COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY POWER COMPANY FOR (1) A GENERAL ADJUSTMENT OF ITS RATES FOR ELECTRIC SERVICE; (2) APPROVAL OF TARIFFS AND RIDERS; (3) APPROVAL OF ACCOUNTING PRACTICES TO ESTABLISH REGULATORY ASSETS AND LIABILITIES; (4) A SECURITIZATION FINANCING ORDER; AND (5) ALL OTHER REQUIRED APPROVALS AND RELIEF	**)**	**CASE NO. 2023-00159**

DIRECT TESTIMONY

AND EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF

THE KENTUCKY OFFICE OF THE ATTORNEY GENERAL
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA

OCTOBER 2, 2023

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DIRECT TESTIMONY OF RICHARD A. BAUDINO

I. QUALIFICATIONS AND SUMMARY

Q. Please state your name and business address.

A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates, Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

Q. What is your occupation and by whom are you employed?

A. I am a consultant with Kennedy and Associates.

Q. Please describe your education and professional experience.

A. I received my Master of Arts degree with a major in Economics and a minor in Statistics from New Mexico State University in 1982. I also received my Bachelor of Arts Degree with majors in Economics and English from New Mexico State in 1979.

I began my professional career with the New Mexico Public Service Commission Staff in October 1982 and was employed there as a Utility Economist. During my employment with the Staff, my responsibilities included the analysis of a broad range of issues in the ratemaking field. Areas in which I testified included cost of service, rate of return, rate design, revenue requirements, analysis of sale/leasebacks of generating plants, utility finance issues, and generating plant phase-ins.

In October 1989, I joined the utility consulting firm of Kennedy and Associates as a Senior Consultant where my duties and responsibilities covered substantially the same areas as those during my tenure with the New Mexico Public Service Commission Staff. I became Manager in July 1992 and was named Director of Consulting in January 1995. Currently, I am a consultant with Kennedy and Associates.

Exhibit RAB-1 summarizes my expert testimony experience.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the Kentucky Office of the Attorney General ("AG") and the Kentucky Industrial Utility Customers, Inc. ("KIUC").

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to address the allowed return on equity for the regulated electric operations for Kentucky Power Company ("KPC", or "Company"). I will also respond to the Direct Testimony of Mr. Adrien McKenzie, witness for KPC.

Q. Please summarize your conclusions and recommendations.

A. Based on current financial market conditions, I recommend that the Kentucky Public Service Commission ("KPSC" or "Commission") adopt an allowed ROE for KPC of 9.70%. My recommendation is based on two ROE estimation methods: the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"), giving more emphasis to the DCF results. The reasonable range of results from the DCF model is 8.86% to 9.83%. The reasonable range of results from my CAPM analyses is 8.72% to 10.0%. The details of these analyses are presented in Section III of my Direct Testimony.

In Section IV, I will respond to the testimony and ROE recommendation of the Company's witness Mr. McKenzie. I will demonstrate that his recommended ROE of 10.6% significantly overstates the current investor required return for KPC. A 10.60% ROE is inconsistent with investor required returns for lower-risk regulated utilities like KPC.

Mr. McKenzie evaluated KPC's requested ROE of 9.90% and found it to be "a reasonable compromise between balancing the impact on customers and the need to provide the Company with a return that is adequate to compensate investors."[1] Based on my analysis, the Company's requested ROE is still too high and fails to balance the impact on customers with a fair return to investors. A 9.9% ROE would inflate the Company's revenue requirement and contribute to an unnecessary additional rate increase for Kentucky ratepayers.

[1] McKenzie Direct Testimony, page 4, lines 11 through 13.

II. ROE GUIDELINES AND REVIEW OF ECONOMIC CONDITIONS

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

A. Generally speaking, the estimated cost of equity should be comparable to the returns of other firms with similar risk structures and should be sufficient for the firm to attract capital. These are the basic standards set out by the United States Supreme Court in *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944), and *Bluefield W.W. & Improv. Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

From an economist's perspective, the notion of "opportunity cost" plays a vital role in estimating the ROE. One measures the opportunity cost of an investment equal to what one would have obtained in the next best alternative. For example, suppose that an investor decides to purchase the stock of a publicly traded regulated electric utility. That investor will make the decision based on the expectation of dividend payments and perhaps some appreciation in the stock's value over time; however, that investor's opportunity cost is measured by what she or he could have invested in as the next best alternative. That alternative could have been another utility stock, a utility bond, a mutual fund, a money market fund, or any other number of investment vehicles.

The key determinant in deciding whether to invest, however, is based on comparative levels of risk. Our hypothetical investor would not invest in a particular regulated electric utility stock if it offered a return lower than other investments of similar risk. The opportunity cost simply would not justify such an investment. Thus, the task for the rate of return analyst is to estimate a return on equity that is equal to that being offered by other risk-comparable firms.

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

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

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

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

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

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

> Monetary policy in the United States comprises the Federal Reserve's actions and communications to promote maximum employment, stable prices, and moderate long-term interest rates--the economic goals the Congress has instructed the Federal Reserve to pursue.[2]

[2] Monetary Policy (September 13, 2023), https://www.federalreserve.gov/monetarypolicy.htm.

One of the Fed's primary tools for conducting monetary policy is setting the federal funds rate. The federal funds rate is the interest rate set by the Fed that banks and credit unions charge each other for overnight loans of reserve balances. Traditionally the federal funds rate directly influences short-term interest rates, such as the Treasury bill rate and interest rates on savings and checking accounts. The federal funds rate has a more indirect effect on long-term interest rates, such as the 30-Year Treasury bond and private and corporate long-term debt. Long-term interest rates are set more by market forces that influence the supply and demand of loanable funds.

Q. Describe the trend in interest rates since 2007.

A. Until recently, the overall trend in interest rates in the U.S. and the world economy had been lower and this continued into 2020-2021 as governments and central banks, including the Fed, instituted programs in response to the economic shocks brought about by the COVID-19 pandemic. The trend of lower interest rates was precipitated by the 2007 financial crisis and severe recession that followed in December 2007. In response to this economic crisis, the Fed undertook a series of steps to stabilize the economy, ease credit conditions, and lower unemployment and interest rates. These steps are commonly known as Quantitative Easing ("QE") and were implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose of QE was "to

support the liquidity of financial institutions and foster improved conditions in financial markets."[3]

In 2022, however, the Fed began an aggressive policy of raising short-term interest rates in response to concerns about persistently high inflation in the economy, which began to be a problem in 2021. After the Fed reduced the federal funds rate to nearly 0% through 2021, it was increased several times in 2022 and 2023 and as of the filing of my Direct Testimony now stands at a target range of 5.25% - 5.50%. In its press release issued September 20, 2023, the Fed stated the following:

> Recent indicators suggest that economic activity has been expanding at a solid pace. Job gains have slowed in recent months but remain strong, and the unemployment rate has remained low. Inflation remains elevated.
>
> The U.S. banking system is sound and resilient. Tighter credit conditions for households and businesses are likely to weigh on economic activity, hiring, and inflation. The extent of these effects remains uncertain. The Committee remains highly attentive to inflation risks.
>
> The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. In support of these goals, the Committee decided to maintain the target range for the federal funds rate at 5-1/4 to 5-1/2 percent. The Committee will continue to assess additional information and its implications for monetary policy. In determining the extent of additional policy firming that may be appropriate to return inflation to 2 percent over time, the Committee will take into account the cumulative tightening of monetary policy, the lags with which monetary policy affects economic activity and inflation, and economic and financial developments. In addition, the Committee will continue reducing its holdings of Treasury securities and agency debt and agency mortgage-backed securities, as described

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

in its previously announced plans. The Committee is strongly committed to returning inflation to its 2 percent objective.[4]

Figure 1 below presents a graph that tracks the 30-Year Treasury bond yield and the Mergent average utility bond yield. The graph covers the period from January 2008 through August 2023.

