics and Microeconomics, including lectured on a daily basis, and developed lesson plans and teaching materials.
- Managed teaching assistant's work correcting and grading testing materials and writing assignments.

UTILITY LITIGATION

State	Client	Citation/Utility	Industry / Sector	Topics
New Mexico	Bernalillo County (BC)	20-00222-UT/ Public Service Co. of New Mexico	Electric	Mergers & Acquisitions: Benefits and Risks
New Mexico	BC	20-00121-UT/ Public Service Co. of New Mexico	Electric	Decoupling Rate Design Mechanism
New Mexico	Public Regulation Commission Staff	19-00170-UT/ Southwestern Public Service Company	Electric	Cost of Capital and Return on Equity
Georgia	U.S. Department of Defense (DoD)	42516/ Georgia Power Company	Electric	Cost of Capital, Return on Equity, and Rate Design Impacts on Risk
Arizona	DoD	E-01933A-19-0028/ Tucson Electric Power Company	Electric	Cost of Capital and Return on Equity
New Mexico	City of Clovis, NM	18-00124-UT/ EPCOR Water New Mexico Inc.	Water	Cost of Capital and Return on Equity
Oklahoma	DoD	PUD 201700151/ Public Service Co. of Oklahoma	Electric	Cost of Capital and Return on Equity
Oklahoma	DoD	PUD 201500208/ Public Service Co. of Oklahoma	Electric	Cost of Capital, Return on Equity, and Rate Design Impacts on Risk
Texas	U.S. Department of Energy (DOE)	43695/ Southwestern Public Service Company	Electric	Cost of Capital and Return on Equity
Missouri	DOE	ER-2014-0370/ Kansas City Power & Light Co.	Electric	Cost of Capital and Return on Equity
Texas	DOE	41791/ Entergy Texas, Inc.	Electric	Cost of Capital and Return on Equity
New Hampshire	Public Utilities Commission (PUC)	DE 05-178/ Unitil Energy Systems, Inc.	Electric	Cost of Capital and Return on Equity
New Hampshire	PUC	DE 04-177/ Public Service Co. of New Hampshire (generation assets)	Electric	Cost of Capital and Return on Equity
New Hampshire	PUC	DW 04-056/ Pennichuck Water Works, Inc.	Water	Cost of Capital and Return on Equity
New Hampshire	PUC	DE 03-200/ Public Service Co. of New Hampshire	Electric	Cost of Capital and Return on Equity
New Hampshire	PUC	DE 03-166/	Electric	Financial Incentives Associated with a Power

		Public Service Co. of New Hampshire		Plant Retrofit from Coal to Biomass
New Hampshire	PUC	DE 01-247/ Concord Electric Co. and Exeter & Hampton Electric Co.	Electric	Cost of Capital and Return on Equity
New Hampshire	PUC	DE 01-168/ Public Service Co. of New Hampshire	Electric	Refinancing of Long-term Debt, Short-term Debt Limit, and Utilization of Derivative Instruments
New Hampshire	PUC	DG 01-182/ Northern Utilities, Inc.	Natural Gas	Cost of Capital and Return on Equity
New Hampshire	PUC	DW 01-081/ Pennichuck Water Works, Inc.	Water	Cost of Capital and Return on Equity

UTILITY-RELATED MATTERS

State	Client	Description
Maryland	Department of Natural Resources (DNR)	Prepared the financial analysis and ratepayer impacts of a long-term contract requirement under Maryland's RPS. The report titled "Final Report Concerning the Maryland Renewable Portfolio Standard as Required by Chapter 393 of the Acts of the Maryland General Assembly of 2017" was publicly released in December 2019.
Maryland	Energy Administration (EA)	Evaluated utility proposals for deployment, cost-benefit analysis, and cost recovery of Maryland's Statewide Electric Vehicle Portfolio in Case No. 9478 In the Matter of the Petition of the Electric Vehicle Work Group for Implementation of a Statewide Electric Vehicle Portfolio.
Federal	US Department of Energy (DOE)	Conducted research and drafted sections of regional energy market operations manuals for the US Department of Energy's Federal Energy Management Program. The reports focused on how federal facilities were pursuing renewable energy development under different market constructs, such as by vertically integrated electric utilities, electric utilities with the PJM footprint, and electric utilities in California.
New Hampshire	Derry Town Council	Oversaw town energy committee's involvement in various energy cost saving projects or initiatives, such as installing a large solar array on the town's landfill, updating streetlights with LED fixtures, building a new transfer station that meets LEED certification, installing an electric vehicle charging station downtown, and hosting/managing resident participation in two Solar Up campaigns.
New Hampshire	Derry Town Council	Advised town council on establishing the Derry Net Zero Task Force and town goal of becoming Net Zero by 2025.
Massachusetts	Union of Concerned Scientists (UCS)	Evaluated and developed alternative financial policies to national and state renewable energy standards. Completed internal documents and research focusing on master limited partnerships and real estate investment trusts as possible sources of financing capital for

