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) APPROVAL OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND (5) ALL OTHER REQUIRED APPROVALS AND RELIEF	**)**	**CASE NO. 2020-00174**

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 2020

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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 No. ___(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 and capital structure 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 a range of 8.93% - 9.25% for the return on equity ("ROE") for Kentucky Power Company in this proceeding. My recommended ROE range is based on the results of a Discounted Cash Flow ("DCF") model analysis. My DCF analysis incorporates my standard approach to estimating the investor required return on equity and includes a proxy group of 21 companies and dividend and earnings growth forecasts from the Value Line Investment Survey, Yahoo! Finance, and Zacks.

My recommended range of ROE results fully incorporates the impact on financial markets from the economic upheaval caused by the COVID-19 pandemic. I will provide more information on this later in my testimony.

Mr. Lane Kollen, witness for the AG and KIUC, recommends that the Commission adopt a 9.0% ROE in this case. Mr. Kollen explains the additional regulatory policy considerations for the adoption of a 9.0% ROE. Mr. Kollen's recommendation falls within my recommended range of DCF and CAPM ROE results and I support his recommendation.

I also included two Capital Asset Pricing Model ("CAPM") analyses that employed both forward-looking and historical market risk premiums. I did not directly incorporate the results of the CAPM in my recommendation, although the range of results from the CAPM support my ROE recommendation for KPC.

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 10.30% significantly overstates the current investor required return for KPC. Today's financial environment of low interest rates has been deliberately and methodically supported by Federal Reserve policy actions since 2009. A 10.30% ROE is inconsistent with investor required returns for low-risk regulated utilities like KPC.

Mr. McKenzie evaluated KPC's requested ROE of 10.0% 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 10.0% ROE would inflate the Company's revenue requirement and contribute to an unnecessary additional rate increase for Kentucky ratepayers. Compared to the AG/KIUC recommended ROE of 9.0%, a 10.0% ROE would increase the revenue requirement by $8.33 million per year based on the Company's requested capital structure and rate base. This is an especially important consideration in the currently difficult economic environment. Ratepayers should support a fair rate of return to the Company and not be burdened with excessive costs from an inflated 10.0% ROE.

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

II. REVIEW OF ECONOMIC AND FINANCIAL 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, let us suppose that an investor decides to purchase the stock of a publicly-traded regulated gas 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 electric company 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 that is equal to the return being offered by other risk-comparable firms.

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

A. Yes. The common stock of regulated utilities is considered 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 the utility industry, which relies heavily on both debt and equity to finance its regulated investments.

Q. Before you continue, please provide a brief explanation of how the 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 three economic goals the Congress has instructed the Federal Reserve to pursue.[2]

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

[2] https://www.federalreserve.gov/monetarypolicy.htm

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.

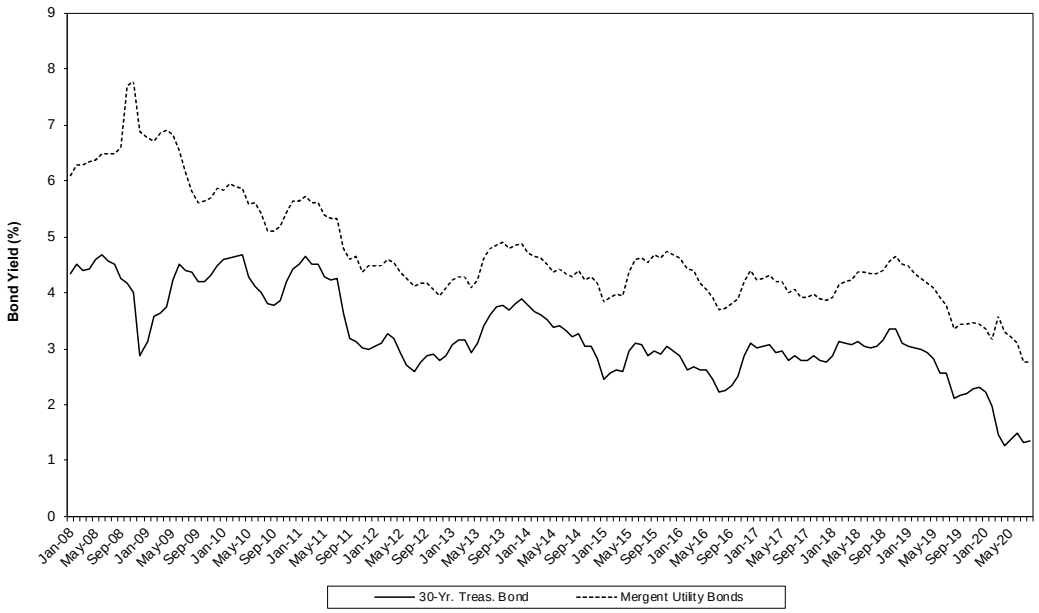
Q. Describe the trend in interest rates over the last 10 or so years.

A. Since 2007 and 2008, the overall trend in interest rates in the U.S. and the world economy has been lower and this trend continued this year as governments and central banks instituted programs in response to the economic shocks brought about 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 Federal Reserve ("Fed") undertook an unprecedented 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]

Figure 1 below presents a graph that tracks the 30-Year Treasury bond yield and the Mergent average utility bond yield. The time period covered is January 2008 through August 2020.

[3] https://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm

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



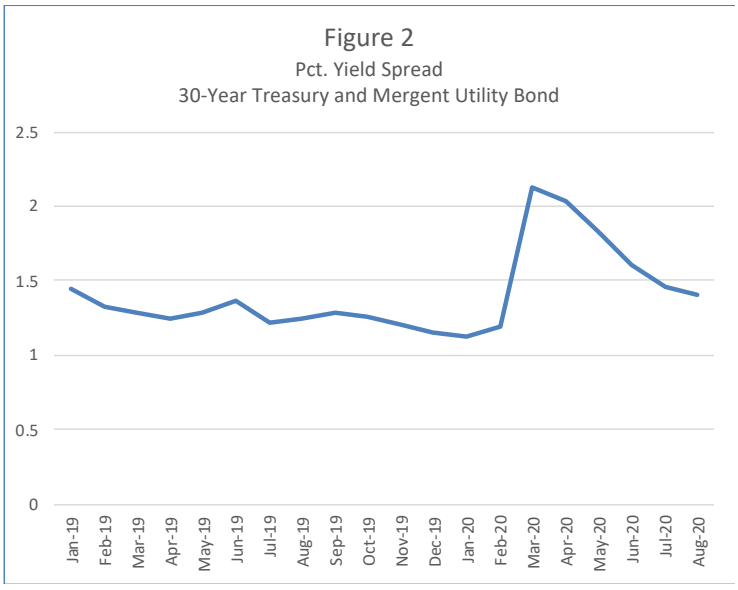
We can see from the graph in Figure 1 that since 2008, the trend in long-term bond yields has been lower. In January 2008, the yield on the 30-Year Treasury bond was 4.33% and the yield on the average public utility bond was 6.08%. As of August 2020, the 30-Year Treasury yield was 1.36% and the average utility bond yield was 2.76%.

I note that March and April 2020 were months of severe financial market volatility stemming from the COVID-19 pandemic and the attendant world-wide economic shutdowns. The yield on the 30-Year Treasury bond declined from an already low 1.97% in February 2020 to 0.99% on March 9, increased to 1.63% on March 17, and ended March at 1.46%.

Alternatively, the yield on the average public utility bond increased dramatically in March, rising from 3.14% in February to 4.24% on March 18, according to Moody's

Credit Trends. At the end of March, the average public utility bond yield fell to 3.59% according to the Mergent Bond Record. As of August 2020 the yield on the average public utility bond has declined even further to 2.76%. This August 2020 yield is significantly lower than the pre-pandemic January 2020 average utility bond yield of 3.34% and is the lowest yield of the entire historical period covered in Figure 1.

Figure 2 below presents the percentage yield spread between 30-Year Treasury Bonds and the Mergent average utility bond from January 2019 through August 2020. Figure 2 shows that the yield spread in January 2019 was 1.44%, meaning that the average utility bond yield was 1.44% higher than the 30-Year Treasury Bond yield. The yield spread declined through 2019 and into February 2020, then spiked up to 2.13% in March and 2.03% in April. The yield spread then declined from May through August, finishing August at 1.40%. The behavior of the monthly yield spreads depicted in Figure 2 suggests that the market's perception of the relative risk of regulated utility bond increased substantially in March and April of 2020, but has subsided significantly since then.



Q. Please summarize recent Fed actions with respect to monetary policy that led to lower interest rates this year.

A. In 2019, the Fed lowered the federal funds rate three times. On March 3, 2020, and March 15, 2020, the Fed again lowered the federal funds rate in response to mounting concerns associated with the spread of the coronavirus worldwide and the associated lockdowns of the economy. Beginning in March 2020, the Fed also announced expanded actions to support credit and financial markets. The Board of Governors of the Fed system established a new resource on its web site that contains the Fed's ongoing response to the COVID-19 pandemic: https://www.federalreserve.gov/covid-19.htm. Some of the major actions undertaken by the Fed include the following:

- Created the Municipal Liquidity Facility to assist state and local governments manage cash flow to better serve households and businesses (April 9, 2020).
- Created the Main Street Lending Program to support small and medium sized businesses (April 9, 2020). There are three facilities that comprise this program: the Main Street New Loan Facility, the Main Street Priority Loan Facility, and the Main Street Expanded Loan Facility.
- Established the Commercial Paper Funding Facility designed to support the flow of credit to households and businesses (March 17, 2020).
- Established the Primary Dealer Credit Facility designed to support households and businesses (March 17, 2020).
- Established the Money Market Mutual Fund Liquidity Facility as another program to facilitate the flow of credit to households and businesses (March 18, 2020).

