COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE	)	
ENERGY KENTUCKY, INC. FOR (1) AN	)	
ADJUSTMENT OF THE ELECTRIC RATES;	)	**CASE NO. 2019-00271**
(2) APPROVAL OF NEW TARIFFS;	)	
(3) APPROVAL OF ACCOUNTING PRACTICES	)	
TO ESTABLISH REGULATORY ASSETS AND	)	
LIABILITIES; AND (4) ALL OTHER REQUIRED	)	
APPROVALS AND RELIEF	)	

DIRECT TESTIMONY

AND EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE

KENTUCKY OFFICE OF THE ATTORNEY GENERAL

J. Kennedy and Associates, Inc.
570 Colonial Park Drive, Suite 305
Roswell, GA 30075

DECEMBER 13, 2019

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DIRECT TESTIMONY OF RICHARD A. BAUDINO

I. QUALIFICATIONS AND SUMMARY

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,

3 Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell,

4 Georgia 30075.

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

6 A. I am a consultant with Kennedy and Associates.

7 **Q. Please describe your education and professional experience.**

8 A. I received my Master of Arts degree with a major in Economics and a minor in

9 Statistics from New Mexico State University in 1982. I also received my Bachelor of

10 Arts Degree with majors in Economics and English from New Mexico State in 1979.

11

12 I began my professional career with the New Mexico Public Service Commission Staff

13 in October 1982 and was employed there as a Utility Economist. During my

14 employment with the Staff, my responsibilities included the analysis of a broad range

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1   of issues in the ratemaking field. Areas in which I testified included cost of service,

2   rate of return, rate design, revenue requirements, analysis of sale/leasebacks of

3   generating plants, utility finance issues, and generating plant phase-ins.

4

5   In October 1989, I joined the utility consulting firm of Kennedy and Associates as a

6   Senior Consultant where my duties and responsibilities covered substantially the same

7   areas as those during my tenure with the New Mexico Public Service Commission

8   Staff. I became Manager in July 1992 and was named Director of Consulting in

9   January 1995. Currently, I am a consultant with Kennedy and Associates.

10

11   Exhibit No. ___(RAB-1) summarizes my expert testimony experience.

12 **Q.**   **On whose behalf are you testifying?**

13 A.   I am testifying on behalf of the Office of the Attorney General of the Commonwealth

14   of Kentucky ("AG").

15 **Q.**   **What is the purpose of your Direct Testimony?**

16 A.   The purpose of my Direct Testimony is to address the allowed return on equity for the

17   regulated electric operations of Duke Energy of Kentucky, Inc. ("DEK", or

18   "Company"). I will also respond to the Direct Testimony of Dr. Roger Morin, witness

19   for DEK.

20 **Q.**   **Please summarize your conclusions and recommendations.**

21 A.   My conclusions and recommendations are as follows.

22

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1   Based on current financial market conditions, I recommend that the Kentucky Public

2   Service Commission ("KPSC" or "Commission") adopt a 9.0% return on equity for

3   DEK in this proceeding. My recommendation is based primarily on the results of a

4   Discounted Cash Flow ("DCF") model analysis. My DCF analysis incorporates my

5   standard approach to estimating the investor required return on equity and utilizes the

6   proxy group of 20 companies used by DEK witness Dr. Morin.

7

8   My cost of equity analyses also include Capital Asset Pricing Model ("CAPM")

9   analyses for additional information to inform my recommendation to the Commission.

10   I did not incorporate the results of the CAPM in my recommendation given the very

11   low cost of equity results being produced by this model at this time. Nonetheless, the

12   CAPM helps confirm the fact that the required ROE for regulated electric utilities

13   continues to be relatively low given the low interest rate environment that has

14   prevailed in the economy for the last 10 or so years.

15

16   I also reviewed recent Commission-allowed ROEs presented by Dr. Morin, an update

17   to this information provided by DEK through discovery, and two recent allowed ROEs

18   in cases in which I was involved in 2019 that support my 9.0% recommendation for

19   DEK.

20

21   In Section IV, I respond to the testimony and ROE recommendation of the Company's

22   witness Dr. Morin. I will demonstrate that his recommended ROE of 9.8% overstates

23   the current investor required return for a lower risk regulated electric company like

24   DEK. Today's financial environment of low interest rates has been deliberately and

1   methodically supported by Federal Reserve policy actions since 2009. The Fed's

2   further lowering of short-term interest rates three times in 2019 supports future

3   expectations of lower interest rates through 2020. A 9.8% ROE is simply inconsistent

4   with investor required returns for low-risk utilities like DEK.