FIGURE 1
HISTORICAL BOND YIELDS
AVERAGE PUBLIC UTILITY BOND VS 30-YEAR TREASURY BOND

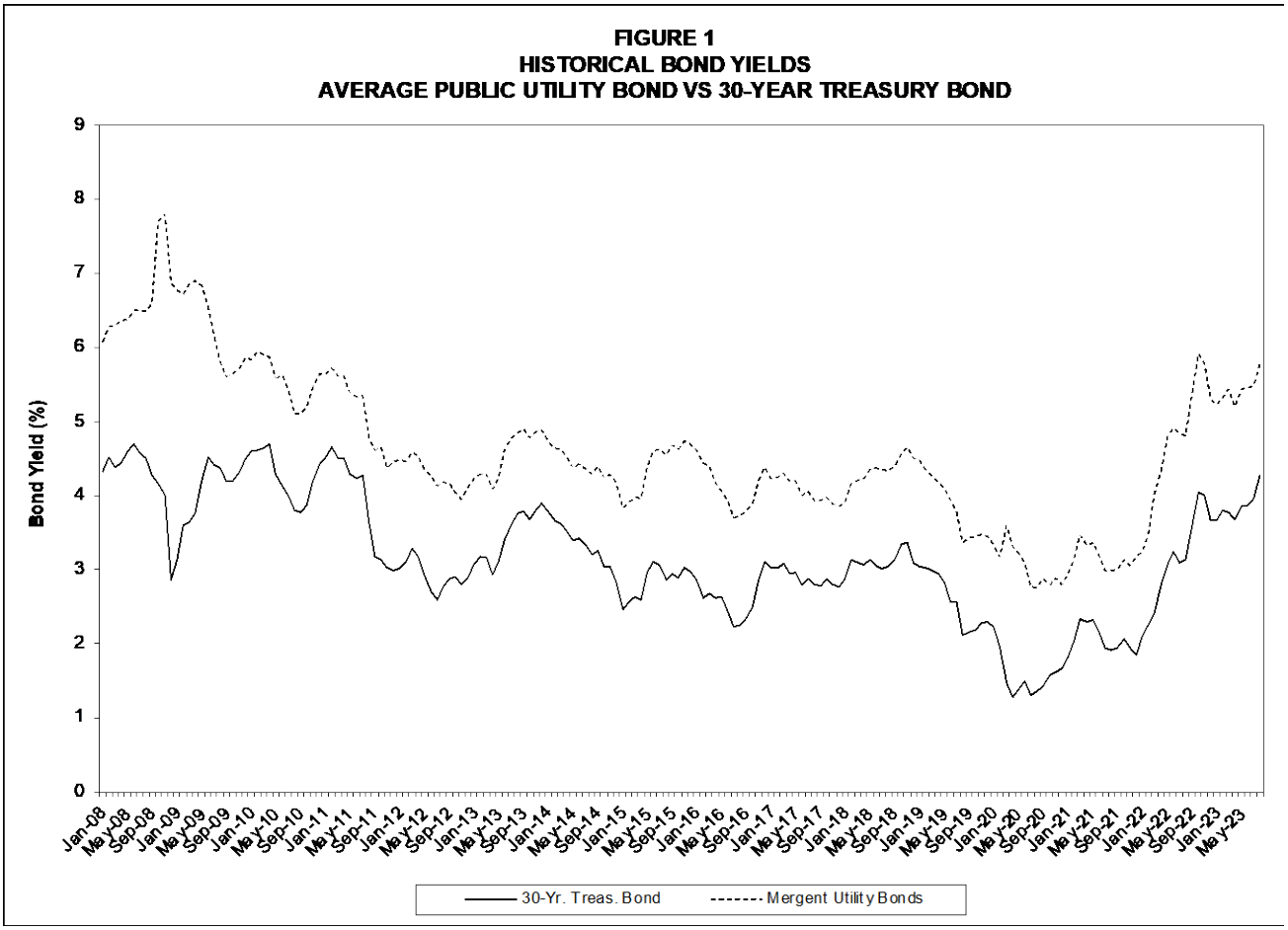


Figure 1 shows the sharp increase in bond yields since the summer of 2021. The 30-year Treasury Bond yield increased from 2.10% in January 2022 to 4.28% in

[4] *Federal Reserve issues FOMC statement*, Press Release, FED. RESERVE BD., (September 20, 2023), **https://www.federalreserve.gov/monetarypolicy/files/monetary20230920a1.pdf** (emphasis added).

August 2023, an increase of 2.18%, or 218 basis points. The Mergent average public utility bond yield increased during that same period from 3.25% to 5.77%, an increase of 2.52%, or 252 basis points.

Q. What has been the recent experience with inflation?

A. Figure 2 presents monthly annualized inflation data from January 2021 through August 2023, the most recent monthly data that was available to me.

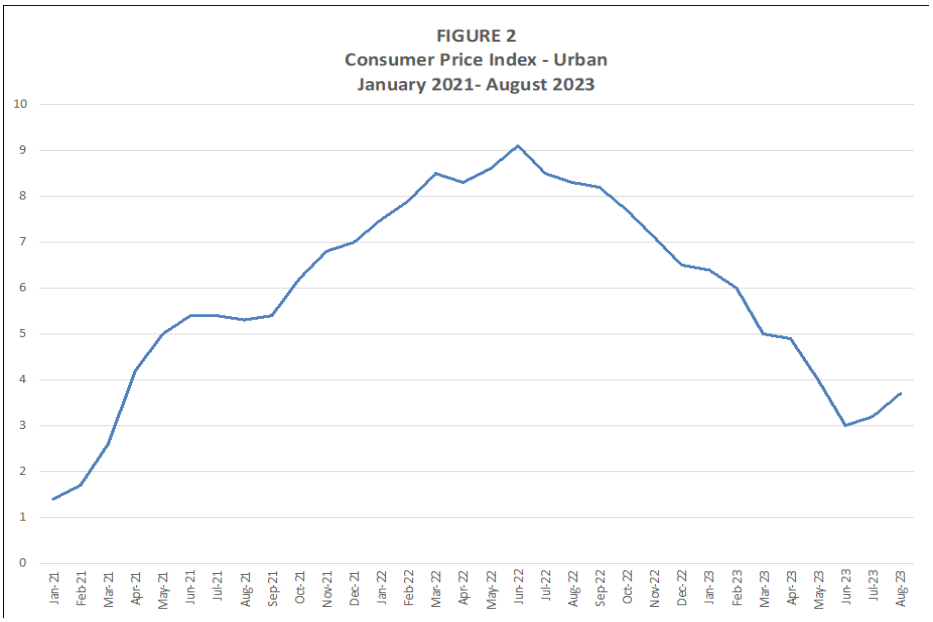


Figure 2 shows that inflation greatly accelerated in 2021, peaked in June 2022 at 9.1%, then declined substantially through June 2023 to 3.0%. Inflation has ticked up to 3.7% as of August 2023 and is still higher than the Fed's target rate of 2.0%.

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

A. The Federal Reserve Bank of Philadelphia publishes the *Survey of Professional Forecasters* ("Survey"), in which a panel of 37 forecasters provide projections for several economic variables, including growth in Gross Domestic Product ("GDP"),

inflation, and unemployment, as well as short-term and long-term interest rates. The most recent edition of the Survey, dated August 11, 2023, provided the following forecasts:

- Consumer Price Index ("CPI") inflation is expected to average 3.1% for 2023, 2.5% for 2024, and 2.4% for 2025. Over the next 10 years, the forecasters expected CPI inflation to average 2.40% per year.
- 10-Year Treasury bond yield is forecasted to be 3.8% in 2023, 3.7% in 2024, and 3.6% in 2025.
- An unemployment rate of 3.6% for 2023 and 4.0% for 2024.
- Real growth in GDP of 2.1% is forecasted in 2023 and 1.3% in 2024.[5]

The Fed's economic projections as of September 20, 2023, showed the following median forecasts:

- Personal Consumption Expenditures ("PCE") inflation rate of 3.3% for 2023, 2.5% for 2024, and longer run inflation at 2.0%;
- Unemployment rate of 3.8% for 2023 and 4.1% for 2024, with a longer run unemployment rate of 4.0%; and
- Growth in real GDP of 2.1% for 2023, 1.5% for 2024 with a longer run growth rate of 1.8%.[6]

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

---

[5] Third Quarter Survey of Professional Forecasters, Federal Reserve Bank of Philadelphia (August 11, 2023) **https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/spf-q3-2023**.

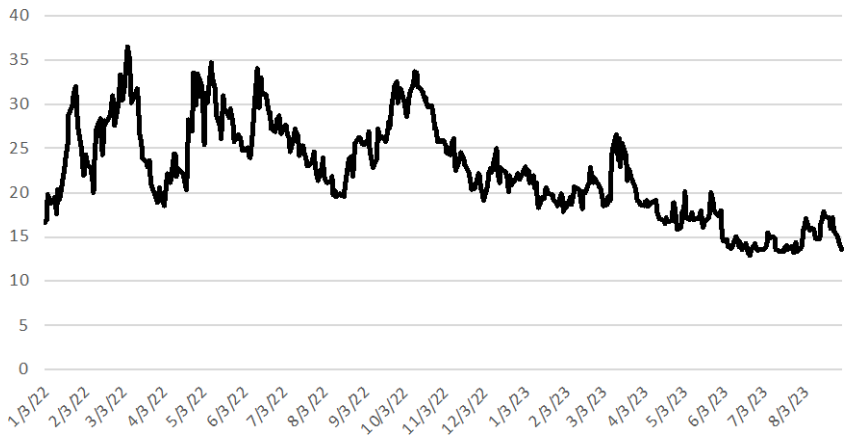
[6] Summary of Economic Projections, Federal Reserve Board (September 20, 2023) **https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20230920.pdf**.

A. There appears to be a consensus for slow growth in GDP in 2023 - 2024, with the U.S. unemployment rate forecasted to rise to about 4.0% - 4.5% through 2024. Inflation is forecasted to be above 3.0% through 2023, but decline in 2024 and thereafter. The forecasted yield on the 10-Year Treasury Bond for 2023, 3.8%, is expected to decline slightly in 2024.

Q. Please provide the Commission with some additional background information regarding market volatility since the beginning of 2022.

A. A widely used measure of market volatility is the Chicago Board Options Exchange ("CBOE") Volatility Index ("VIX"), also called the "fear index" or "fear gauge." Basically, the VIX measures the market's expectations for volatility over the next 30-day period. The higher the VIX, the greater the expectation of volatility and market risk. Figure 3 presents the VIX from January 1, 2022 through August 31, 2023.[7]

FIGURE 3
2022 - 2023 VIX



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

Figure 3 shows the significant increase in market volatility during 2022, then a gradual decline through August 2023. The VIX high in 2022 was 36.45 on March 7. As of August 31, 2023, the VIX stood at 13.57, a substantial decline in expected market volatility since the 2022 high as well as the beginning of the year.

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

A. With the sharp increase in interest rates this year, the utility stock market indexes have generally declined. Since January 3, 2023, the Standard and Poor's ("S&P") 500 Utilities index declined from 358.50 to a closing price of 317.74 on August 31, 2023. This represents a percentage decline of 11.4%. During the same period, the Standard and Poor's 500 index increased from 3824.14 to 4507.66, a percentage increase of 17.9%.

Q. What are the current credit ratings and bond ratings for KPC?

A. KPC's current credit rating from Moody's is Baa3, which is at the low end of Moody's Baa range (Baa1 to Baa3). Standard and Poor's ("S&P") credit rating for KPC is BBB, which is in the middle of S&P's BBB ratings range (BBB+ to BBB-). The ratings outlook from both agencies is stable.

I reviewed the Company's credit reports that were supplied in response to AG-KIUC's First Set of Data Requests. In a Credit Opinion dated June 27, 2023, Moody's cited a reasonable regulatory relationship in Kentucky and KPC's position as part of American Electric Power as credit strengths. Credit challenges included:

- Increasing capital expenditures and cash deferrals will continue to pressure already low credit metrics.
- Relatively weak service territory in eastern Kentucky.