- Established the Primary and Secondary Corporate Credit Facilities that support credit to employers (March 23, 2020).
- Implemented the Paycheck Protection Program Liquidity Facility to support the Small Business Administration's Paycheck Protection Program (April 9, 2020).
- Established the Term Asset-Backed Securities Loan Facility ("TALF"), again to support the flow of credit to consumers and businesses (March 23, 2020).[4]

On September 16, 2020, the Fed issued its most recent statement regarding its continued support of the U.S. economy:

"The Federal Reserve is committed to using its full range of tools to support the U.S. economy in this challenging time, thereby promoting its maximum employment and price stability goals.

The COVID-19 pandemic is causing tremendous human and economic hardship across the United States and around the world. Economic activity and employment have picked up in recent months but remain well below their levels at the beginning of the year. Weaker demand and significantly lower oil prices are holding down consumer price inflation. Overall financial conditions have improved in recent months, in part reflecting policy measures to support the economy and the flow of credit to U.S. households and businesses.

The path of the economy will depend significantly on the course of the virus. The ongoing public health crisis will continue to weigh on economic activity, employment, and inflation in the near term, and poses considerable risks to the economic outlook over the medium term.

The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. With inflation running persistently below this longer-run goal, the Committee will aim to achieve inflation moderately above 2 percent for some time so that inflation averages 2 percent over time and longer-term inflation expectations remain well anchored at 2 percent. The Committee expects to maintain an accommodative stance of monetary policy until these outcomes are achieved. The

[4] For more information on the Fed's response to COVID-19, please see https://www.federalreserve.gov/funding-credit-liquidity-and-loan-facilities.htm.

Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent and expects it will be appropriate to maintain this target range until labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2 percent and is on track to moderately exceed 2 percent for some time. In addition, over coming months the Federal Reserve will increase its holdings of Treasury securities and agency mortgage-backed securities at least at the current pace to sustain smooth market functioning and help foster accommodative financial conditions, thereby supporting the flow of credit to households and businesses."

Q. Please summarize the impact on the stock market during the period of March through September of this year.

A. In March the stock market underwent a steep, sharp decline of approximately 19% as investors reacted to the economic impact of COVID-19. Utilities also declined in March, with the Dow Jones utility average declining from 886.52 on March 2 to a March low of 695, a decline of about 21.6% with substantial volatility, or changes to the index's value, within the month. In April, however, the Dow Jones Industrial Average ("DJIA"), the Standard and Poor's 500 ("S&P 500") and the Dow Jones Utility Average ("DJUA") began to recover. The Dow Jones utility index recovered to finish April at 761.83, an increase of 9.6% from the March low. As of September 25, 2020, the Dow Jones Utility Index stood at 808.13. This represents a recovery of 16.3% from the March low of 695.

Q. Please provide the Commission with some additional background information regarding the substantial market volatility you just mentioned.

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 below presents the VIX from February 1 through September 25, 2020.

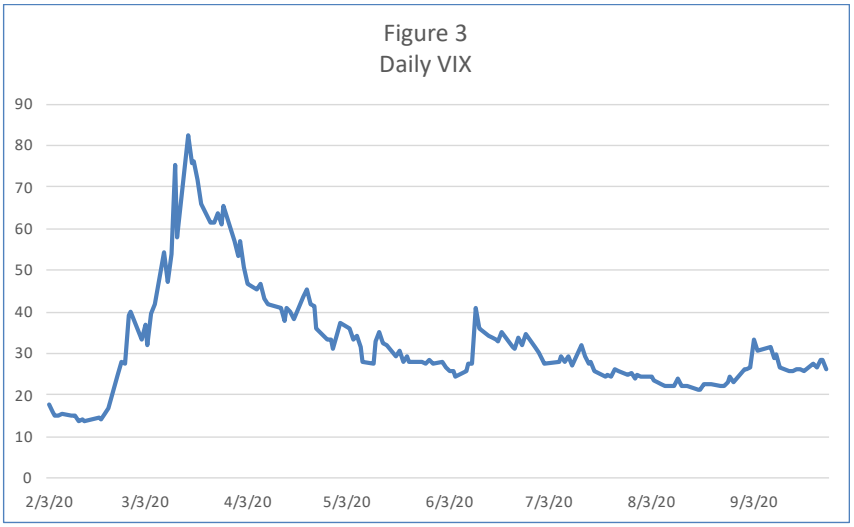


Figure 3 shows that the VIX was much lower at the beginning of February (17.97), shot up to a high of 82.69 on March 16, then generally declined through the year so far, with the VIX at 26.38 on September 25, 2020. Figure 3 shows us that stock market volatility has decline substantially since the March - April period, but is still elevated compared to February. It is also elevated compared to the daily average for 2019, which was 15.39.

Q. How does the investment community regard the electric utility industry as a whole?

A. The September 11, 2020 Value Line Investment Survey report on the Electric Utility (Central) Industry stated the following:

> When companies in the Electric Utility Industry reported first-quarter earnings, the major topic was the coronavirus and the weak economy. Utilities disclosed their expectations about how the lockdowns, stay-at-home orders, and coronavirus-related costs would affect their results. Some companies cut their earnings guidance for 2020, and ALLETE temporarily withdrew its target for this year. To assist customers in this troubled time, utilities (voluntarily or by state order) suspended disconnections for nonpayment and waived late fees.
>
> By the second week of June, every state had lifted its stay-at-home order, although numerous restrictions (such as bans on indoor dining) are still in effect in some states. With many people working from home and many businesses shut—temporarily or permanently—it was obvious that residential kilowatt-hour sales would rise

considerably and commercial and industrial volume would decline sharply. Now that the data are in, for some companies, the problems weren't as severe as management originally feared.

* * *

As for costs associated with the coronavirus (direct and indirect such as a rise in bad-debt expense), many states are allowing utilities to defer these for recovery in their next general rate cases. Beginning in September, utilities in some states will resume disconnecting customers for nonpayment and imposing late fees.

Q. Please summarize the electric industry's 2020 credit rating situation as reported by the Edison Electric Institute ("EEI").

A. EEI's most recent assessment of the electric industry's credit fundamentals is contained in its publication entitled *Credit Ratings Q2 2020*, which contains data and analysis through June 30, 2020. The EEI publication noted the following with respect to the industry's credit rating through the second quarter of this year:

- The electric utility industry credit remained generally strong, although overall ratings activity was relatively light, with only 16 total actions: 6 upgrades and 10 downgrades.
- The average parent company credit rating was BBB+, a level that has held since 2014. 80% of parent company outlooks were "stable", 4.4% were "positive" or "watch-positive", and only 15.6% were "negative" or "watch-negative."
- Although the economic impact of COVID-19 caused S&P to revise the industry's outlook from stable to negative, Moody's and Fitch maintained a stable outlook for their broad U.S. regulated utility sectors.

Q. Please present the latest comments from Fitch Ratings with respect to the earnings of the regulated utility industry.

A. On September 3, 2020 Fitch Ratings announced the following with respect to the second quarter earnings for the U.S. Utilities sector:

Strong 2Q20 Earnings Median earnings per share (EPS) at U.S. electric and natural gas utilities covered by Fitch Ratings increased by 5.0% in 2Q20 from 2Q19. More than 65% of Fitch's sample universe of utilities reported a yoy EPS increase for the second quarter. The median change in EPS for 1H20 increased 1.4% compared with 1H19. Strong residential sales and favorable weather this year combined with mild weather last year provided a strong boost to earnings, helping offset commercial and industrial sales declines due to the coronavirus pandemic. 2020 Guidance Largely Affirmed. The vast majority of utility companies affirmed full-year 2020 EPS guidance during the 2Q20 earnings call, citing cost-cutting initiatives, rate base growth and favorable weather as counterweights to pandemic-related declines in retail sales.[5]

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

A. KPC's current credit ratings are Baa3 from Moody's and A- from Standard and Poor's ("S&P"). The ratings outlook from both agencies is stable.

S&P noted the following credit strengths in its April 8, 2020 credit report on KPC[6]:

- Lower-risk vertically integrated regulated electric utility.
- Credit-supportive and constructive regulatory framework in Kentucky.
- Balanced capital structure supports overall credit quality.

With respect to the Commission's credit-supportive framework, S&P pointed to timely recovery of capital expenditures as well as the Company's fuel cost adjustment mechanism.

Key risks cited by S&P were:

- Limited geographic diversity and small customer base.
- Coal-fired generation increases environmental compliance exposure.

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[5] https://www.fitchratings.com/research/corporate-finance/us-utilities-residential-sales-favorable-weather-offset-coronavirus-slowdown-second-quarter-2020-earnings-wrap-up-03-09-2020

[6] The S&P and Moody's reports referred to in this section were provided by KPC in response to the Office of the Attorney General & KIUC's First Set of Data Requests dated August 12, 2020, Item No. 79.

- Customer concentration, with industrial customers contributing about one-half of energy sales.