5

1   **II. FUNDAMENTALS OF SETTING THE ALLOWED RETURN ON EQUITY**

2   **Q.   What are the main guidelines to which you adhere in estimating the cost of equity**
3   **for a firm?**

4   A.   Generally speaking, the estimated cost of equity should be comparable to the returns

5   of other firms with similar risk structures and should be sufficient for the firm to attract

6   capital. These are the basic standards set out by the United States Supreme Court in

7   Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) and Bluefield

8   W.W. & Improv. Co. v. Public Service Comm'n, 262 U.S. 679 (1922).

9

10   From an economist's perspective, the notion of "opportunity cost" plays a vital role in

11   estimating the return on equity. One measures the opportunity cost of an investment

12   equal to what one would have obtained in the next best alternative. For example, let

13   us suppose that an investor decides to purchase the stock of a publicly traded electric

14   utility. That investor made the decision based on the expectation of dividend payments

15   and perhaps some appreciation in the stock's value over time; however, that investor's

16   opportunity cost is measured by what she or he could have invested in as the next best

17   alternative. That alternative could have been another utility stock, a utility bond, a

18   mutual fund, a money market fund, or any other number of investment vehicles.

19

20   The key determinant in deciding whether to invest, however, is based on comparative

21   levels of risk. Our hypothetical investor would not invest in a particular electric

22   company stock if it offered a return lower than other investments of similar risk. The

23   opportunity cost simply would not justify such an investment. Thus, the task for the

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1   rate of return analyst is to estimate a return that is equal to the return being offered by

2   other risk-comparable firms.

3 **Q. Does the level of interest rates affect the allowed cost of equity, or ROE, for**
4 **regulated utilities?**

5 A.   Yes. The common stock of regulated utilities is considered to be interest rate sensitive.

6   This means that the cost of equity for regulated utilities tends to rise and fall with

7   changes in interest rates. For example, as interest rates rise, the cost equity will also

8   rise and vice versa when interest rates fall. This relationship is due in large part to the

9   capital intensive nature of the utility industry, which relies heavily on both debt and

10   equity to finance its regulated investments.

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

12 A.   Since 2007 and 2008, the overall trend in interest rates in the U.S. and the world

13   economy has been lower. This trend was precipitated by the 2007 financial crisis and

14   severe recession that followed in December 2007. In response to this economic crisis,

15   the Federal Reserve ("Fed") undertook an unprecedented series of steps to stabilize

16   the economy, ease credit conditions, and lower unemployment and interest rates.

17   These steps are commonly known as Quantitative Easing ("QE") and were

18   implemented in three distinct stages: QE1, QE2, and QE3. The Fed's stated purpose

19   of QE was "to support the liquidity of financial institutions and foster improved

20   conditions in financial markets."[1]

---

[1]   (http://www federalreserve.gov/monetarypolicy/bst_crisisresponse.htm).

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1   **Q.**   **Mr. Baudino, before you continue please provide a brief explanation of how the**
2   **Fed uses interest rates to improve conditions in the financial markets.**

3   A.   Generally, the Fed uses monetary policy to implement certain economic goals. The

4   Fed explained its monetary policy as follows:

5   Monetary policy in the United States comprises the Federal Reserve's
6   actions and communications to promote maximum employment, stable
7   prices, and moderate long-term interest rates--the three economic goals
8   the Congress has instructed the Federal Reserve to pursue.
9

10   The Federal Reserve conducts the nation's monetary policy by
11   managing the level of short-term interest rates and influencing the
12   overall availability and cost of credit in the economy.[2]
13

14   One of the Fed's primary tools for conducting monetary policy is setting the federal

15   funds rate. The federal funds rate is the interest rate set by the Fed that banks and

16   credit unions charge each other for overnight loans of reserve balances. Traditionally

17   the federal funds rate directly influences short-term interest rates, such as the Treasury

18   bill rate and interest rates on savings and checking accounts. The federal funds rate

19   has a more indirect effect on long-term interest rates, such as the 30-Year Treasury

20   bond and private and corporate long-term debt. Long-term interest rates are set more

21   by market forces that influence the supply and demand of loanable funds.