- Elevated carbon transition risk.

S&P Global Ratings April 20, 2023 report noted that it lowered KPC's issuer credit rating to BBB from BBB+ after the termination of the sale of the Company to Liberty Utilities. The credit outlook was changed from negative to stable.

III. DETERMINATION OF FAIR RATE OF RETURN

Q. Please describe the methods you employed in estimating a fair rate of return for KPC.

A. I employed two methods of estimating the ROE for KPC: the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). I applied these ROE estimation techniques to a group of proxy companies that was developed by Company witness Mr. McKenzie and presented in his Direct Testimony. As I explain later, I eliminated three of the companies that were in Mr. McKenzie's proxy group. My DCF analyses are based on the standard constant growth form of the model that employs four different growth rate forecasts from the Value Line Investment Survey, Yahoo! Finance, and Zacks. I also employed Capital Asset Pricing Model ("CAPM") analyses using historical and forward-looking data as well as two other published sources for the market risk premium portion of the model. The results from the CAPM tend to support the reasonableness of my DCF results as well as my ROE recommendation for KPC.

Discounted Cash Flow ("DCF") Model

Q. Please describe the basic DCF approach.

A. The basic DCF approach is rooted in valuation theory. It is based on the premise that the value of a financial asset is determined by its ability to generate future net cash

flows. In the case of a common stock, those future cash flows generally take the form of dividends and appreciation in stock price. The value of the stock to investors is the discounted present value of future cash flows. The general equation then is:

$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \cdots \frac{R}{(1+r)^n}$$

Where: *V = asset value*
R = yearly cash flows
r = discount rate

This is no different from determining the value of any asset from an economic point of view; however, the commonly employed DCF model makes certain simplifying assumptions. One is that the stream of income from the equity share is assumed to be perpetual; that is, there is no salvage or residual value at the end of some maturity date (as is the case with a bond). Another important assumption is that financial markets are reasonably efficient; that is, they correctly evaluate the cash flows relative to the appropriate discount rate, thus rendering the stock price efficient relative to other alternatives. Finally, the model I typically employ also assumes a constant growth rate in dividends. The fundamental relationship employed in the DCF method is described by the formula:

$$k = {}^{D_1}/_{P_0} + g$$

Where: *D_1 = the next period dividend*
P_0 = current stock price
g = expected growth rate
k = investor-required return

Under the formula, it is apparent that "k" must reflect the investors' expected return. Use of the DCF method to determine an investor-required return is complicated by the need to express investors' expectations relative to dividends, earnings, and book value over an infinite time horizon. Financial theory suggests that stockholders purchase

common stock on the assumption that there will be some change in the rate of dividend payments over time. We assume that the rate of growth in dividends is constant over the assumed time horizon, but the model could easily handle varying growth rates if we knew what they were. Finally, the relevant time frame is prospective rather than retrospective.

Q. What was your first step in conducting your DCF analysis for KPC?

A. My first step was to construct a proxy group of companies with a risk profile that is reasonably similar to KPC. Since KPC is a subsidiary of American Electric Power, it does not have publicly traded stock. Thus, one cannot estimate a DCF cost of equity on the Company directly. It is necessary to use a group of companies that are similarly situated and have reasonably similar risk profiles to KPC.

Q. Please describe your approach for selecting a group of electric companies.

A. For purposes of this case, I began with the proxy group of 18 regulated electric utilities that Company witness McKenzie used for his analysis. Mr. McKenzie described the criteria he used to select companies for his proxy group beginning on page 22 of his Direct Testimony. These criteria are:

1. Investment grade corporate credit ratings from Moody's and S&P within one notch of the Company's current ratings, and within the investment grade scale. For Moody's, this results in a ratings range of Baa3 and Baa2; for S&P the range is BBB-, BBB, and BBB+.

2. No cuts in common dividend payments during the past six months and no announcement of a dividend cut since that time.

3. No ongoing involvement in a major merger or acquisition that would distort quantitative results.

I reviewed the credit ratings of Mr. McKenzie's proxy group and found that all the companies had the same S&P and Moody's credit ratings that he used. In reviewing the individual members of the proxy group, I excluded the following companies:

- Dominion Resources: On September 5, 2023 Dominion closed three separate transactions to sell its natural gas distribution companies to Enbridge. The Company's press release stated that the transactions were valued at $14.0 billion. Going forward, Dominion will be a different company than it was before with likely changes to its dividend and earnings growth estimates. These transactions will result in Dominion having far more of its operations being regulated electric utility companies. However, given this significant change to Dominion's corporate profile, I excluded it from the proxy group.
- Hawaiian Electric Industries ("HEI"): In August 2023, the common stock price of HEI dropped precipitously after the disastrous wildfire on Maui. This company's stock dropped from $37.22 per share on August 1 to a low of $9.66 per share on August 25. HEI's stock price has recovered slightly from this low but is nowhere near its level prior to the Maui wildfire. Because of this, one can no longer calculate a rational dividend yield for HEI going forward. Thus, I excluded HEI from the proxy group.
- Exelon Corp.: Exelon Corp. did not have Value Line dividend and earnings growth rates or a beta available at the time of preparing my Direct Testimony. Value Line also suspended this company's timeliness and technical rankings. I believe this was due to Exelon's restructuring in February 2022, in which it

spun off its unregulated power generating assets. Given the lack of Value Line data, I chose to exclude Exelon from the group at this time.

The resulting comparison group of 15 companies that I used in my analysis is shown in the Table 1 below.

TABLE 1
Credit Ratings
Proxy Group and Kentucky Power

	Moodys	S&P
Avista Corp.	Baa2	BBB
Black Hills Corp.	Baa2	BBB+
CenterPoint Energy	Baa2	BBB+
CMS Energy	Baa2	BBB+
DTE Energy	Baa2	BBB+
Duke Energy Corp.	Baa2	BBB+
Edison International	Baa2	BBB
Emera Inc.	Baa3	BBB
Entergy Corp.	Baa2	BBB+
IDACORP, Inc.	Baa2	BBB
NorthWestern Energy	Baa2	BBB
Otter Tail Corp.	Baa2	BBB
Public Service Enterprise Gp.	Baa2	BBB+
Sempra Energy	Baa2	BBB+
Southern Company	Baa2	BBB+
Kentucky Power Co.	Baa3	BBB

Ratings reviewed September 19, 2023

Q. What was your first step in determining the DCF return on equity for the proxy group?

A. I first determined the current dividend yield, D_1/P_0, from the basic equation. My general practice is to use six months as the most reasonable period over which to estimate the dividend yield. The six-month period I used covered the months from March through August 2023. The annualized dividend divided by the average monthly price represents the average dividend yield for each month in the period.

The resulting 6-month average dividend yield for the proxy group is 3.76%. These calculations are shown in Exhibit RAB-2. Page 3 of this exhibit shows the

monthly proxy group dividend yields as well as the 6-month and 3-month averages. The monthly trend was upward over the six-month period, rising from 3.63% in April to 3.89% in August.

Q. Having established the average dividend yield, how did you determine the investors' expected growth rate for the proxy group?

A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of growth in dividends. The dividend growth rate is a function of earnings growth and the payout ratio, neither of which is known precisely for the future. We refer to a perpetual growth rate since the DCF model has no arbitrary cut-off point. We must estimate the investors' expected growth rate because there is no way to know with absolute certainty what investors expect the growth rate to be in the short term, much less in perpetuity.

For my analysis in this proceeding, I used three major sources of analysts' forecasts for growth. These sources are The Value Line Investment Survey, Zacks, and Yahoo! Finance. This is the method I typically use for estimating growth for my DCF calculations.

Q. Please briefly describe Value Line, Zacks, and Yahoo! Finance.

A. The Value Line Investment Survey is a widely used and respected source of investor information that covers approximately 1,700 companies in its Standard Edition and several thousand in its Plus Edition. It is updated quarterly and probably represents the most comprehensive of all investment information services. It provides both historical and forecasted information on a number of important data elements. Value

Line neither participates in financial markets as a broker nor works for the utility industry in any capacity of which I am aware.

Zacks gathers opinions from a variety of analysts on earnings growth forecasts for numerous firms including regulated electric utilities. The estimates of the analysts responding are combined to produce consensus average estimates of earnings growth. I obtained Zacks' earnings growth forecasts from its web site.

Like Zacks, Yahoo! Finance also compiles and reports consensus analysts' forecasts of earnings growth.

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

A. Return on equity analysis is a forward-looking process. Five-year or ten-year historical growth rates may not accurately represent investor expectations for future dividend growth. Analysts' forecasts for earnings and dividend growth provide better proxies for the expected growth component in the DCF model than historical growth rates. Analysts' forecasts are also widely available to investors and one can reasonably assume that they influence investor expectations.

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

Q. Columns (1) through (4) of Exhibit RAB-3, page 1 shows the forecasted dividend and earnings growth rates from Value Line and the earnings growth forecasts from Zacks and Yahoo! Finance for the companies in the proxy group. It is important to include dividend growth forecasts in the DCF model since the model calls for forecasted cash flows and Value Line is the only source of which I am aware that forecasts dividend growth. Please note that I substituted the Zacks earnings growth rate for the Yahoo!

Finance earnings growth rate for CenterPoint Energy, which was negative. I did this because Zacks' growth rates are consensus analysts' forecasts and, as such, form a reasonable substitute for the negative growth rate from Yahoo! Finance. Negative growth rates cannot be expected to continue in perpetuity and so should be excluded from the proxy group constant growth DCF analysis. I also substituted Yahoo! Earnings growth estimates for unavailable Zacks growth rates for Otter Tail and Emera.

Q. How did you proceed to determine the DCF return of equity for the proxy group?

A. To estimate the expected dividend yield (D_1), the current dividend yield must be moved forward in time to account for dividend increases over the next twelve months. I estimated the expected dividend yield by multiplying the current dividend yield by one plus one-half the expected growth rate.