Moody's April 14, 2020 Credit Opinion cited a "reasonable regulatory relationship" and KPC's position as part of the American Electric Power ("AEP") system as credit strengths. Credit challenges cited by Moody's are:

- 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.

Q. Has KPC's parent company, American Electric Power ("AEP") provided investors with recent guidance regarding its expected earnings growth and total return?

A. Yes. AEP recently provided its *UBS Roadshow* presentation dated September 17, 2020 on its web site. This presentation touted AEP's "strong profile" consisting of investment pipeline, incentive compensation tied to earnings per share, steady growth, consistent dividends, and low risk regulated assets. AEP provided its expectation of total expected investor returns in the range of 8% - 10% based on a dividend yield of approximately 3% and earnings per share growth of 5% - 7%. Please refer to Exhibit No. ___(RAB-2) for relevant excerpts from this presentation.

Q. Based on your review of the financial markets and the electric utility industry's credit fundamentals to date, what are your observations with respect to estimating the cost of equity for KPC in this case?

A. The current economic environment holds some challenges for estimating the ROE using the DCF, CAPM, and risk premium models. With respect to the DCF, the

decline in utility stock prices since February 2020 significantly raised the dividend yield portion of the DCF, suggesting higher required ROEs on the part of investors. Alternatively, falling Treasury and utility bond yields would tend to lower the CAPM and risk premium models results, other things being equal. Increased stock market volatility is also a factor for stock prices in the DCF model as well as the CAPM, as I will show in the next section. All things considered, it is still my view that the DCF will provide the Commission more accurate results than the CAPM and can be relied upon to estimate the investor required ROE for KPC.

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 a Discounted Cash Flow ("DCF") analysis using a proxy group of regulated electric utilities. My DCF analysis is my 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 both historical and forward-looking data. Although I did not rely on the CAPM for my recommended ROE range of 8.93% - 9.25% for KPC, the CAPM provides an alternative approach to estimating the ROE for KPC, albeit a less reliable one.

In Section II of my Direct Testimony, I described the unusual circumstances surrounding the financial markets caused by the COVID-19 pandemic. In the Recommendation portion of this Section (Section III), I will offer my observations on how these highly unusual circumstances may be affecting the DCF and CAPM and will also offer my conclusions and recommendations to the Commission as to how to take these circumstances into account in setting the allowed ROE for KPC in this proceeding.

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 comparison 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 chose to rely on the proxy group 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 38 of his Direct Testimony. These criteria are:

- Companies included in the Electric Utility Industry groups compiled by Value Line.
- Electric utilities that paid common dividends over the last six months and have not announced a dividend cut since that time.
- No ongoing involvement in a major merger or acquisition that would distort quantitative results.
- Credit rating screens of BBB+ to A from S&P and Baa3 to Baa1 from Moody's.

The constituent members of Mr. McKenzie's proxy group comprise a reasonable basis for purposes of estimating the ROE for the Company. I updated the credit ratings of Mr. McKenzie's proxy group and found that all the companies had the same S&P credit ratings, while two companies had lower Moody's credit ratings (American Electric Power and Sempra Energy). Although these companies had lower credit ratings, they were still within the credit rating band used by Mr. McKenzie. In updating the proxy group, I also eliminated the following companies:

- Dominion Resources: Dominion Resources announced an expected dividend cut for its 2020 4th quarter dividend. This expected cut was also mentioned in the most recent Value Line report for Dominion. I note that this announcement came after Mr. McKenzie filed his Direct Testimony in this case.
- PPL Corp.: On August 10, 2020 PPL Corp. announced its intention to divest itself of its electric operations in the United Kingdom. PPL Corp. derives significant earnings from its U.K. operations ($1.40 of $2.45 total earnings per share in 2019). Given this significant potential change in PPL's operations, it is prudent to exclude this company from the proxy group.

The resulting comparison group of 21 companies that I used in my analysis is shown in the Table 1 below.

TABLE 1
Credit Ratings
Proxy Group and Kentucky Power

	S&P	Moody's
Alliant Energy Corporation	A-	Baa2
Ameren Corp.	BBB+	Baa1
American Electric Power Co.	A-	Baa2
Avangrid, Inc.	BBB+	Baa1
Black Hills Corp.	BBB+	Baa2
CMS Energy Corporation	BBB+	Baa1
Consolidated Edison	A-	Baa2
DTE Energy Company	BBB+	Baa2
Duke Energy Corp.	A-	Baa1
Entergy Corp.	BBB+	Baa2
Evergy Inc.	A-	Baa2
Eversource Energy	A-	Baa1
Exelon Corp.	BBB+	Baa2
Fortis, Inc.	A-	Baa3
NextEra Energy	A-	Baa1
OGE Energy	BBB+	Baa1
Public Service Enterprise Group	BBB+	Baa1
Sempra Energy	BBB+	Baa2
Southern Company	A-	Baa2
WEC Energy Group	A-	Baa1
Xcel Energy Inc.	A-	Baa1
Kentucky Power	A-	Baa3

Ratings retrieved Sept. 16, 2020

Q. What was your first step in determining the DCF return on equity for the comparison 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 April through September 2020. I obtained historical prices and dividends from Yahoo! Finance. The annualized dividend divided by the average monthly price represents the average dividend yield for each month in the period.

The resulting average dividend yield for the comparison group is 3.52%. These calculations are shown in Exhibit No. ___(RAB-3). Note that the monthly average

dividend yield declined from 3.64% in May to 3.52% in September, with a six-month average of 3.52%.

Q. Having established the average dividend yield, how did you determine the investors' expected growth rate for the electric comparison 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 IBES. 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 No. ___(RAB-4) 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 Exelon Corp. 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.

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 No. ___(RAB-4) 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 3.52% 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 in the upper section of Exhibit No. ___(RAB-4) 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 8.75% to 9.05%, with the average of these results being 8.93%. For Method 2 (median growth rates), the results range from 8.61% to 9.63%, with the average of these results being 9.25%.

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. The general level of risk aversion in the economy determines the market risk premium. 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 market risk premium. 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 return on equity?

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. Beta coefficients usually describe only a small amount of total investment risk. 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.[7]

Pratt and Grabowski also stated the following with respect to the CAPM:[8]

> 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 reliable measure of risk.

As a practical matter, there is substantial judgment involved in estimating the required market return and market risk premium. 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

[7] *A Random Walk Down Wall Street*, Burton G. Malkiel, page 218, 2019 edition.

[8] *Cost of Capital*, Shannon Pratt and Roger Grabowski, 5th Edition, page 288, published by Wiley.

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 estimate faces significant limitations to its estimation and, ultimately, its usefulness in quantifying the investor required 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 past 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 difficulty in obtaining a reliable estimate from the CAPM.

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

A. I used two approaches to estimate the market risk premium portion of the CAPM equation. One approach uses the expected return on the market and is forward-looking. The other approach employs an historical risk premium based on actual stock and bond returns from 1926 through 2019.

Q. Please describe your forward-looking approach to estimating the market risk premium.

A. The first source I used was the Value Line Investment Analyzer Plus Edition, for September 18, 2020. The Value Line Investment Analyzer provides a summary statistical report detailing, among other things, forecasted growth rates for earnings

and book value for the companies Value Line follows as well as the projected total annual return over the next 3 to 5 years. I present these growth rates and Value Line's projected annual returns on page 2 of Exhibit No. ___(RAB-5). I included median earnings and book value growth rates. The estimated market returns using Value Line's market data range from 8.91% to 13.18%. The average of these market returns is 11.05%.

Q. Why did you use median growth rate estimates rather than the average growth rate estimates for the Value Line companies?

A. Using median growth rates is likely a more accurate approach to estimating the central tendency of Value Line's large data set compared to the average growth rates. Average earnings and book value growth rates may be unduly influenced by very high or very low 3–5-year growth rates that are unsustainable in the long run. For example, Value Line's Statistical Summary shows both the highest and lowest value for earnings and book value growth forecasts. For earnings growth, Value Line showed the highest earnings growth forecast to be 95% and the lowest growth rate to be -20%. With respect to book value, the highest growth rate was 82% and the lowest was a -32.5%. None of these growth rate projections is compatible with long-run growth prospects for the market as a whole. The median growth rate is not influenced by such extremes because it represents the middle value of a very wide range of earnings growth rates.

Q. Please continue with your market return analysis.

A. I also considered a supplemental check to the Value Line projected market return estimates. Duff and Phelps compiled a study of historical returns on the stock market in its *2020 Valuation Handbook - U.S. Guide to Cost of Capital*, which is now part of

its Cost of Capital Navigator subscription service. Some analysts employ this historical data to estimate the market risk premium 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 No. ___(RAB-6) presents the calculation of the market returns and market risk premiums using the historical data from Duff and Phelps.

Q. Please explain how this historical risk premium is calculated.

A. Exhibit No. ___(RAB-6) shows the arithmetic average of yearly historical stock market returns over the historical period from 1926 – 2019. The average annual income return for 20-year Treasury bond is subtracted from these historical stock returns to obtain the historical market risk premium of stock returns over long-term Treasury bond income returns. The resulting historical market risk premium is 7.2%.

Q. Did you add an additional measure of the historical risk premium in this case?

A. Yes. Duff and Phelps 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.[9] Duff and Phelps 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 market risk premium is 6.14%, which I have also included in Exhibit No. ___(RAB-6).

[9] *2019 Cost of Capital: Annual U.S. Guidance and Examples,* Duff and Phelps, Cost of Capital Navigator, Chapter 3, pp. 45 - 47.