22   **Q.**   **Please continue with your discussion of the Fed's quantitative easing programs.**

23   A.   QE1 was implemented from November 2008 through approximately March 2010.

24   During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased

25          $1.25 trillion of mortgage-backed securities and $175 billion of agency debt

---

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

1   purchases. QE2 was implemented in November 2010 with the Fed announcing that it

2   would purchase an additional $600 billion of Treasury securities by the second quarter

3   of 2011.[3] Beginning in September 2011, the Fed initiated a "maturity extension

4   program" in which it sold or redeemed $667 billion of shorter-term Treasury securities

5   and used the proceeds to buy longer-term Treasury securities. This program, also

6   known as "Operation Twist," was designed by the Fed to lower long-term interest rates

7   and support the economic recovery. Finally, QE3 began in September 2012 with the

8   Fed announcing an additional bond purchasing program of $40 billion per month of

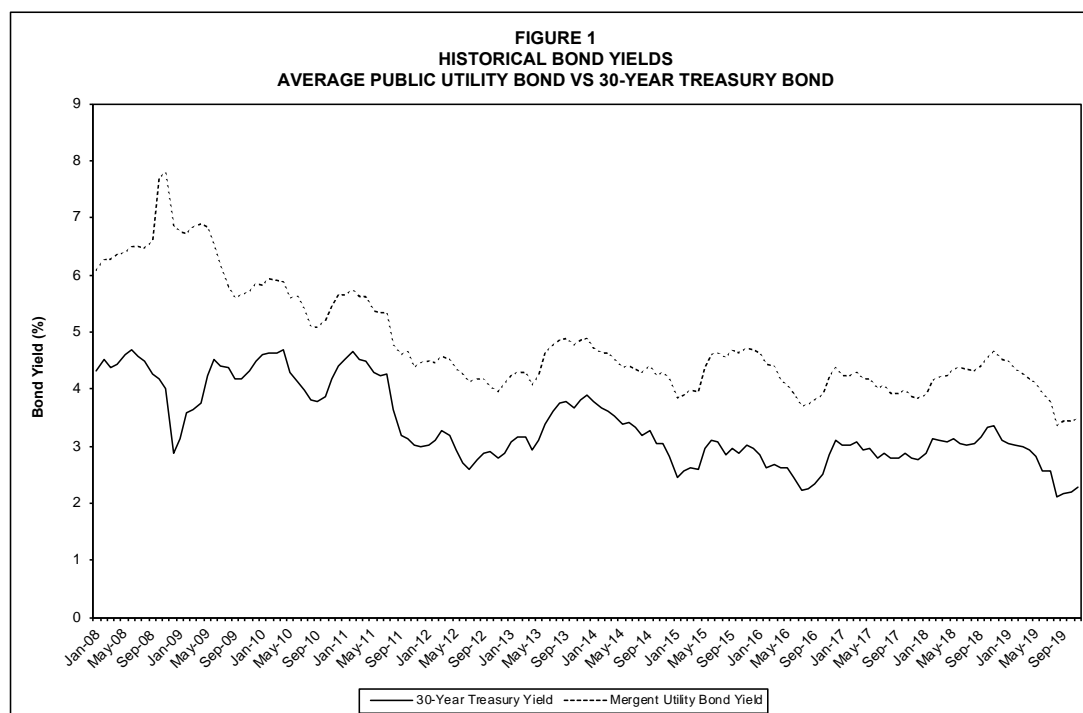9   agency mortgage backed securities.

10

11   The Fed began to pare back its purchases of securities in the last few years. On January

12   29, 2014 the Fed stated that beginning in February 2014 it would reduce its purchases

13   of long-term Treasury securities to $35 billion per month. The Fed continued to reduce

14   these purchases throughout the year and in a press release issued October 29, 2014

15   announced that it decided to close this asset purchase program in October.[4]

16

17   Figure 1 below presents a graph that tracks the 30-Year Treasury Bond yield and the

18   Mergent average utility bond yield. The time period covered is January 2008 through

19   November 2019.

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[3]   (http://www.federalreserve.gov/newsevents/press/monetary/20101103a htm)

[4]   (http://www.federalreserve.gov/newsevents/press/monetary/20141029a htm)

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

1

2

3   The Fed's QE program and federal funds rate cuts were effective in lowering the long-

4   term cost of borrowing in the United States.   The 30-Year Treasury Bond yield

5   declined from 5.11% in July 2007 to a low of 2.59% in July 2012. The average utility

6   bond yield also fell substantially, from 6.28% in July 2007 to 4.12% in July 2012.

7

8   As of November 2019, these long-term interest rates are even lower than in 2012, with

9   the 30-year Treasury Bond yield 2.28% and the average utility bond yield at 3.48%.