Exhibit RAB-3, page 2 presents my standard method of calculating dividend yields, growth rates, and return on equity for the comparison group of companies. The proxy group DCF Return on Equity section shows the application of each of four growth rates to the current group dividend yield of 3.76% to calculate the expected dividend yield. I then added the expected growth rates to the expected dividend yield. My DCF return on equity was calculated using two different methods. Method 1 uses the average growth rates shown on Exhibit RAB-3, page 2 and Method 2 utilizes the median growth rates shown in that section.

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

A. For Method 1 (average growth rates), the results range from 8.04% to 9.76%. For Method 2 (median growth rates), the results range from 7.84% to 9.83%. The ROE

results using Value Line dividend growth are near and below 8.0%, values that are far too conservative given the current economic conditions of rising interest rates and inflation. Therefore, I calculated the average ROEs for each method using only earnings growth forecasts. The averages range from 9.35% to 9.42%. The range of ROE estimates from both Methods 1 and 2 range from 8.86% to 9.83%, with a midpoint of 9.35%.

Capital Asset Pricing Model

Q. Briefly summarize the Capital Asset Pricing Model ("CAPM") approach.

A. The theory underlying the CAPM approach is that investors, through diversified portfolios, may combine assets to minimize the total risk of the portfolio. Diversification allows investors to diversify away all risks specific to a particular company and be left only with market risk that affects all companies. Thus, the CAPM theory identifies two types of risks for a security: company-specific risk and market risk. Company-specific risk includes such events as strikes, management errors, marketing failures, lawsuits, and other events that are unique to a particular firm. Market risk includes inflation, business cycles, war, variations in interest rates, and changes in consumer confidence. Market risk tends to affect all stocks and cannot be diversified away. The idea behind the CAPM is that diversified investors are rewarded with returns based on market risk.

Within the CAPM framework, the expected return on a security is equal to the risk-free rate of return plus a risk premium that is proportional to the security's market, or non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a security and measures the volatility of a particular security relative to the overall

market for securities. For example, a stock with a beta of 1.0 indicates that if the market rises by 15%, that stock will also rise by 15%. This stock moves in tandem with movements in the overall market. Stocks with a beta of 0.5 will only rise or fall 50% as much as the overall market. So with an increase in the market of 15%, this stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more than the overall market. Thus, beta is the measure of the relative risk of individual securities vis-à-vis the market.

Based on the foregoing discussion, the equation for determining the return for a security in the CAPM framework is:

$$K = Rf + \beta(MRP)$$

Where: K = *Required Return on equity*
Rf = *Risk-free rate*
MRP = *Market risk premium*
β = *Beta*

This equation tells us about the risk/return relationship posited by the CAPM. Investors are risk averse and will only accept higher risk if they expect to receive higher returns. These returns can be determined in relation to a stock's beta and the market risk premium ("MRP"). The general level of risk aversion in the economy determines the MRP. If the risk-free rate of return is 3.0% and the required return on the total market is 15%, then the risk premium is 12%. Any stock's risk premium can be determined by multiplying its beta by the MRP. Its total return may then be estimated by adding the risk-free rate to that risk premium. Stocks with betas greater than 1.0 are considered riskier than the overall market and will have higher required

returns. Conversely, stocks with betas less than 1.0 will have required returns lower than the market as a whole.

Q. In general, are there concerns regarding the use of the CAPM in estimating the ROE?

A. Yes. There is some controversy surrounding the use of the CAPM and its accuracy regarding expected returns. There is substantial evidence that beta is not the primary factor for determining the risk of a security. For example, Value Line's "Safety Rank" is a measure of total risk, not its calculated beta coefficient. Dr. Burton Malkiel, author of *A Random Walk Down Wall Street* noted the following in his best-selling book on investing:

> Second, as Professor Richard Roll of UCLA has argued, we must keep in mind that it is very difficult (indeed probably impossible) to measure beta with any degree of precision. The S&P 500 Index is not "the market." The Total Stock Market contains many thousands of additional stocks in the United States and thousands more in foreign countries. Moreover, the total market includes bonds, real estate, commodities, and assets of all sorts, including one of the most important assets any of us has - the human capital built up by education, work, and life experience. Depending on exactly how you measure "the market" you can obtain very different beta values.[8]

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

> Even though the capital asset pricing model (CAPM) is the most widely used method of estimating the cost of equity capital, the accuracy and predictive power of beta as the sole measure of risk have increasingly come under attack. As a result, alternative measures of risk have been proposed and tested. That is, despite its wide adoption, academics and practitioners alike have questioned the usefulness of CAPM in accurately estimating the cost of equity capital and the use of beta as a

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

reliable measure of risk.[9]

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

In the final analysis, a considerable amount of judgment must be employed in determining the market return and expected risk premium elements of the CAPM equation. The analyst's application of judgment can significantly influence the results obtained from the CAPM. My experience with the CAPM indicates that it is prudent to use a wide variety of data in estimating investor-required returns. Of course, the range of results may also be wide, indicating the challenge in obtaining a reliable estimate from the CAPM.

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

A. I used three approaches to estimate the MRP portion of the CAPM equation. First, I will present an approach that uses the expected return on the market and is forward-looking. Second, I will present an approach that employs three historical MRPs based

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

on actual stock and bond returns. Third, I will present other published sources that estimate the current investor required MRP.

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

A. The first source I used was the Value Line Summary and Index dated September 1, 2023. The Value Line Summary and Index provides data with which one may calculate a DCF estimate on the companies that Value Line follows. Value Line presents a median estimated dividend yield for all dividend paying stocks (2.30%) and the median estimated 3–5-year price appreciation potential of all stocks in the Value Line universe (60%). The estimated 3-5-year appreciation estimate translates into an annualized appreciation number, or growth rate, of 12.47%. I present Value Line's projected annual returns on page 1 of Exhibit RAB-4. The DCF ROE result for the market is 14.77%.

Q. Please continue with your MRP analysis.

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

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

presents the calculation of the market returns and MRPs using the historical data from Kroll.

Q. Please explain how these historical MRPs are calculated.

A. Exhibit RAB-4, page 2, shows the arithmetic average of yearly historical stock market returns over the historical period from 1926 – 2022. The average annual income return for the 20-year Treasury bond is subtracted from these historical stock returns to obtain the historical MRP of stock returns over long-term Treasury bond income returns. The resulting historical MRP is 7.10%.

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

A. Yes. Kroll reported the results of a study by Dr. Roger Ibbotson and Dr. Peng Chen indicating that the historical risk premium of stock returns over long-term government bond returns has been significantly influenced upward by substantial growth in the price/earnings ("P/E") ratio.[10] Kroll noted that this growth in the P/E ratio for stocks was subtracted out of the historical risk premium to arrive at an adjusted "supply side" historical arithmetic MRP. The most recent "supply side" historical MRP is 6.35%, which I have also included in Exhibit RAB-4, page 2.

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

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

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

> There are several ways in which one might estimate an expected risk premium used for forecasting. One way is to extrapolate historical risk premiums, as did Ibbotson and Sinquefield. Another is to use investor demand models based upon investor risk aversion, as did Mehra and Precott. A third way is to look at the type of returns that the corporate sector supplies. Diermeir, Ibbotson, and Siegel (1984) and later Ibbotson and Chen (2003) used this supply approach. They extrapolated the cash flows and earnings growth generated by companies themselves. These forecasts tend to give somewhat lower historical risk premiums, primarily because part of the total return of the stock market has come from price-to-earnings ratio expansion. This expansion is not predicated to continue on indefinitely and is removed from the expected risk premium.[11]

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

A. Yes. A historical MRP calculated over a long period of time may not reflect current investor expectations and requirements. For example, Pratt and Grabowski presented a detailed discussion of the sources of potential upward bias and overstatement of the long-term historical risk premium.[12] One potential source of bias they analyzed was the historical period of 1942 – 1951, which included government-imposed stability in interest rates for government bonds during the Second World War. Pratt and Grabowski named this period "WWII Interest Rate Bias" and estimated that it resulted in an overstatement of the long-run historical risk premium of 117 basis points, or 1.17%. Pratt and Grabowski also considered the supply-side MRP, which I considered and presented earlier.

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

[12] Pratt and Grabowski, Cost of Capital, 119 – 131 (Wiley, 5th ed.)

Kroll analyzed and calculated the so-called World War II Interest Rate Bias and subtracted it from the supply-side ERP of 6.35%, resulting in an adjusted historical ERP of 5.37%. I also present this historical ERP on page 2 of Exhibit RAB-4.

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

> Given how widely the historical risk premium approach is used, it is surprising that the flaws in the approach have not drawn more attention. Consider first the underlying assumption that investors' risk premiums have not changed over time and that the average risk investment (in the market portfolio) has remained stable over the period examined. We would be hard pressed to find anyone who would be willing to sustain this argument with fervor. The obvious fix for this problem, which is to use a more recent time period, runs directly into a second problem, which is the large noise associated with historical risk premium estimates. While these standard errors may be tolerable for very long time periods, they clearly are unacceptably high when shorter periods are used.[13]

Although the simple, unadjusted long-run historical risk premium is widely used and available to investors, it is flawed and likely to overstate the investor expected risk premium for forecasting purposes. It should be viewed with a great deal of caution and supplemented with other sources as I have done here.

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

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

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

First, Kroll provides a recommendation for the MRP for the United States. Its recommended MRP as of June 2023 is 5.50%.[14]

Second, Dr. Aswath Damodaran provides monthly estimates of the MRP using what he calls an implied risk premium approach. Dr. Damodaran is a professor of finance at the Stern School of Business at New York University and is a researcher on the topic of MRPs, among other things. As of September 1, 2023, Dr. Damodaran estimated an MRP in the range of 4.35% - 5.79%, with an average of 4.82%.[15]

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

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

A. Initially, I considered a six-month average of the 30-year Treasury bond yield from March through August 2023. These yields are shown in Exhibit RAB-4, page 1. The six-month average 30-Year Treasury Bond yield is 3.90%. This six-month period tracks the six-month period I used for stock prices in my DCF analyses.