Q. How did you determine the risk free rate?

A. I used two different measures for the risk-free rate. The first measure is the average 30-year Treasury Bond yield for the six-month period from March through August 2020. This represents a current measure of the risk-free rate based on actual current Treasury yields, which is 1.38%.

The second measure comes from Duff and Phelps' most recent "normalized" risk-free rate of June 30, 2020.[10] Duff and Phelps developed this normalized risk-free rate using its measure of the "real risk free rate" and expected inflation. The Duff and Phelps normalized risk-free rate is 2.5%. I note that this updated normalized risk-free rate was lowered from 3.0%, which was in effect prior to June 30, 2020.

Q. Please summarize your calculated market risk premium estimates with the forward-looking data from Value Line and the historical Duff and Phelps equity risk premiums.

A. My market risk premiums from Exhibit Nos. ___(RAB-5) and (RAB-6) are as follows:

- Forward-looking risk premiums 8.55% - 9.67%
- Historical risk premium 6.14% - 7.20%

By way of comparison, Duff and Phelps currently recommends an equity risk premium of 6.0%, which resulted in a base U.S. cost of capital estimate of 8.5%. Based on this comparison, my range of equity risk premium estimates are certainly not overly conservative or understated.

[10] https://www.duffandphelps.com/insights/publications/cost-of-capital/us-normalized-risk-free-rate-lowered-june-30-2020

Q. How did you determine the value for beta?

A. I obtained the betas for the companies in the proxy group from most recent Value Line reports. The average of the Value Line betas for the proxy group is 0.87.

Q. Mr. Baudino, have the Value Line betas for regulated utility companies increased since Mr. McKenzie filed his Direct Testimony?

A. Yes, the betas for the companies in the proxy group have all increased substantially. Please refer to Table 2 below, which presents a comparison of betas from Mr. McKenzie's testimony and the betas I used in my Exhibit No. ___(RAB-5).

TABLE 2
PROXY GROUP BETA COMPARISON

	McKenzie Testimony	Baudino Testimony	Pct. Change
Alliant Energy Corporation	0.55	0.85	55%
Ameren Corp.	0.50	0.80	60%
American Electric Power Co.	0.50	0.75	50%
Avangrid, Inc.	0.40	0.80	100%
Black Hills Corp.	0.65	1.00	54%
CMS Energy Corporation	0.50	0.80	60%
Consolidated Edison	0.40	0.75	88%
DTE Energy Company	0.50	0.90	80%
Duke Energy Corp.	0.45	0.85	89%
Entergy Corp.	0.60	0.95	58%
Evergy Inc.	N/A	1.00	N/A
Eversource Energy	0.55	0.90	64%
Exelon Corp.	0.65	0.95	46%
Fortis, Inc.	0.60	0.80	33%
NextEra Energy	0.50	0.85	70%
OGE Energy	0.70	1.05	50%
Public Service Enterprise Group	0.60	0.90	50%
Sempra Energy	0.65	0.95	46%
Southern Company	0.50	0.90	80%
WEC Energy Group	0.45	0.80	78%
Xcel Energy Inc.	0.45	0.75	67%
Average	0.54	0.87	63%

Table 2 demonstrates that the betas for the companies in the proxy group increased sharply from earlier in 2020. Indeed, the average for the group increased by 63%. Three companies now have betas at or near 1.0, suggesting that they are now as risky as the overall stock market.

In my view, the sharp increase in betas for the companies in the proxy group was influenced by the extreme market volatility due to the COVID-19 pandemic. It is likely the increases in beta were due to greater volatility in the stock prices for regulated electric utilities relative to the movement of the market in general compared to the prior betas that were used by Mr. McKenzie. The question now is whether investors believe that regulated electric utilities are substantially more risky than they were before the volatile period since March 2020. I believe the sharp increase in betas could be a short-term phenomenon and, as such, I would not advise placing significant reliance on current betas at this time. Prior history of lower utility betas suggests caution with respect to their current betas. I believe it is highly unlikely that a 63% increase in expected betas for electric utilities since earlier in the year is accurate and reliable or is necessarily reflective of investor expectations over the longer term. Moreover, the increase in the average beta factor for the proxy group underscores the shortcomings of the CAPM that I described in detail earlier in my Direct Testimony.

Q. Please summarize the CAPM results.

A. For my forward-looking CAPM return on equity estimates, the CAPM results range from 9.80% to 9.95%. Using historical risk premiums, the CAPM results range from 6.73% to 8.77%.

Conclusions and Recommendations

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

A. Table 3 below summarizes my return on equity results using the DCF and CAPM for my comparison group of companies.

TABLE 3
SUMMARY OF ROE ESTIMATES

DCF Methodology	
Average Growth Rates	
- High	9.05%
- Low	8.75%
- Average	8.93%
Median Growth Rates:	
- High	9.63%
- Low	8.61%
- Average	9.25%
CAPM Methodology	
Forward-lookng Market Return:	
- Current 30-Year Treasury	9.80%
- D&P Normalized Risk-free Rate	9.95%
Historical Risk Premium:	
- Current 30-Year Treasury	6.73% - 7.65%
- D&P Normalized Risk-free Rate	7.85% - 8.77%

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

A. I recommend that the KPSC adopt a ROE range of 8.93% - 9.25% for KPC. My recommendation is consistent with the DCF results and falls within the range of my CAPM results as well. As can be seen in Exhibit No. ___(RAB-3), the monthly dividend yields for the proxy group have been relatively stable since May of 2020, ranging from 3.42% in August to 3.64% in May. The six-month average dividend yield of 3.52% is reasonably representative of current investor expectations in the current environment. As I demonstrated in my Figure 1, stock market volatility has substantially decreased from March and April of this year, although is still elevated from the beginning of 2020. All of this provides additional support for relying on the DCF model's results in this case. In addition, current interest rates are low and the long-term utility bond yield has fallen substantially from January 2020. This does not support a significant increase in the ROE from pre-pandemic levels.

Finally, the ROE range of 8.93% -9.25% is consistent with AEP's September 17, 2020 UBS Roadshow presentation of forecasted expected shareholder returns in the range of 8% - 10%.

Mr. Kollen will provide his AG/KIUC recommended ROE of 9.0% based on my recommended ROE range as well as other important regulatory policy considerations in this case.

Q. Do you agree with KPC's requested capital structure?

A. I agree with the Company's requested common equity ratio of 43.25%. Mr. Kollen addresses the inclusion of short-term debt in the Company's capital structure.

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 10.3% return on equity is overstated and inconsistent with the current financial market evidence and the low interest rate environment I have described earlier in my Direct Testimony. As I shall demonstrate later in this section of my testimony, Mr. McKenzie made judgments that served to inflate his ROE results, particularly for the DCF and CAPM.

Considerations for Current Capital Markets and KPC's ROE

Q. Before you address the specifics of Mr. McKenzie's ROE analyses, please address certain conclusions he made on page 9 of his Direct Testimony.

A. Mr. McKenzie made the following statement on page 9, lines 18 through 22 of his Direct Testimony:

> The threat posed by the global pandemic has clearly led to a fundamental reevaluation of risks and required returns, including for utility common stocks, but the high degree of uncertainty, extreme short-term volatility, and lack of consistent data greatly complicates any ability to account for this heightened risk through the application of standard market based methods (e.g., DCF, CAPM) at this time.

I agree with Mr. McKenzie's statement to an extent. Utility stock prices have certainly been revalued since February 2020 and have been quite volatile, like the stock market has been as I described earlier in my testimony. It also appears that increased betas for electric utility stocks may point to increased risk for this sector relative to the stock market as a whole, although this short-term shift should be viewed with some caution

given the extreme volatility earlier this year that both Mr. McKenzie and I have described.

Utility stock prices have also recovered significantly since March 2020, as has the stock market generally. Exhibit No. ___(RAB-3) shows a decline in the proxy group dividend yield from May through September, which underscores that recovery. As I pointed out in Section II, although stock market volatility has subsided since March 2020, it is still higher than January and February of 2020 and higher than in 2019. In this regard, it is prudent to use a six-month average dividend yield for purposes of estimating the DCF ROE in this case, as this period assists in smoothing out the month-to-month volatility.

Having said this, I certainly agree with Mr. McKenzie that uncertainty and associated risk is greater now than it was prior to March 2020. Nevertheless, prudent and reasonable efforts can still be made to estimate the investor required ROE for a low risk regulated electric utility like KPC. Based on the data I reviewed and relied upon, I still recommend the DCF as the superior model to the CAPM.

Q. On page 10, Mr. McKenzie stated that "[u]nprecedented Federal Reserve monetary policies have placed downward pressure on interest rates, and emphasized the need to consider the impact of projected bond yields in evaluating the results of quantitative methods." Please address this statement.

A. I would agree that current monetary policy is unprecedented. However, one should not abandon current interest rates altogether, as they represent current investor risk/return requirements for debt instruments, including Treasury and utility debt. Indeed, after increasing sharply in March, utility bond yields have declined

significantly as I reported in Section II. This indicates a lower cost of capital for utility debt. Also, a falling cost of utility debt directly translates into a lower risk premium ROE using Mr. McKenzie's risk premium analysis. I will address this in more detail later in this section.

Q. On page 34 of his Direct Testimony, Mr. McKenzie presented Table AMM-3, which contains average forecasted interest rates for the 2021 - 2025 time period. Please address this data contained in this table.