		renewable energy projects.
Massachusetts	UCS	Manufacturing Supply Chain Analysis of Wind Power Systems
New Hampshire	Public Utilities Commission (PUC)	Developed internal protocols for managing New Hampshire's RPS program pursuant to NHPUC's RPS program rules (N.H. Code of Administrative Rules PUC 2500), including designing resource eligibility application forms.
New Hampshire	PUC	Verified electricity providers' compliance with New Hampshire's RPS program and processed applications for renewable energy source eligibility.
New Hampshire	PUC	Prepared and submitted annual RPS compliance reports to the State legislature on behalf of the NHPUC.
New Hampshire	PUC	Developed Greenhouse Gas Emissions Reduction Fund Cost Effectiveness Analysis model for grant proposals.
New Hampshire	PUC	Collaborated on behalf of the NHPUC with public and private entities to write New Hampshire's RPS law (HB 873), law concerning state participation in Regional Greenhouse Gas Initiative (RGGI) (HB 1434) and the NHPUC's RPS program rules (N.H. Code of Administrative Rules Puc 2500).
New Hampshire	PUC	Advised the Commissioners on the development of the RGGI carbon dioxide emission limits and the RGGI Allowance Auction Market.
New Hampshire	PUC	Assisted researchers at the University of New Hampshire in estimating the net benefits of New Hampshire's RPS and its participation in RGGI for the state legislature.

APPENDIX B: EXHIBITS

- Exhibit MLR-1 – Historical Economic Trends
- Exhibit MLR-2a – Rates & Yields
- Exhibit MLR-2b – Yield Curve
- Exhibit MLR-2c – TIPS Spread
- Exhibit MLR-3 – Survey of Professional Forecasters
- Exhibit MLR-4 – Sample Characteristics
- Exhibit MLR-5a – Constant Growth DCF Results EPS Growth Method (30-Day Stock Price)
- Exhibit MLR-5b – Constant Growth DCF Results EPS, DPS, and BVPS Growth Method (30-Day Stock Price)
- Exhibit MLR-5c – Constant Growth DCF Results with EPS Growth Method (90-Day Stock Price)
- ExhibitMLR-5d – Constant Growth DCF Results with EPS, DPS, and BVPS Growth Method (90-Day Stock Price)
- Exhibit MLR-6a – Sustainable Growth DCF (Internal)
- Exhibit MLR-6b – Sustainable Growth DCF (External)
- Exhibit MLR-6c – Sustainable Growth DCF (Results) (30-Day Stock Price)
- Exhibit MLR-6d – Sustainable Growth DCF (Internal)
- Exhibit MLR-6e – Sustainable Growth DCF (External)
- Exhibit MLR-6f – Sustainable Growth DCF (Results) (90-Day Stock Price)
- Exhibit MLR-7a – CAPM & ECAPM Assumptions (Historical Lg Stock Return, 30-yr T-Bond)
- Exhibit MLR-7b – CAPM & ECAPM Results (Historical Lg Stock Return, 30-yr T-Bond)
- Exhibit MLR-7c – CAPM & ECAPM Assumptions (Supply-Side ERP, 30-yr T-Bond)
- Exhibit MLR-7d – CAPM & ECAPM Results (Supply-Side ERP, 30-yr T-Bond)
- Exhibit MLR-7e – CAPM & ECAPM Assumptions (D&P Normalized RF Rate)
- Exhibit MLR-7f – CAPM & ECAPM Results (D&P Normalized RF Rate)
- Exhibit MLR-8a – Comparable Earnings Model – Historical Annual Stock Prices
- Exhibit MLR-8b – Comparable Earnings Model – Historical Annual Book Value per Share
- Exhibit MLR-8c – Comparable Earnings Model – Market-to-Book Ratios
- Exhibit MLR-8d – Comparable Earnings Model – Value Line Return on Common Equity

- Exhibit MLR-8e – Comparable Earnings Model – Comparison of Historical Average & Value Line Estimates

The following files are not convertible:

52195_DOD_MReno Exh. MLR-1 to MLR-3_20211021.xlsx

52195_DOD_MReno Exh. MLR-4 to MLR-8e_20211021.xlsx

Please see the ZIP file for this Filing on the PUC Interchange in order to access these files.

Contact centralrecords@puc.texas.gov if you have any questions.