I also considered the steady increase in long-term bond yields so far in 2023 and the 31 basis point increase in the 30-Year Treasury yield from July to August, with the August yield at 4.28%. To be conservative, I chose to use 4.30% as the risk-free rate in my CAPM analyses in this proceeding.

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

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

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[14] **https://www.kroll.com/-/media/cost-of-capital/kroll-lowers-its-recommended-us-equity-risk-premium.pdf**

[15] Aswath Damodaran, Damodaran Online (last visited September 3, 2023), https://pages.stern.nyu.edu/~adamodar/New_Home_Page/home.htm.

- Value Line forward-looking MRP 10.47%
- Historical MRP 5.37% - 7.10%
- Kroll MRP 5.50%
- Average Damodaran MRP 4.82%

Q. How did you determine the value for beta?

A. I obtained the betas for the companies in the proxy group from the most recent Value Line reports at the time I prepared my Direct Testimony and analyses. The average of the Value Line betas for the proxy group is 0.92.

Q. Please summarize the CAPM results.

A. The forward-looking CAPM ROE estimate is 13.90%.[16] Using historical risk premiums, the CAPM results range from 9.22% to 10.81%.[17] Regarding the Kroll and Damodaran MRPs, the CAPM estimates range from 8.72% to 9.34%.

Conclusions and Recommendations

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

A. Table 2 below summarizes my return on equity results using the DCF and CAPM for my proxy group of companies.

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

[17] Refer to Exhibit RAB-4, page 2.

TABLE 2
SUMMARY OF ROE ESTIMATES

DCF Methodology	
Average Growth Rates	
- High	9.76%
- Low	9.24%
- Average	9.42%
Median Growth Rates:	
- High	9.83%
- Low	8.86%
- Average	9.35%
CAPM Methodology	
Forward-lookng Market Return:	13.90%
Historical Risk Premium:	
- Arithmetic Mean	10.81%
- Supply side MRP	10.12%
- Supply side less WWII Bias	9.22%
Kroll MRP	9.34%
Damodaran MRP	8.72%

Q. What is your recommended return on equity range for KPC?

A. I recommend that the Commission adopt a ROE range of 8.70% - 10.0% for KPC. My range is informed mainly by the DCF results and supported my CAPM analyses. Given increased interest rates this year as well as the decline in utility stocks generally, I omitted ROE results below 8.70% as being too conservative at this time. I also excluded the forward-looking market return CAPM ROE of 13.90% because it is an extreme outlier. The top of my range was informed by the top of the DCF ROE range (9.83%) and the historical MRP values for the CAPM (9.22% - 10.81%). The midpoint of my recommended ROE range is 9.35%.

Based on my analyses and consideration of current financial market conditions, I recommend a return on equity for KPC of 9.70%. This ROE estimate falls between the midpoint (9.35%) and top of my recommended ROE range (10.0%). I recommend a ROE for KPC above the midpoint in this case to recognize the increasing long-term

bond yields and proxy group dividend yields I described earlier in my testimony, as well as KPC's Baa3 Moody's credit rating, which is Moody's lowest investment grade rating.

IV. RESPONSE TO KENTUCKY POWER TESTIMONY

Q. Have you reviewed the Direct Testimony of Mr. McKenzie?

A. Yes.

Q. Please summarize your conclusions with respect to his testimony and return on equity recommendation.

A. Mr. McKenzie's recommended 10.6% return on equity is overstated and inconsistent with the current financial market evidence. As I shall demonstrate later in this section of my testimony, Mr. McKenzie made judgments that inflated his ROE results, particularly for the CAPM.

Q. Please summarize the results of Mr. McKenzie's ROE analyses.

A. Mr. McKenzie summarized his ROE results on his Exhibit AMM-2. He used five methods to estimate the ROE for KPC: the DCF model, the CAPM, the Empirical CAPM ("ECPAM"), the Utility Risk Premium method, and the Expected Earnings method. His average DCF results ranged from 9.2% to 10.2%. His average CAPM result was 11.1%. His average ECAPM result was 11.4%. His utility risk premium model yielded an average ROE result of 10.6%. Finally, his expected earnings approach produced an 11.2% ROE.

Exhibit AMM-2 also presents Mr. McKenzie's recommended range of 10.0% - 11.0%. To that range he added a flotation cost adjustment of 0.10%, resulting in an

adjusted range of 10.1% - 11.1%. This midpoint of this range is 10.6%, which is Mr. McKenzie's ROE recommendation.

DCF Model

Q. Briefly summarize Mr. McKenzie's approach to the DCF model.

A. In Section III of my Direct Testimony I described Mr. McKenzie's selection criteria for his proxy group. Mr. McKenzie used several sources of growth rate forecasts, which included IBES, Zacks, and Value Line as well as an estimate of sustainable growth. I agree with Mr. McKenzie's use of analysts' forecasts for growth, although I did not use the sustainable growth calculation.

In his Exhibit AMM-5, page 3 Mr. McKenzie adjusted his DCF ROE results by excluding certain company ROE results that in his view were too low. These ROE results ranged from 1.6% to 7.3%. Mr. McKenzie also excluded ROE estimates above 12.6%. After making these exclusions, his resulting average DCF range was 9.2% to 10.2% and his midpoint DCF range was 9.3% to 10.1%. These results are presented on Table 4, page 45 in this Direct Testimony.

Q. Please comment on Mr. McKenzie's approach to formulating his DCF recommendation to the Commission.

A. Mr. McKenzie conducted a biased approach in formulating his DCF recommendations. He applied a test for excluding ROE results that, in his view, were too low but also included ROE results that are very high. The upper end of his DCF range was 12.6%, although Mr. McKenzie did not provide any analysis or justification as to why that high end estimate was included as being reasonable. To his credit, Mr. McKenzie did exclude excessive ROE values of 19.8% and 20.4%.

However, one could plausibly argue that ROEs over 11.0% are too high as well. The average commission-allowed ROE for 2022 that was reported by Mr. McKenzie in his Exhibit AMM-9, page 2 of 3, was 9.52%, far below 11.0%. My review of commission-allowed ROEs contained in Mr. McKenzie's Exhibit AMM-9 reveals that 2003 was the last year that allowed ROEs were as high as 11% and that the last average commission-allowed return near 12% was in 1992. In 1992, the average utility bond yield was 8.57%, compared with the August 2023 average utility bond yield of 5.77%. In 2003, the average utility bond yield was 6.61%, 0.84% or 84 basis points higher than August 2023.

Altogether, Mr. McKenzie excluded 16 results, with 14 being excluded as being too low. Eight ROE results were included that were 11.0% or above.

Rather than simply excluding individual low-end DCF results and keeping implausibly high results, I recommend that the median be used as an alternative measure of central tendency. The median is not affected by extremely high or low ROE results, but instead represents the middle value of the data set. If there are concerns about results that are either too high or too low, the median may be used as an additional reference for the investor required ROE. This is the approach I took in my DCF analyses, which uses the proxy group average and median growth rates.

Q. After Mr. McKenzie excluded certain DCF results from his averages on AMM-5, page 3 of 3, did he include the adjusted results in his recommended ROE range for KPC?

A. No, he did not. Even after excluding 14 individual DCF results as being too low, Mr. McKenzie further excluded three proxy group DCF averages – 9.2% to 9.5% - from his recommended ROE range. Excluding these values completely from his

recommended range biases his recommendation upward. These proxy group DCF results are perfectly valid for including in a range of ROE results and Mr. McKenzie should have considered them in his range as well, especially after excluding a significant number of individual DCF ROE results.

CAPM and ECAPM

Q. Beginning on page 49 of his Direct Testimony, Mr. McKenzie described the Empirical CAPM ("ECAPM") analysis he employed as an alternative to the traditional CAPM. Is this a reasonable method to use to estimate the investor required ROE for KPC?

A. No. The ECAPM is designed to account for the possibility that the CAPM understates the return on equity for companies with betas less than 1.0. Mr. McKenzie explained on pages 49 through 50 of his Direct Testimony how he applied the adjustment to his CAPM data, which was based on the formula included in *New Regulatory Finance* by Dr. Roger Morin.

The argument that an adjustment factor is needed to "correct" the CAPM results for companies with betas less than 1.0 is further evidence of the lack of accuracy inherent in the CAPM itself and with beta in particular, as I pointed out earlier in my Direct Testimony. The ECAPM adjustment also suggests that published betas by such sources as Value Line are incorrect and that investors should not rely on them in formulating their estimates using the CAPM. In fact, Mr. McKenzie testified on page 47, lines 21 through 22 of his Direct Testimony that Value Line is "the most widely referenced source for beta in regulatory proceedings." Finally, although Mr. McKenzie cited the source of the ECAPM formula he used, he provided no evidence that investors favor this version of the ECAPM over the standard CAPM.

Q. Please continue your evaluation of the results of Mr. McKenzie's CAPM and ECAPM analysis.

A. I disagree with Mr. McKenzie's general formulation of the CAPM and ECAPM and in particular with his estimate of the expected market return. He estimated the market return portion of the CAPM and ECAPM by estimating the current market return for dividend paying stocks in the S&P 500. The market return portion of the CAPM should represent the most comprehensive estimate of the total return for all investment alternatives, not just a small subset of publicly traded stocks that pay dividends. In practice, of course, finding such an estimate is difficult and is one of the thornier problems in estimating an accurate ROE when using the CAPM.

Q. Did Mr. McKenzie overstate the expected market return component of the CAPM and ECAPM.

A. In my opinion, he did. A major problem with Mr. McKenzie's CAPM analysis is the sole reliance on a forward-looking market return for the dividend paying firms from the S&P 500. The projected market return of 11.6% is overstated due to reliance on an average projected growth rate of 9.5% that is unsustainable in the long run.