A. I continue to oppose the use of forecasts of long-term interest rates to measure the ROE using the CAPM and risk premium models. These forecasts are often overstated and should not be given preference over current interest rates. In addition, one of the sources Mr. McKenzie used for his forecasted interest rates in this table is the Value Line Investment Survey, Forecast for the U.S. Economy dated February 28, 2020. This forecast was updated by Value Line in its August 28, 2020 Selection and Opinion publication. For the 2021 - 2024 time period, Value Line now forecasts the following:

- 10-Year Treasury Note: 0.8% - 1.5%.
- Long-term Treasury Bond rate: 1.5% - 2.5%.

Table AMM-3 shows forecasted yields for the 10-Year and 30-Year Treasuries of 2.93% and 3.25%, respectively. Obviously, Value Line's updated forecasts no longer support the numbers in Table AMM-3.

Q. Considering the additional risks described by Mr. McKenzie, how does his recommended ROE in this case compare to his recommended ROE in KPC's last rate case, Case No. 2017-00179?

A. Mr. McKenzie's ROE recommendation in Case No. 2017-00179 was 10.31%, virtually identical to his recommended 10.30% in this case.

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. I agreed with his selection of companies except for Dominion Resources and PPL Corp. 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-4, 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 1.8% to 6.5%. Mr. McKenzie did not exclude any ROE results that were too high and saw fit to include ROE results ranging from 12.0% to 13.6%. After making these exclusions, his resulting DCF range was 8.6% to 9.7% using an average of the remaining results. The midpoints ranged from 8.7% to 10.2%.

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 failed to exclude other results that are excessively high. For example, the average Commission-allowed ROE for 2019 that was reported by Mr. McKenzie in his Exhibit AMM-8, page 3 of 4, was 9.65%. However, Mr. McKenzie included ROEs in his Exhibit AMM-4 that are 235 - 395 basis points higher than 9.65%. My review of Commission allowed returns contained in Mr. McKenzie's Exhibit AMM-8 reveals

that 2002 was the last year that allowed returns on equity were as high as 11% and that the last Commission allowed return near 13% was in 1989.

It is abundantly clear that Mr. McKenzie's approach to excluding ROE results from his DCF analysis had the effect of inflating his DCF ROE recommendation.

Q. Have you conducted an alternative analysis that includes all the DCF results from Mr. McKenzie's Exhibit AMM-4?

A. Yes. Table 5 below presents the average and median ROEs utilizing all the DCF results from Mr. McKenzie's Exhibit AMM-4, page 3 of 4.

TABLE 5
McKenzie ROE Results

Company	V Line	IBES	Zacks	br+sv Growth
Alliant Energy	9.6%	8.8%	8.6%	7.4%
Ameren Corp.	8.8%	9.3%	9.5%	9.0%
American Elec Pwr	8.6%	9.6%	9.3%	8.3%
Avangrid, Inc.	12.6%	10.4%	9.4%	5.6%
Black Hills Corp.	7.0%	9.3%	9.4%	7.3%
CMS Energy Corp.	10.4%	10.2%	9.8%	9.9%
Consolidated Edison	6.8%	6.2%	5.8%	7.0%
Dominion Energy	12.0%	9.9%	9.7%	9.6%
DTE Energy Co.	9.3%	10.2%	9.8%	9.3%
Duke Energy Corp.	10.6%	8.8%	9.3%	7.7%
Entergy Corp.	7.0%	10.0%	9.9%	9.1%
Evergy Inc.	n/a	7.5%	8.6%	6.5%
Eversource Energy	8.3%	8.5%	8.9%	7.6%
Exelon Corp.	12.2%	1.8%	8.2%	8.8%
Fortis Inc.	7.8%	10.4%	11.3%	6.8%
NextEra Energy, Inc.	12.4%	10.2%	10.2%	7.6%
OGE Energy Corp.	9.8%	7.0%	8.7%	8.7%
PPL Corp.	9.3%	7.3%	n/a	12.3%
Pub Sv Enterprise Grp.	10.1%	6.4%	7.5%	9.1%
Sempra Energy	13.6%	7.8%	10.4%	11.0%
Southern Company	8.7%	9.0%	8.7%	8.9%
WEC Energy Group	8.8%	8.8%	8.8%	7.0%
Xcel Energy Inc.	8.8%	8.2%	8.6%	7.8%
Average	9.7%	8.5%	9.1%	8.4%
Median	9.3%	8.8%	9.3%	8.3%

Rather than arbitrarily excluding low-end results and keeping implausibly high results, I recommend that the median be used as an alternative measure of central tendency. As I testified in Section III, 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.

Table 5 shows that when all results are considered, the average and median results from Mr. McKenzie's Exhibit AMM-5 are closer to my DCF results.

Q. Mr. McKenzie applied a low-end threshold adjustment based on Orders from the Federal Energy Regulatory Commission ("FERC") as well as a risk premium adjustment that purports to incorporate lower current bond yields. Should the Commission adopt this adjustment?

A. No. Selectively eliminating so-called low-end DCF results without any consideration of also eliminating implausibly high results will lead to an outcome that is biased and overstated. I strongly recommend that the Commission reject Mr. McKenzie's approach.

CAPM and ECAPM

Q. Beginning on page 64 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 page 65 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 62, lines 13 through 15 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. If one limits the market return to stocks, then there are more comprehensive measures of the stock market available, such as the Value Line Investment Survey that I used in my CAPM analysis. Value Line's projected earnings growth used a sample of 1,738 stocks and its book value growth estimate used 1,486 stocks. Value Line's projected annual

percentage return included 1,653 stocks. These are much broader samples than Mr. McKenzie's limited sample of dividend paying stocks from the S&P 500.

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

A. Yes. My forward-looking market returns show an expected return on the market of 11.05%, far less than the 12.5% expected return result for the limited sample of companies Mr. McKenzie used for his ECAPM and CAPM market return. I acknowledge that Mr. McKenzie's expected market return does fall within the range of market returns I used in my analysis.

Q. Beginning on page 62 of his Direct Testimony, Mr. McKenzie explained that he incorporated a size adjustment to his CAPM and ECAPM results. This increased his average CAPM results by about 26 basis points, or 0.26%. Is this size adjustment appropriate?

A. No. The data that Mr. McKenzie relied upon to make this adjustment came from the 2020 Decile Size Study - Supplementary Data Exhibits, Cost of Capital Navigator published by Duff and Phelps. The groups of companies from which he took this significant upward adjustment to his CAPM and ECAPM results contain many unregulated companies. Further, the decile groups from which these adjustments were taken had average betas ranging from 0.92 to 1.17[11]. These betas are greater than my utility proxy group average beta of 0.87, indicating that the unregulated companies that Mr. McKenzie used to make his size adjustment are riskier than regulated utilities. There is no evidence to suggest that the size premium used by Mr. McKenzie applies

[11] Duff and Phelps, 2020 *CRSP Deciles Size Study - Supplementary Data Exhibits*, Cost of Capital Navigator.

to regulated utility companies, which on average are quite different from the group of companies included in the Duff and Phelps research on size premiums. I recommend that the Commission reject Mr. McKenzie's size premium in the CAPM and ECAPM ROE.

Q. On page 64 of his Direct Testimony, Mr. McKenzie recommended using projected bond yields in the CAPM ROE models. Should the Commission use forecasted bond yields in its ROE analysis in this proceeding?

A. No. Current interest rates and bond yields embody all the relevant market data and expectations of investors, including expectations of changing future interest rates, in any. Current interest rates present tangible market evidence of investor return requirements today, and these are the interest rates and bond yields that should be used in the CAPM, ECAPM, and in the bond yield plus risk premium analyses.

As Dr. Roger Morin pointed out in *New Regulatory Finance:*

> A considerable body of empirical evidence indicates that U.S. capital markets are efficient with respect to a broad set of information, including historical and publicly available information.[12]

Dr. Morin also noted the following:

> There is extensive literature concerning the prediction of interest rates. From this evidence, it appears that the no-change model of interest rates frequently provides the most accurate forecasts of future interest rates while at other times, the experts are more accurate. Naïve extrapolations of current interest rates frequently outperform published forecasts. The literature suggests that on balance, the bond market is very efficient in that it is difficult to consistently forecast interest rates with greater accuracy than a no-change model. The latter model provides similar, and in some cases, superior accuracy than

[12] Morin, Roger A., *New Regulatory Finance,* Public Utilities Reports, Inc. (2006) at 279.

professional forecasts.[13]

It is important to realize that investor expectations of changes in future interest rates, if any, are likely already embodied in current securities prices, which include debt securities and stock prices. Moreover, as a practical matter Mr. McKenzie's forecasted 30-Year Treasury Bond yield of 3.2% is so far above current 30-Year Treasury yields that it is highly unlikely investors expect this yield in the near term.

Q. What does a 3.2% forecasted interest rate suggest with regards to investors holding 30-year Treasury bonds currently?

A. It suggests that investors today are expecting to incur huge losses in the value of their investments in long-term Treasury bonds, which makes no economic sense whatsoever.