This projected growth rate is unsustainably high in that it vastly exceeds both the historical capital appreciation for the S&P 500 as well as historical and projected GDP growth rates. Kroll's historical analysis shows that the arithmetic average capital appreciation for the S&P 500 was 7.9% for the historical period 1926 to 2022.[18] Geometric, or compound growth was 6.1%. This historical experience stands in stark contrast to Mr. McKenzie's average forecasted growth rate of 9.5%. I note that the

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

forward-looking growth rate I used in my CAPM analysis, 12.47%, is also excessive and provides further support for its exclusion by the Commission.

Mr. McKenzie's unsustainable earnings growth forecast is not supportable when one further considers both historical and forecasted GDP growth for the U.S. Based on data from the Bureau of Economic Analysis, U.S. Department of Commerce, I calculated that the compound yearly growth rate for U.S. GDP from 1929 - 2022 was 6.1%. It is noteworthy that this growth rate matched the historical compound growth rate for capital appreciation for the S&P 500 of 6.1%.

Regarding forecasts of GDP, projections that I referenced in Section II of my testimony show even lower forecasted GDP growth than the historical average I calculated. For example, the Fed projections called for longer-run real GDP growth of 1.8% and PCE inflation of 2.0%. This translates into forecasted nominal GDP of 3.80%. The Congressional Budget Office also projects growth in real GDP through 2033 of 1.80% and CPI inflation of 2.0%.[19] If we assume forecasted long run nominal GDP growth of around 4.0%, then the S&P 500 constant growth rate of 9.5% cannot be sustained over the long run. Using this growth rate will inevitably lead to an overstatement in the long-run expected market return, the associated MRP, and the CAPM ROE result.

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

> The growth rate assumed in calculating the terminal value is a compound growth rate *in perpetuity*, which is a very long time. At a growth rate of 20% compounded annually, the company's revenues would soon exceed the gross domestic product (GDP) of the United States and eventually that of the world. Long-term growth rates

[19] Congressional Budget Office, *The Economic Outlook for 2023 – 2033 in 16 Charts*, February 2023.

> exceeding the real growth in GDP plus inflation are generally not sustainable. Most analysts use more conservative growth rates in calculating the terminal value. Generally, the long-term growth rate only applies to the existing enterprise or core business net cash flows, consistent with the net cash flow projections in the discounted cash flow method . . . . [20]

Since the constant growth DCF requires a sustainable long-run growth rate, Mr. McKenzie's projected market return and MRP estimate are overstated and should be rejected.

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

A. No. As I cited earlier in my Direct Testimony, Kroll currently recommends an MRP of 5.5%, the average of the Damodaran MRPs is 4.82%, and the historical MRPs range from 5.37% - 7.10%. Mr. McKenzie's MRP, 7.8%, is significantly in excess of the historical MRP of 7.10%, which as I noted earlier is likely overstated itself.

Finally, I note that in the authoritative corporate finance textbook by Brealey, Myers, Allen and Edmans, the authors stated: "We have no official position on the issue, but we believe that a range of 5 to 8 percent is reasonable for the risk premium in the United States."[21] Mr. McKenzie's recommended MRP is near the top of this range.

Q. Beginning on page 48 of his Direct Testimony, Mr. McKenzie explained that he incorporated a size adjustment to his CAPM and ECAPM results. This increased his average CAPM and ECAPM results by 30 to 40 basis points, or 0.30% to 0.40%. Is this size adjustment appropriate?

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

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

A. No. The data that Mr. McKenzie relied upon to make this adjustment came from the Kroll 2023 Decile Size Study Data Exhibits in the Cost of Capital Navigator. The groups of companies from which he took this significant upward adjustment to his CAPM and ECAPM results contain many unregulated companies. Further, 13 of the 18 size adjustments used by Mr. McKenzie came from decile groups that had average betas ranging from 1.04 to 1.17[22]. These betas are greater than my proxy group average beta of 0.92, indicating that the decile groups that Mr. McKenzie used to make his size adjustment to most of the companies in his proxy group are riskier, at least as measured by beta. There is no evidence I am aware of to suggest that the size premium used by Mr. McKenzie applies to regulated utility companies, which on average are quite different from the group of companies included in the Kroll research on size premiums. I recommend that the Commission reject Mr. McKenzie's size premium in the CAPM and ECAPM ROE.

Q. Has the Commission rejected size adjustments in the past?

A. Yes. Recently, in its Order in Case No. 2022-00147, the Commission stated that "it continues to reject the use of flotation cost adjustments, financial risk adjustments and explicit size adjustments in the ROE analyses."[23]

<u>Utility Risk Premium</u>

Q. Please summarize Mr. McKenzie's utility risk premium approach.

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[22] Kroll, 2023 *CRSP Deciles Size Study Data*, Cost of Capital Navigator.

[23] Case No. 2022-00147, April 12, 2023, Water Service Corporation of Kentucky, page 48.

A. Mr. McKenzie developed an historical risk premium using Commission-allowed returns for regulated utility companies from 1974 through 2022. He also used regression analysis to estimate the value of the inverse relationship between utility bond yields and risk premiums during that period. The results of this analysis are summarized on page 1 of Exhibit AMM-9. Mr. McKenzie added the adjusted risk premium of 4.94% to the average Baa utility bond yield of 5.63% to obtain the utility risk premium ROE of 10.57%.

Q. Please respond to Mr. McKenzie's risk premium analysis.

A. Generally, the bond yield plus risk premium approach is imprecise and can only provide very general guidance on the current authorized ROE for a regulated electric utility. Risk premiums can change substantially over time and with varying risk perceptions of investors. As such, this approach is a "blunt instrument", if you will, for estimating the ROE in regulated proceedings. In my view, a properly formulated DCF model using current stock prices and growth forecasts is far more reliable and accurate than the bond yield plus risk premium approach, which relies on an historical risk premium analysis over a certain period of time.

This analysis also assumes that investor required ROEs are deterministically based on average commission-allowed ROEs and the risk premium relationship posited by Mr. McKenzie's regression analysis. Mr. McKenzie presented no evidence that investors in public utility stocks adopt this mechanistic approach to their expected returns.

Finally, I tested Mr. McKenzie's analysis to see how his risk premium equation matched up with actual historical ROE results. For 2022, the average commission-

allowed ROE was 9.52% according to the data Mr. McKenzie presented on AMM-9, page 2. The average utility bond yield for 2022 was 4.76%. Using Mr. McKenzie's formula shown on Exhibit AMM-9, page 1, the predicted risk premium ROE is shown on Table 3.

Table 3
2022 Predicted Risk Premium ROE

1	Avg. Yield over Study Period	7.83%
2	Average 2022Utility Bond Yield	4.76%
3	Change in Bond Yield (Line 2 minus Line 1)	-3.07%
4	Risk Premium/Interest Rate Relationship	-0.4273
5	Adjustment to Average Risk Premium (Line 4 times Line 3)	1.31%
6	Average Risk Premium over Study Period	3.89%
7	Adjusted Risk Premium (Line 6 plus Line 5)	5.20%
8	Average 2022 Utility Bond Yield	4.76%
9	Adjusted Equity Risk Premium	5.20%
10	Predicted Risk Premium ROE (Line 8 plus Line 9)	9.96%

Mr. McKenzie's predicted 2022 ROE would be 9.96% compared to the actual 2022 average ROE of 9.52%, an excess ROE of 44 basis points, or 0.44%. Obviously, applying Mr. McKenzie's formula could result in highly inaccurate ROEs.

Expected Earnings Approach

Q. Beginning on page 56 of his Direct Testimony, Mr. McKenzie presented an expected earnings approach based on expected returns on equity using Value Line's rates of return on common equity for the companies in the proxy group over its forecast horizon. Is this a reasonable method for estimating the current required return on equity in this proceeding?

A. No. Forecasted returns from Value Line will not be as reliable or as accurate as a properly specified DCF analysis using current stock prices. Through current stock prices, investors reveal their return requirements through what they are willing to pay in the marketplace for the stocks of regulated electric utilities. Using Value Line's

projected returns for a time period several years into the future is highly speculative and I recommend that the Commission give this approach no weight.

In addition, Mr. McKenzie overstated the forecasted returns from Value Line by making an adjustment to the average shares outstanding over the forecast period (2025 – 2027 or 2026 to 2028). It should be kept in mind that Value Line's three-year forecasted period already represents an average of shares and ROEs over the period, rendering Mr. McKenzie's share adjustment both unnecessary and incorrect. Further, it is highly unlikely that an investor using Value Line's data would make the adjustment to each utility's forecasted common shares outstanding that Mr. McKenzie proposed in order to calculate a projected ROE. Subtracting out Mr. McKenzie's adjustment results in an average forecasted ROE of 11.0%. However, this number is still grossly in excess of the more reasonable and market based DCF results I presented earlier in my Direct Testimony. It also exceeds the range of results from my CAPM analyses, excluding the high outlier result from the forward-looking approach I presented.

Flotation Costs

Q. Beginning on page 58 of his Direct Testimony, Mr. McKenzie discussed flotation costs. Should the Commission consider including a flotation cost adjustment to KPC's allowed ROE in this proceeding?

A. No. Mr. McKenzie recommended that the Commission consider adding an adjustment of 10 basis points to recognize flotation costs. A flotation cost adjustment attempts to recognize and collect the costs of issuing common stock. Such costs typically include legal, accounting, and printing costs as well as well as broker fees and discounts.

In my opinion, it is likely that flotation costs are already accounted for in current stock prices and that adding an adjustment for flotation costs amounts to double counting. A DCF model using current stock prices should already account for investor expectations regarding the collection of flotation costs. Multiplying the dividend yield by a 4% flotation cost adjustment, for example, essentially assumes that the current stock price is wrong and that it must be adjusted downward to increase the dividend yield and the resulting cost of equity. This is an appropriate assumption regarding investor expectations. Current stock prices most likely already account for flotation costs, to the extent that such costs are even accounted for by investors.

Finally, as I stated earlier the Commission has rejected flotation cost adjustments in the past. Mr. McKenzie presented no new information in his Direct Testimony that would change this practice.

Non-Utility Benchmark

Q. Beginning of page 63 of his Direct Testimony, Mr. McKenzie presented the results of a low-risk non-utility DCF model. Is it appropriate to use a group of unregulated companies to estimate a fair return on equity for KPC?

A. No. Mr. McKenzie's use of unregulated non-utility companies to estimate a fair rate of return for KPC is completely inappropriate and should be rejected by the Commission.

Utilities have protected markets, e.g. service territories, and may increase the prices they charge in the face of falling demand or loss of customers. This is contrary to competitive, unregulated companies who often lower their prices when demand for their products decline. Obviously, the non-utility companies face risks that a lower risk electric company like KPC does not face. As a consequence, non-utility

companies will have higher required returns from their shareholders. The average DCF results for Mr. McKenzie's non-utility group range from 10.4% - 10.9%. The midpoint results range from 10.7% - 12.1%. These results are substantially greater than the utility proxy group DCF results for both me and Mr. McKenzie and simply shows that investors expect higher return for this group of unregulated companies.

Although Mr. McKenzie stated that he did not directly consider the non-utility group DCF results in arriving at his recommended ROE range, he stated that it was "a relevant consideration in evaluating a fair return for the Company." (McKenzie Direct Testimony, page 63, Lines 7 - 10). I disagree. The relevant consideration should be the DCF results for the utility proxy group that I employed in my analysis.

Q. Does this complete your Direct Testimony?

A. Yes.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY POWER COMPANY FOR (1) A GENERAL ADJUSTMENT OF ITS RATES FOR ELECTRIC SERVICE; (2) APPROVAL OF TARIFFS AND RIDERS; (3) APPROVAL OF ACCOUNTING PRACTICES TO ESTABLISH REGULATORY ASSETS AND LIABILITIES; (4) A SECURITIZATION FINANCING ORDER; AND (5) ALL OTHER REQUIRED APPROVALS AND RELIEF	**)**	**CASE NO. 2023-00159**

EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF

THE KENTUCKY OFFICE OF THE ATTORNEY GENERAL
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA

OCTOBER 2020

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.
Major in Economics
Minor in Statistics

New Mexico State University, B.A.
Economics
English

Thirty-nine years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies
Electric, Gas, and Water Utility Cost Allocation and Rate Design
Revenue Requirements
Gas and Electric industry restructuring and competition
Fuel cost auditing
Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to Present: **Kennedy and Associates: Director of Consulting, Consultant** - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to 1989: **New Mexico Public Service Commission Staff: Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System
Air Products and Chemicals, Inc.
Arkansas Electric Energy Consumers
Arkansas Gas Consumers
AK Steel
Armco Steel Company, L.P.
Aqua Large Users Group
Assn. of Business Advocating Tariff Equity
Atmos Cities Steering Committee
Canadian Federation of Independent Businesses
CF&I Steel, L.P.
Cities of Midland, McAllen, and Colorado City
Cities Served by Texas-New Mexico Power Co.
Cities Served by AEP Texas
City of New York
Climax Molybdenum Company
Connecticut Industrial Energy Consumers
Crescent City Power Users Group
Cripple Creek & Victor Gold Mining Co.
Dearborn Industrial Generation, LLC
General Electric Company
Holcim (U.S.) Inc.
IBM Corporation
Industrial Energy Consumers
Kentucky Industrial Utility Consumers
Kentucky Office of the Attorney General
Lexington-Fayette Urban County Government
Large Electric Consumers Organization
Newport Steel
North Carolina Attorney General's Office
Northwest Arkansas Gas Consumers
Maryland Energy Group
Occidental Chemical
PSI Industrial Group
Large Power Intervenors (Minnesota)
Tyson Foods
West Virginia Energy Users Group
The Commercial Group
Wisconsin Industrial Energy Group
South Florida Hospital and Health Care Assn.
PP&L Industrial Customer Alliance
Philadelphia Area Industrial Energy Users Gp.
Philadelphia Large Users Group
West Penn Power Intervenors
Duquesne Industrial Intervenors
Met-Ed Industrial Users Gp.
Penelec Industrial Customer Alliance
Penn Power Users Group
Columbia Industrial Intervenors
U.S. Steel & Univ. of Pittsburg Medical Ctr.
Multiple Intervenors
Maine Office of Public Advocate
Missouri Office of Public Counsel
University of Massachusetts - Amherst
WCF Hospital Utility Alliance
West Travis County Public Utility Agency
Steering Committee of Cities Served by Oncor
Utah Office of Consumer Services
Healthcare Council of the National Capital Area
Vermont Department of Public Service
South Carolina Office of Regulatory Staff
Texas Industrial Energy Consumers

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jornada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/ GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343-000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.,Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States,Inc.	Cost of debt.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
10/99	R-00994782	PA	Peoples Industrial Intervenors	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenors	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.
11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and Health Care Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T	WV	West Virginia Energy Users Group	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues
07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation

Expert Testimony Appearances
of
Richard A. Baudino
As of September 2023

Date	Case	Jurisdict.	Party	Utility	Subject
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation
03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design

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04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co,	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return

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08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider
08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.

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Date	Case	Jurisdict.	Party	Utility	Subject
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital
2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital

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03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider

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

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

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10/22	2022-00147	KY	Kentucky Office of the Attorney General and the City of Clinton	Water Service Corporation of Kentucky	Cost of equity
12/22	2022-254-E	SC	South Carolina Office of Regulatory Staff	Duke Energy Progress	Cost of equity
12/22	22-08-08	CT	Connecticut Industrial Energy Consumers	United Illuminating Co.	Cost and revenue allocation, rate design, economic development rates
03/23	2022-00372	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Cost of equity, capital structure, weighted cost of capital
08/23	23-0280-G-42-T	WV	West Va. Energy Users Group	Mountaineer Gas Co.	Cost and revenue allocation, Rate design
09/23	6680-UR-124	WI	Wisconsin Industrial Energy Group	Wisconsin Power and Light Co.	Cost and revenue allocation, rate design
09/23	6690-UR-127	WI	Wisconsin Industrial Energy Group	Wisconsin Public Service Corp.	Revenue allocation, rate design
09/23	5-UR-110	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
09/23	2023-00191	KY	Kentucky Office of the Attorney General	Kentucky-American Water Co.	Return on equity, capital structure, and weighted cost of capital
10/23	2023-00159	KY	Ky. Office of the Attorney General, Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
Avista Corp.	High Price ($)	42.730	45.130	44.770	42.660	40.130	39.020
	Low Price ($)	39.660	41.840	40.700	38.160	36.030	32.270
	Avg. Price ($)	41.195	43.485	42.735	40.410	38.080	35.645
	Dividend ($)	0.4600	0.4600	0.4600	0.4600	0.4600	0.4600
	Mo. Avg. Div.	4.47%	4.23%	4.31%	4.55%	4.83%	5.16%
	6 mos. Avg.	4.59%					
Black Hills Corp.	High Price ($)	63.490	66.610	66.850	64.470	61.940	60.860
	Low Price ($)	58.810	62.060	59.930	59.060	56.750	53.880
	Avg. Price ($)	61.150	64.335	63.390	61.765	59.345	57.370
	Dividend ($)	0.6250	0.6250	0.6250	0.6250	0.6250	0.6250
	Mo. Avg. Div.	4.09%	3.89%	3.94%	4.05%	4.21%	4.36%
	6 mos. Avg.	4.09%					
CenterPoint Energy	High Price ($)	29.650	30.970	31.030	29.580	31.440	29.910
	Low Price ($)	27.220	29.160	27.880	27.890	28.940	27.840
	Avg. Price ($)	28.435	30.065	29.455	28.735	30.190	28.875
	Dividend ($)	0.190	0.190	0.190	0.190	0.190	0.190
	Mo. Avg. Div.	2.67%	2.53%	2.58%	2.64%	2.52%	2.63%
	6 mos. Avg.	2.60%					
CMS Energy	High Price ($)	62.900	63.030	62.850	61.590	63.760	61.330
	Low Price ($)	57.000	60.220	56.220	56.830	58.110	55.890
	Avg. Price ($)	59.950	61.625	59.535	59.210	60.935	58.610
	Dividend ($)	0.4875	0.4875	0.4875	0.4875	0.4875	0.4875
	Mo. Avg. Div.	3.25%	3.16%	3.28%	3.29%	3.20%	3.33%
	6 mos. Avg.	3.25%					
DTE Energy	High Price ($)	110.280	116.020	114.830	115.170	116.730	114.530
	Low Price ($)	102.270	107.970	105.660	105.770	108.250	103.350
	Avg. Price ($)	106.275	111.995	110.245	110.470	112.490	108.940
	Dividend ($)	0.9525	0.9525	0.9525	0.9525	0.9525	0.9525
	Mo. Avg. Div.	3.59%	3.40%	3.46%	3.45%	3.39%	3.50%
	6 mos. Avg.	3.46%					
Duke Energy Corp.	High Price ($)	98.650	100.390	100.130	92.970	96.410	93.990
	Low Price ($)	91.370	94.490	87.520	87.200	88.570	88.720
	Avg. Price ($)	95.010	97.440	93.825	90.085	92.490	91.355
	Dividend ($)	1.0050	1.0050	1.0050	1.0050	1.0050	1.0250
	Mo. Avg. Div.	4.23%	4.13%	4.28%	4.46%	4.35%	4.49%
	6 mos. Avg.	4.32%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
Edison International	High Price ($)	70.660	74.100	74.920	70.670	74.230	72.530
	Low Price ($)	63.930	69.670	64.660	66.010	67.650	67.920
	Avg. Price ($)	67.295	71.885	69.790	68.340	70.940	70.225
	Dividend ($)	0.7375	0.7375	0.7375	0.7375	0.7375	0.7375
	Mo. Avg. Div.	4.38%	4.10%	4.23%	4.32%	4.16%	4.20%
	6 mos. Avg.	4.23%					
Emera Inc.	High Price ($)	56.590	59.160	59.520	56.750	55.740	53.530
	Low Price ($)	51.940	54.670	55.570	52.960	52.410	50.040
	Avg. Price ($)	54.265	56.915	57.545	54.855	54.075	51.785
	Dividend ($)	0.690	0.690	0.690	0.690	0.690	0.690
	Mo. Avg. Div.	5.09%	4.85%	4.80%	5.03%	5.10%	5.33%
	6 mos. Avg.	5.03%					
Entergy Corp.	High Price ($)	107.750	111.900	108.810	103.270	105.750	102.800
	Low Price ($)	99.700	104.870	95.590	94.160	95.710	94.010
	Avg. Price ($)	103.725	108.385	102.200	98.715	100.730	98.405
	Dividend ($)	1.070	1.070	1.070	1.070	1.070	1.070
	Mo. Avg. Div.	4.13%	3.95%	4.19%	4.34%	4.25%	4.35%
	6 mos. Avg.	4.20%					
IDACORP, Inc.	High Price ($)	108.800	112.960	112.910	106.690	106.330	102.870
	Low Price ($)	100.530	105.940	102.290	101.500	100.760	92.400
	Avg. Price ($)	104.665	109.450	107.600	104.095	103.545	97.635
	Dividend ($)	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
	Mo. Avg. Div.	3.02%	2.89%	2.94%	3.04%	3.05%	3.24%
	6 mos. Avg.	3.03%					
NorthWestern Energy	High Price ($)	58.010	61.240	60.290	59.590	58.380	56.770
	Low Price ($)	53.390	57.060	55.870	55.770	54.790	50.360
	Avg. Price ($)	55.700	59.150	58.080	57.680	56.585	53.565
	Dividend ($)	0.640	0.640	0.640	0.640	0.640	0.640
	Mo. Avg. Div.	4.60%	4.33%	4.41%	4.44%	4.52%	4.78%
	6 mos. Avg.	4.51%					
Otter Tail Corp.	High Price ($)	73.050	74.570	79.080	79.680	84.970	92.740
	Low Price ($)	67.550	69.100	71.620	72.160	76.900	81.390
	Avg. Price ($)	70.300	71.835	75.350	75.920	80.935	87.065
	Dividend ($)	0.4375	0.4375	0.4375	0.4375	0.4375	0.4375
	Mo. Avg. Div.	2.49%	2.44%	2.32%	2.31%	2.16%	2.01%
	6 mos. Avg.	2.29%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
Public Service Enterprise Gp.	High Price ($)	62.560	64.620	64.490	62.980	65.460	65.300
	Low Price ($)	56.080	60.810	59.020	58.890	61.730	59.360
	Avg. Price ($)	59.320	62.715	61.755	60.935	63.595	62.330
	Dividend ($)	0.5700	0.5700	0.5700	0.5700	0.5700	0.5700
	Mo. Avg. Div.	3.84%	3.64%	3.69%	3.74%	3.59%	3.66%
	6 mos. Avg.	3.69%					
Sempra Energy	High Price ($)	76.145	79.515	79.295	74.990	76.495	74.975
	Low Price ($)	69.280	74.435	70.950	71.265	71.275	69.880
	Avg. Price ($)	72.712	76.975	75.122	73.127	73.885	72.427
	Dividend ($)	0.595	0.595	0.595	0.595	0.595	0.595
	Mo. Avg. Div.	3.27%	3.09%	3.17%	3.25%	3.22%	3.29%
	6 mos. Avg.	3.22%					
Southern Company	High Price ($)	70.420	74.460	75.800	72.190	73.840	72.540
	Low Price ($)	61.730	68.250	69.020	68.590	68.810	67.140
	Avg. Price ($)	66.075	71.355	72.410	70.390	71.325	69.840
	Dividend ($)	0.6800	0.6800	0.7000	0.7000	0.7000	0.7000
	Mo. Avg. Div.	4.12%	3.81%	3.87%	3.98%	3.93%	4.01%
	6 mos. Avg.	3.95%					
Monthly Avg. Dividend Yield		3.82%	3.63%	3.70%	3.79%	3.77%	3.89%
6-month Avg. Dividend Yield		3.76%					
3-month Ag. Dividend Yield		3.82%					