The price of a bond moves in the opposite direction of its yield. In other words, given a certain current bond coupon and price, if the required yield on that bond increases then the price of the bond goes down. Alternatively, if the required yield declines, then the price of the bond increases. This relationship can be illustrated with the following simplified example. Assume a current 30-year Treasury bond has a coupon of $1.40 and a price of $100, resulting in a current yield of 1.40%. This is the approximate six-month average yield for 30-year Treasury bonds I used in my CAPM analyses. If interest rates were to rise in the economy such that the required yield on the 30-year Treasury increased to 3.2%, then the price of our existing 30-year Treasury

[13] *Id*. at 172.

bond would fall to $43.75 from $100, given the coupon of $1.40. This represents a capital loss to our bond investor of 56.25%.

The point here is that if investors were certain that there would soon be a substantial increase in interest rates, the rational response would be to immediately discount what they were willing to pay currently for the 30-year Treasury bond rather than pay $100 and suffer certain significant losses to the value of their bonds. The fact that the 30-Year Treasury bond is currently yielding about 1.40% suggests that investors do not expect Treasury Bonds yields to drastically increase and, as a result, cause dramatic losses in their investments.

Q. Wouldn't this also be the case with the 2.5% normalized risk-free rate that you used?

A. Yes, to an extent it would be. The Duff and Phelps normalized risk-free rate attempts to capture a risk free rate plus expected inflation and it was my intention to offer this 2.5% rate as an additional source of information for the CAPM calculations. Duff and Phelps actually lowered its normalized risk-free rate this year from 3.0% to 2.5% and it is my view that it offers a superior alternative to the dated 3.2% forecasted 30-Year Treasury yield used by Mr. McKenzie. I also note that the current six-month average 30-Year Treasury yield of 1.40% is much lower than the 1.9% current yield used by Mr. McKenzie in his analyses.

Utility Risk Premium

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

A. Mr. McKenzie developed an historical risk premium using Commission-allowed returns for regulated utility companies from 1974 through 2019. He also used regression analysis to estimate the value of the inverse relationship between interest rates and risk premiums during that period. On page 71 of his Direct Testimony, Mr. McKenzie calculated the risk premium ROE to be 9.60% using the current yield on Baa utility bonds. Using a forecasted utility bond yield of 5.09%, the resulting risk premium ROE was 10.46%.

Q. Please respond to the Company witnesses' 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.

Furthermore, Mr. McKenzie's 10.46% risk premium ROE was inflated by using a forecasted utility bond yield of 5.09%. This bond yield is grossly overstated and exceeds the August 2019 Baa Mergent utility bond yield of 3.06% by 203 basis points, or 2.03%. Looking at this another way, Mr. McKenzie's forecasted 5.09% Baa utility bond yield is 66% higher than the current Baa utility bond yield. I strongly recommend

that the Commission reject this unreasonable forecasted Baa bond yield used by Mr. McKenzie.

Q. What would Mr. McKenzie's risk premium ROE result be using the current 3.06% Baa utility bond yield from Mergent?

A. I calculate that the risk premium ROE using Mr. McKenzie's methodology would be 9.16%. Please refer to Exhibit No. ___(RAB-7) for the supporting calculations.

Expected Earnings Approach

Q. Beginning on page 74 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 electric utilities over its forecast horizon. Is this a reasonable method for estimating the current required return on equity in this proceeding?

A. No. The Commission should not rely on forecasted utility ROEs for the same reasons that it should not rely on interest rate forecasts. These forecasted ROEs have little value in today's market, especially considering that current DCF returns are significantly lower than these forecasts. Recent allowed ROEs for electric utilities averaged 9.60% in 2018 and 9.65% in 2019. EEI also reported in its 2020 2nd Quarter Rate Review that the average allowed ROEs for the 1st and 2nd quarters of 2020 were 9.58% and 9.52%, respectively. Compare these actual allowed ROEs to the "adjusted ROEs" in Mr. McKenzie's expected earnings model, which range from 10.6% to 11.0%. The adjusted expected ROEs presented by Mr. McKenzie are so far removed from recent allowed returns that the Commission should reject them out of hand.

Flotation Costs

Q. Beginning on page 74 of his Direct Testimony, Mr. McKenzie discussed flotation costs. Are flotation costs a legitimate consideration for the Commission's determination of 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.

Non-Utility Benchmark

Q. Beginning of page 79 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. They also have the ability to raise prices in the face of the current COVID-19 pandemic, a luxury that many industries certainly do not have. 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 9.5% - 10.5%. The midpoint results range from 10.6% - 18.8%. These results are substantially greater than the utility proxy group DCF results for both myself and Mr. McKenzie and 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 this recommendation, he stated that it was "an important benchmark in evaluating a fair and reasonable ROE for Kentucky Power." (McKenzie Direct Testimony, page 82, Lines 17 - 19). I disagree. The relevant consideration should be the DCF results for the 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) APPROVAL OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND (5) ALL OTHER REQUIRED APPROVALS AND RELIEF	**)**	**CASE NO. 2020-00174**

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-seven 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.
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
Texas Industrial Energy Consumers

Expert Testimony Appearances
of
Richard A. Baudino
As of October 2020

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 October 2020

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 October 2020

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 October 2020

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 October 2020

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 October 2020

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.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

Expert Testimony Appearances
of
Richard A. Baudino
As of October 2020

Date	Case	Jurisdict.	Party	Utility	Subject
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 HealthCare 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.

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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 Users Group	WV	West Virginia Energy	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
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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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
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

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Date	Case	Jurisdict.	Party	Utility	Subject
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
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

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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
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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Date	Case	Jurisdict.	Party	Utility	Subject
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.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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Date	Case	Jurisdict.	Party	Utility	Subject
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
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

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Date	Case	Jurisdict.	Party	Utility	Subject
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
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

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Date	Case	Jurisdict.	Party	Utility	Subject
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	2020-000174	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Power Co.	Return on equity

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY™

UBS Roadshow

September 17, 2020

Strong Profile for Investors

Incentive Comp Tied to EPS

Investment Pipeline

Steady Growth

TOTAL SHAREHOLDER RETURN

~3%

DIVIDEND YIELD

5%-7% CAGR

5%-7%

EPS GROWTH

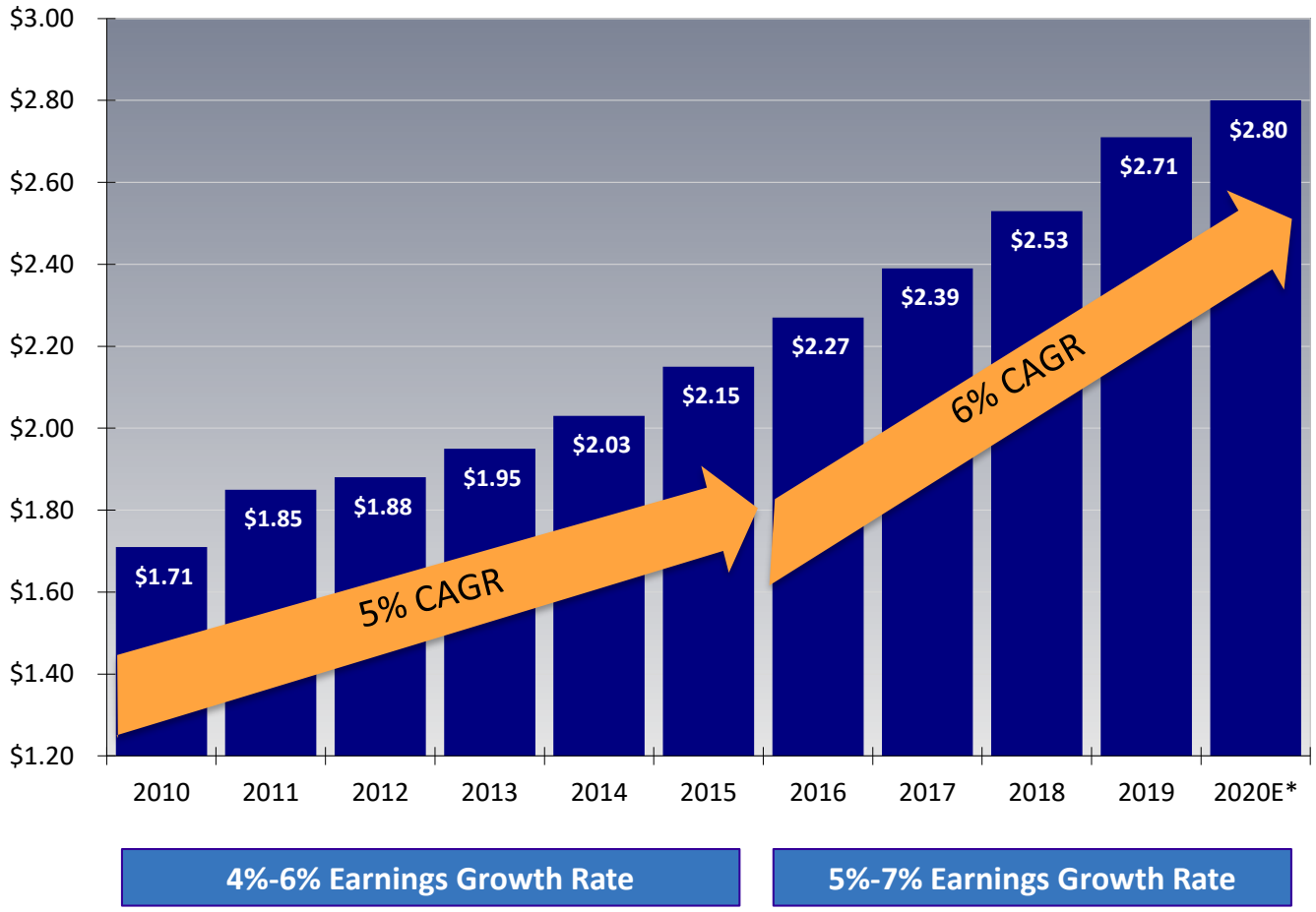
2020 Operating Earnings Guidance
$4.25-$4.45 per share