Source: finance.yahoo.com/quote

PROXY GROUP
DCF Growth Rate Analysis

	Company	(1) Value Line DPS	(2) Value Line EPS	(3) Zacks	(4) Yahoo! Finance
1	Avista Corp.	4.00%	6.50%	6.30%	6.30%
2	Black Hills Corp.	4.50%	3.00%	2.20%	5.40%
3	CenterPoint Energy	2.50%	6.50%	7.50%	7.50%
4	CMS Energy	6.00%	6.50%	7.80%	7.80%
5	DTE Energy	3.00%	4.50%	6.00%	7.40%
6	Duke Energy Corp.	2.00%	5.00%	6.10%	5.95%
7	Edison International	5.00%	4.50%	3.70%	4.53%
8	Emera Inc.	2.50%	13.00%	3.49%	3.49%
9	Entergy Corp.	4.00%	0.50%	5.70%	6.60%
10	IDACORP, Inc.	6.00%	5.00%	3.70%	3.70%
11	NorthWestern Energy	2.00%	3.50%	5.20%	3.66%
12	Otter Tail Corp.	7.00%	4.50%	9.00%	9.00%
13	Public Service Enterprise Gp.	5.50%	4.00%	5.50%	5.50%
14	Sempra Energy	5.50%	7.00%	5.00%	4.14%
15	Southern Company	3.50%	6.50%	4.00%	7.30%
	Averages excluding negatives	4.20%	5.37%	5.41%	5.88%
	Median excluding negatives	4.00%	5.00%	5.50%	5.95%

Sources: **Value Line Investment Survey, July 21, August 11, and September 8, 2023**
Yahoo! Finance and Zacks growth rates retrieved August 25, 2023
Note: Yahoo! growth rates were substituted for unavailable Zacks growth rates for Otter Tail and Emera

PROXY GROUP
DCF RETURN ON EQUITY

	(1) Value Line Dividend Gr.	(2) Value Line Earnings Gr.	(3) Zack's Earning Gr.	(4) Yahoo! Earning Gr.	(5) Average of Earnings Gr.
Method 1:					
Dividend Yield	3.76%	3.76%	3.76%	3.76%	3.76%
Proxy Group Average Growth Rate	4.20%	5.37%	5.41%	5.88%	5.55%
Expected Dividend Yield	3.84%	3.87%	3.87%	3.88%	3.87%
DCF Return on Equity	***8.04%***	***9.24%***	***9.28%***	***9.76%***	***9.42%***
Method 2:					
Dividend Yield	3.76%	3.76%	3.76%	3.76%	3.76%
Proxy Group Median Growth Rate	4.00%	5.00%	5.50%	5.95%	5.48%
Expected Dividend Yield	3.84%	3.86%	3.87%	3.88%	3.87%
DCF Return on Equity	***7.84%***	***8.86%***	***9.37%***	***9.83%***	***9.35%***

PROXY GROUP
Capital Asset Pricing Model Analysis

Value Line Forward-Looking MRP

Line No.		Value Line
1	Market Required Return Estimate	14.77%
2	Risk-free Rate of Return, 30-Year Treasury Bond	4.30%
3	Risk Premium	
4	(Line 1 minus Line 2)	10.47%
5	Proxy Group Beta	0.92
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	9.60%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	13.90%

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	Avg. Yield
Mar-23	3.77%
Apr-23	3.68%
May-23	3.86%
Jun-23	3.87%
Jul-23	3.96%
Aug-23	4.28%
6 month average	3.90%

Source: Federal Reserve data

Value Line Projected Return Data:

Median Esimtated Div. Yield	2.30%
3 - 5 Year Price Appreciation	60.00%
Estimated Annualized Price Appreciation	12.47%
Est. Annual Total Return	14.77%

Source: Value Line Summary and Index, September 1, 2023

Proxy Group Betas:

	Value Line
Avista Corp.	0.90
Black Hills Corp.	1.00
CenterPoint Energy	1.10
CMS Energy	0.80
DTE Energy	0.95
Duke Energy Corp.	0.85
Edison International	1.00
Emera Inc.	0.70
Entergy Corp.	0.95
IDACORP, Inc.	0.80
NorthWestern Energy	0.95
Otter Tail Corp.	0.90
Public Service Enterprise Gp.	0.95
Sempra Energy	1.00
Southern Company	0.90
Proxy Group Average Beta	0.92

PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	Arithmetic Mean	Supply Side ERP	Supply Side Less WWII Bias
Long-Term Annual Return on Stocks	12.00%		
Long-Term Annual Income Return on Long-Term Treas. Bonds	4.90%		
Historical Market Risk Premium	7.10%	6.35%	5.37%
Proxy Group Beta, Value Line	0.92	0.92	0.92
Beta * Market Premium	6.51%	5.82%	4.92%
Risk-free Rate of Return	4.30%	4.30%	4.30%
CAPM Cost of Equity, Value Line Beta	**10.81%**	**10.12%**	**9.22%**

Source: Kroll Cost of Capital Navigator: U.S. Cost of Capital Module:
Summary Statistics of Annual Total Returns, Income Returns, and Capital Appreciation Returns of Basic U.S. Asset Classes;

Basic Building Blocks of the Cost of Equity Capital - Risk Free Rate and Equity Risk Premium (Abridged)

PROXY GROUP
Capital Asset Pricing Model Analysis
Kroll and Damodoran MRPs

	Kroll	Damodaran
Market Risk Premium	5.50%	4.82%
Gas Proxy Group Beta	0.92	0.92
Beta times MRP	5.04%	4.42%
Risk-free Rate of Return	4.30%	4.30%
CAPM Cost of Equity	9.34%	8.72%

AFFIDAVIT

STATE OF GEORGIA)

COUNTY OF FULTON)

RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.

Richard A. Baudino

Richard A. Baudino

Sworn to and subscribed before me on this

2nd day of October, 2023.

Jessica K. Inman

Notary Public

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