Consistent Dividends

Low Risk, Regulated Assets

Strong Dividend Growth

- Targeted payout ratio 60-70% of operating earnings
- Over 110 years of consecutive quarterly dividends
- Targeted dividend growth in line with earnings



EPS Growth + Dividend Yield = 8% to 10% Annual Return Opportunity

* Subject to Board approval

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Alliant Energy Corp.	High Price ($)	54.450	49.720	52.470	54.110	55.600	55.150
	Low Price ($)	43.610	44.360	46.150	47.520	52.220	48.890
	Avg. Price ($)	49.030	47.040	49.310	50.815	53.910	52.020
	Dividend ($)	0.380	0.380	0.380	0.380	0.380	0.380
	Mo. Avg. Div.	3.10%	3.23%	3.08%	2.99%	2.82%	2.92%
	6 mos. Avg.	3.02%					
Ameren Corp.	High Price ($)	81.250	75.270	77.420	81.310	83.960	81.180
	Low Price ($)	65.900	66.330	67.140	70.260	77.650	75.270
	Avg. Price ($)	73.575	70.800	72.280	75.785	80.805	78.225
	Dividend ($)	0.495	0.495	0.495	0.495	0.495	0.495
	Mo. Avg. Div.	2.69%	2.80%	2.74%	2.61%	2.45%	2.53%
	6 mos. Avg.	2.64%					
American Electric Power Co.	High Price ($)	88.290	85.850	88.120	89.930	87.150	82.100
	Low Price ($)	71.200	76.230	77.150	79.230	77.320	77.300
	Avg. Price ($)	79.745	81.040	82.635	84.580	82.235	79.700
	Dividend ($)	0.700	0.700	0.700	0.700	0.700	0.700
	Mo. Avg. Div.	3.51%	3.46%	3.39%	3.31%	3.40%	3.51%
	6 mos. Avg.	3.43%					
Avangrid, Inc.	High Price ($)	46.830	44.610	47.080	50.315	50.470	50.810
	Low Price ($)	39.720	38.780	40.650	41.580	47.840	47.133
	Avg. Price ($)	43.275	41.695	43.865	45.948	49.155	48.972
	Dividend ($)	0.440	0.440	0.440	0.440	0.440	0.440
	Mo. Avg. Div.	4.07%	4.22%	4.01%	3.83%	3.58%	3.59%
	6 mos. Avg.	3.88%					
Black Hills Corp.	High Price ($)	70.800	62.370	63.420	62.680	61.290	57.330
	Low Price ($)	57.470	53.730	52.360	55.460	54.160	51.970
	Avg. Price ($)	64.135	58.050	57.890	59.070	57.725	54.650
	Dividend ($)	0.535	0.535	0.535	0.535	0.535	0.535
	Mo. Avg. Div.	3.34%	3.69%	3.70%	3.62%	3.71%	3.92%
	6 mos. Avg.	3.66%					
CMS Energy Corp.	High Price ($)	64.080	58.960	61.190	64.750	64.780	62.810
	Low Price ($)	53.960	52.350	55.800	57.660	58.940	58.630
	Avg. Price ($)	59.020	55.655	58.495	61.205	61.860	60.720
	Dividend ($)	0.408	0.408	0.408	0.408	0.408	0.408
	Mo. Avg. Div.	2.76%	2.93%	2.79%	2.66%	2.63%	2.68%
	6 mos. Avg.	2.74%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Consolidated Edison	High Price ($)	90.000	78.570	78.170	77.650	76.690	78.060
	Low Price ($)	75.250	69.160	69.810	70.010	70.100	69.300
	Avg. Price ($)	82.625	73.865	73.990	73.830	73.395	73.680
	Dividend ($)	0.765	0.765	0.765	0.765	0.765	0.765
	Mo. Avg. Div.	3.70%	4.14%	4.14%	4.14%	4.17%	4.15%
	6 mos. Avg.	4.07%					
DTE Energy	High Price ($)	113.300	108.730	117.910	116.480	121.470	121.900
	Low Price ($)	85.530	92.390	102.190	104.200	113.320	109.650
	Avg. Price ($)	99.415	100.560	110.050	110.340	117.395	115.775
	Dividend ($)	1.013	1.013	1.013	1.013	1.013	1.013
	Mo. Avg. Div.	4.07%	4.03%	3.68%	3.67%	3.45%	3.50%
	6 mos. Avg.	3.73%					
Duke Energy Corp.	High Price ($)	93.000	86.370	92.200	85.050	87.210	89.490
	Low Price ($)	75.580	79.720	77.580	79.110	78.950	78.970
	Avg. Price ($)	84.290	83.045	84.890	82.080	83.080	84.230
	Dividend ($)	0.945	0.945	0.945	0.945	0.965	0.965
	Mo. Avg. Div.	4.48%	4.55%	4.45%	4.61%	4.65%	4.58%
	6 mos. Avg.	4.55%					
Entergy Corp.	High Price ($)	107.220	103.380	106.480	105.410	106.550	101.500
	Low Price ($)	82.810	90.990	91.040	93.740	95.560	93.290
	Avg. Price ($)	95.015	97.185	98.760	99.575	101.055	97.395
	Dividend ($)	0.930	0.930	0.930	0.930	0.930	0.930
	Mo. Avg. Div.	3.92%	3.83%	3.77%	3.74%	3.68%	3.82%
	6 mos. Avg.	3.79%					
Evergy, Inc.	High Price ($)	64.700	62.680	65.400	65.430	65.390	53.790
	Low Price ($)	50.640	54.000	57.600	59.200	49.810	48.610
	Avg. Price ($)	57.670	58.340	61.500	62.315	57.600	51.200
	Dividend ($)	0.505	0.505	0.505	0.505	0.505	0.505
	Mo. Avg. Div.	3.50%	3.46%	3.28%	3.24%	3.51%	3.95%
	6 mos. Avg.	3.49%					
Eversource Energy	High Price ($)	93.500	84.190	88.270	91.960	90.910	87.960
	Low Price ($)	74.400	73.610	81.160	82.420	83.040	77.000
	Avg. Price ($)	83.950	78.900	84.715	87.190	86.975	82.480
	Dividend ($)	0.568	0.568	0.568	0.568	0.568	0.568
	Mo. Avg. Div.	2.70%	2.88%	2.68%	2.60%	2.61%	2.75%
	6 mos. Avg.	2.70%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Exelon Corp.	High Price ($)	39.830	38.710	41.960	39.520	39.290	38.350
	Low Price ($)	32.390	34.440	34.490	35.890	35.970	33.970
	Avg. Price ($)	36.110	36.575	38.225	37.705	37.630	36.160
	Dividend ($)	0.383	0.383	0.383	0.383	0.383	0.383
	Mo. Avg. Div.	4.24%	4.18%	4.00%	4.06%	4.07%	4.23%
	6 mos. Avg.	4.13%					
Fortis Inc.	High Price ($)	56.460	54.870	54.630	54.890	55.250	55.000
	Low Price ($)	50.210	49.870	50.060	50.950	51.940	51.300
	Avg. Price ($)	53.335	52.370	52.345	52.920	53.595	53.150
	Dividend ($)	0.478	0.478	0.478	0.478	0.478	0.478
	Mo. Avg. Div.	3.58%	3.65%	3.65%	3.61%	3.56%	3.59%
	6 mos. Avg.	3.61%					
NextEra Energy, Inc.	High Price ($)	250.870	256.510	262.260	285.630	289.410	299.300
	Low Price ($)	213.040	222.620	233.760	238.310	276.430	267.140
	Avg. Price ($)	231.955	239.565	248.010	261.970	282.920	283.220
	Dividend ($)	1.400	1.400	1.400	1.400	1.400	1.400
	Mo. Avg. Div.	2.41%	2.34%	2.26%	2.14%	1.98%	1.98%
	6 mos. Avg.	2.18%					
OGE Energy Corp.	High Price ($)	33.770	32.940	34.910	33.540	34.100	32.670
	Low Price ($)	26.370	27.960	29.220	29.440	31.090	28.250
	Avg. Price ($)	30.070	30.450	32.065	31.490	32.595	30.460
	Dividend ($)	0.388	0.388	0.388	0.388	0.388	0.388
	Mo. Avg. Div.	5.15%	5.09%	4.83%	4.92%	4.76%	5.09%
	6 mos. Avg.	4.97%					
Public Service Enterprise Gp.	High Price ($)	54.870	51.330	55.730	56.130	56.230	55.400
	Low Price ($)	41.630	43.870	46.700	48.940	51.560	50.320
	Avg. Price ($)	48.250	47.600	51.215	52.535	53.895	52.860
	Dividend ($)	0.490	0.490	0.490	0.490	0.490	0.490
	Mo. Avg. Div.	4.06%	4.12%	3.83%	3.73%	3.64%	3.71%
	6 mos. Avg.	3.85%					
Sempra Energy	High Price ($)	133.140	128.520	136.080	129.180	135.120	125.900
	Low Price ($)	101.180	114.330	112.160	114.150	121.980	112.330
	Avg. Price ($)	117.160	121.425	124.120	121.665	128.550	119.115
	Dividend ($)	1.045	1.045	1.045	1.045	1.045	1.045
	Mo. Avg. Div.	3.57%	3.44%	3.37%	3.44%	3.25%	3.51%
	6 mos. Avg.	3.43%					

PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Southern Company	High Price ($)	61.860	57.710	60.470	56.300	55.390	54.700
	Low Price ($)	49.260	51.990	50.400	51.420	51.460	51.220
	Avg. Price ($)	55.560	54.850	55.435	53.860	53.425	52.960
	Dividend ($)	0.620	0.640	0.640	0.640	0.640	0.640
	Mo. Avg. Div.	4.46%	4.67%	4.62%	4.75%	4.79%	4.83%
	6 mos. Avg.	4.69%					
WEC Energy Group, Inc.	High Price ($)	101.000	91.960	95.820	95.750	96.130	100.430
	Low Price ($)	80.560	81.490	83.840	86.110	90.640	92.700
	Avg. Price ($)	90.780	86.725	89.830	90.930	93.385	96.565
	Dividend ($)	0.633	0.633	0.633	0.633	0.633	0.633
	Mo. Avg. Div.	2.79%	2.92%	2.82%	2.78%	2.71%	2.62%
	6 mos. Avg.	2.77%					
Xcel Energy	High Price ($)	67.440	65.310	67.540	69.550	73.000	72.430
	Low Price ($)	56.960	56.070	61.580	62.140	67.610	65.690
	Avg. Price ($)	62.200	60.690	64.560	65.845	70.305	69.060
	Dividend ($)	0.430	0.430	0.430	0.430	0.430	0.430
	Mo. Avg. Div.	2.77%	2.83%	2.66%	2.61%	2.45%	2.49%
	6 mos. Avg.	2.64%					
Monthly Avg. Dividend Yield		3.57%	3.64%	3.51%	3.48%	3.42%	3.52%
6-month Avg. Dividend Yield		3.52%					

Source: Yahoo! Finance

PROXY GROUP
DCF Growth Rate Analysis

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Zacks	(4) Yahoo! Finance
Alliant Energy Corporation	7.00%	5.50%	5.50%	5.30%
Ameren Corp.	5.00%	6.00%	6.80%	5.85%
American Electric Power Co.	5.50%	6.00%	5.60%	5.63%
Avangrid, Inc.	0.50%	4.00%	5.00%	4.30%
Black Hills Corp.	6.00%	3.50%	5.80%	4.69%
CMS Energy Corporation	7.00%	7.50%	7.00%	7.08%
Consolidated Edison	3.50%	3.00%	2.00%	2.55%
DTE Energy Company	6.50%	6.00%	5.70%	5.95%
Duke Energy Corp.	2.50%	5.00%	4.30%	2.80%
Entergy Corp.	4.00%	3.00%	5.60%	5.80%
Evergy Inc.	5.50%	4.50%	6.40%	6.80%
Eversource Energy	6.00%	5.50%	6.60%	6.44%
Exelon Corp.	5.50%	5.00%	4.00%	4.00%
Fortis, Inc.	6.00%	2.50%	6.00%	6.00%
NextEra Energy	10.50%	10.00%	8.00%	8.25%
OGE Energy	6.00%	3.00%	3.70%	2.40%
Public Service Enterprise Group	4.00%	5.00%	2.70%	1.20%
Sempra Energy	7.50%	10.00%	7.40%	6.27%
Southern Company	3.00%	3.00%	4.00%	4.55%
WEC Energy Group	6.50%	6.00%	5.90%	5.91%
Xcel Energy Inc.	6.00%	6.00%	5.90%	6.10%
Averages	5.43%	5.24%	5.42%	5.14%
Median	6.00%	5.00%	5.70%	5.80%

Sources: **Value Line Investment Survey, July 24, August 14, and September 11, 2020**
Yahoo! Finance and Zacks growth rates retrieved September 17, 2020
Note: Zacks growth rate was substituted for the Yahoo! Finance growth rates for Exelon Corp., which was negative

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 All Gr. Rates
Method 1:					
Dividend Yield	3.52%	3.52%	3.52%	3.52%	3.52%
Average Growth Rate	5.43%	5.24%	5.42%	5.14%	5.31%
Expected Div. Yield	3.62%	3.62%	3.62%	3.61%	3.62%
DCF Return on Equity	***9.05%***	***8.86%***	***9.04%***	***8.75%***	***8.93%***
Method 2:					
Dividend Yield	3.52%	3.52%	3.52%	3.52%	3.52%
Median Growth Rate	6.00%	5.00%	5.70%	5.80%	5.63%
Expected Div. Yield	3.63%	3.61%	3.62%	3.63%	3.62%
DCF Return on Equity	***9.63%***	***8.61%***	***9.32%***	***9.43%***	***9.25%***

PROXY GROUP
Capital Asset Pricing Model Analysis

30-Year Treasury Bond, Value Line Beta

Line No.		Value Line
1	Market Required Return Estimate	11.05%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	1.38%
4	Risk Premium	
5	(Line 1 minus Line 3)	9.67%
6	Comparison Group Beta	0.87
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	8.43%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	9.80%

Duff and Phelps Normalized Risk-free Rate

1	Market Required Return Estimate	11.05%
2	Duff and Phelps Normalized Risk-free Rate	2.50%
3	Risk Premium	
4	(Line 1 minus Line 2)	8.55%
5	Proxy Group Beta	0.87
6	Proxy Group Beta * Risk Premium	
7	(Line 4 * Line 5)	7.45%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	9.95%

PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	Avg. Yield
March-20	1.46%
April-20	1.27%
May-20	1.38%
June-20	1.49%
July-20	1.31%
August-20	1.36%
6 month average	1.38%

Source: www.federalreserve.gov

Value Line Market Return Data:

Forecasted Data:	
Value Line Median Growth Rates:	
Earnings	9.00%
Book Value	6.50%
Average	7.75%
Average Dividend Yield	1.12%
Estimated Market Return	8.91%
Value Line Projected 3-5 Yr.	
Median Annual Total Return	13.00%
Average Annual Total Return	13.36%
Average	13.18%
Average of Projected Mkt. Returns	11.05%

Source: Value Line Investment Analyzer, accessed Sept. 18, 2020

Comparison Group Betas:

	Value Line
Alliant Energy Corporation	0.85
Ameren Corp.	0.80
American Electric Power Co.	0.75
Avangrid, Inc.	0.80
Black Hills Corp.	1.00
CMS Energy Corporation	0.80
Consolidated Edison	0.75
DTE Energy Company	0.90
Duke Energy Corp.	0.85
Entergy Corp.	0.95
Evergy Inc.	1.00
Eversource Energy	0.90
Exelon Corp.	0.95
Fortis, Inc.	0.80
NextEra Energy	0.85
OGE Energy	1.05
Public Service Enterprise Group	0.90
Sempra Energy	0.95
Southern Company	0.90
WEC Energy Group	0.80
Xcel Energy Inc.	0.75
Average	0.87

Source: Value Line Investment Survey

PROXY GROUP
Capital Asset Pricing Model Analysis
Historic Market Premium

	Arithmetic Mean	Adjusted Arithmetic Mean
CAPM with Current 30-Year Treasury Yield		
Long-Term Annual Return on Stocks	12.10%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	4.90%	
Historical Market Risk Premium	7.20%	6.14%
Proxy Group Beta, Value Line	0.87	0.87
Beta * Market Premium	6.27%	5.35%
Current 30-Year Treasury Bond Yield	1.38%	1.38%
CAPM Cost of Equity, Value Line Beta	**7.65%**	**6.73%**
CAPM with D&P Normalized Risk-Free Rate		
Historical Market Risk Premium	7.20%	6.14%
Proxy Group Beta, Value Line	0.87	0.87
Beta * Market Premium	6.27%	5.35%
D&P Normalized Risk-Free Rate	2.50%	2.50%
CAPM Cost of Equity, Normalized Risk-Free Rate	**8.77%**	**7.85%**

Source: Duff and Phelps Cost of Capital Navigator
2020 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 2, Exhibit 2.3,
2019 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 3, pages 45-47

McKENZIE RISK PREMIUM MODEL

August 2020 Average and Baa Utility Bond Yields

Current Equity Risk Premium		
(a)	Avg. Yield over Study Period	8.10%
(b)	August 2020 Average Utility Bond Yield	2.76%
	Change in Bond Yield	-5.34%
(c)	Risk Premium/Interest Rate Relationship	-0.4324
	Adjustment to Average Risk Premium	2.31%
(a)	Average Risk Premium over Study Period	3.79%
	Adjusted Risk Premium	6.10%
Implied Cost of Equity		
(b)	Baa Utility Bond Yield	3.06%
	Adjusted Equity Risk Premium	6.10%
	Risk Premium Cost of Equity	9.16%

Notes:
(a) Exhibit AMM-8, page 3.
(b) Average and Baa utility bond yield from September 2020 Mergent Bond Record.
(c) Exhibit AMM-8, page 4.

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

Sworn to and subscribed before me on this
7th day of October 2020.

Notary Public

JESSICA K INMAN
NOTARY PUBLIC
MY COMMISSION EXPIRES
JULY 31, 2023
CHEROKEE COUNTY, GEORGIA