10   **Q.   Please summarize recent Fed actions with respect to monetary policy.**

11   A.   In March 2016, the Fed began to raise its target range for the federal funds rate,

12   increasing it to 1/4% to 1/2% from 0% to 1/4%. Since that time, the Fed increased the

13   federal funds rate several more times, with the most recent increase announced on

14   December 19, 2018 resulting in a federal funds rate range of 2.25% - 2.50%.

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1

2   In 2019, however, the Fed reversed course and lowered the federal funds rate three

3   times, with the rate now standing at 1.5% - 1.75%. In its press release dated October

4   30, 2019, the Fed stated the following[5]:

5   Information received since the Federal Open Market Committee met in September
6   indicates that the labor market remains strong and that economic activity has been
7   rising at a moderate rate. Job gains have been solid, on average, in recent months, and
8   the unemployment rate has remained low. Although household spending has been
9   rising at a strong pace, business fixed investment and exports remain weak. On a 12-
10   month basis, overall inflation and inflation for items other than food and energy are
11   running below 2 percent. Market-based measures of inflation compensation remain
12   low; survey-based measures of longer-term inflation expectations are little changed.
13
14   Consistent with its statutory mandate, the Committee seeks to foster maximum
15   employment and price stability. In light of the implications of global developments for
16   the economic outlook as well as muted inflation pressures, the Committee decided to
17   lower the target range for the federal funds rate to 1-1/2 to 1-3/4 percent. This action
18   supports the Committee's view that sustained expansion of economic activity, strong
19   labor market conditions, and inflation near the Committee's symmetric 2 percent
20   objective are the most likely outcomes, but uncertainties about this outlook remain.
21   The Committee will continue to monitor the implications of incoming information for
22   the economic outlook as it assesses the appropriate path of the target range for the
23   federal funds rate.

24 **Q.   What are the Fed's most recent economic projections with respect to the federal**
25 **   funds rate and inflation?**

26 A.   The Fed provided certain economic projections that accompanied its September18,

27   2019 press release showing the following:

28   • Projected federal funds rate of 1.9% for 2019 and 2020, 2.1% for 2021, and

29   2.5% for the longer run.

---

5   https://www.federalreserve.gov/monetarypolicy/files/monetary20191030a1.pdf

1   • Inflation running at 1.8% for 2019, 1.9% for 2020, and 2.0% for 2021 and

2   2022.[6]

3   **Q.   Why is it important to understand the Fed's actions since 2008 and the effect on**
4   **the current cost of capital in the economy generally and for regulated utilities**
5   **specifically?**

6   A.   The Fed's monetary policy actions since 2008 were deliberately undertaken to lower

7   interest rates and support economic recovery. The U.S. economy is still in a low

8   interest rate environment. This environment has affected the common stocks of

9   regulated utilities, which, as I mentioned earlier, are interest rate sensitive. Lower

10   interest rates support lower required ROEs for regulated utilities.

11   **Q.   Are current interest rates indicative of investor expectations regarding the future**
12   **direction of interest rates?**

13   A.   Yes. Securities markets are efficient and most likely reflect investors' expectations

14   about future interest rates. As Dr. Morin pointed out in *New Regulatory Finance:*

15   A considerable body of empirical evidence indicates that U.S. capital
16   markets are efficient with respect to a broad set of information,
17   including historical and publicly available information.[7]
18
19   Dr. Morin also noted the following:

20   There is extensive literature concerning the prediction of interest rates.
21   From this evidence, it appears that the no-change model of interest rates
22   frequently provides the most accurate forecasts of future interest rates
23   while at other times, the experts are more accurate. Naïve
24   extrapolations of current interest rates frequently outperform published
25   forecasts. The literature suggests that on balance, the bond market is
26   very efficient in that it is difficult to consistently forecast interest rates

---

[6]   https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20190918.pdf

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

1   with greater accuracy than a no-change model. The latter model
2   provides similar, and in some cases, superior accuracy than
3   professional forecasts.[8]
4

5 It is important to realize that investor expectations of changes in future interest rates,

6 if any, are likely already embodied in current securities prices, which include debt

7 securities and stock prices. Moreover, the current low interest rate environment still

8 favors lower risk regulated utilities.

9 **Q.** **You mentioned that the required cost of equity for regulated utilities tends to**
10 **follow the direction of interest rates. Could you illustrate this relationship for the**
11 **Commission?**

12 A. Yes. Figure 2 below presents data from Dr. Morin's Attachment RAM-9 and plots the

13 average yearly yield on the 30-year Treasury Bond and the yearly average allowed

14 ROE for electric companies. Figure 2 illustrates the relationship between interest rates

15 and allowed ROEs, showing that as the long-term Treasury Bond yield has fallen since

16 1986, allowed ROEs for electric utilities have generally followed suit, although the

17 decline in ROEs has been less than that for the 30-year Treasury Bond. Note how the

18 difference between the two has increased over time. For example, the difference

19 between the yield on the 30-Year Treasury and the average allowed electric company

20 ROE increased from 3.97% in 1994 to 7.25% in 2012. In 2018, the difference

21 narrowed to 6.53%.

22

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[8] *Ibid*. at 172.

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Figure 2
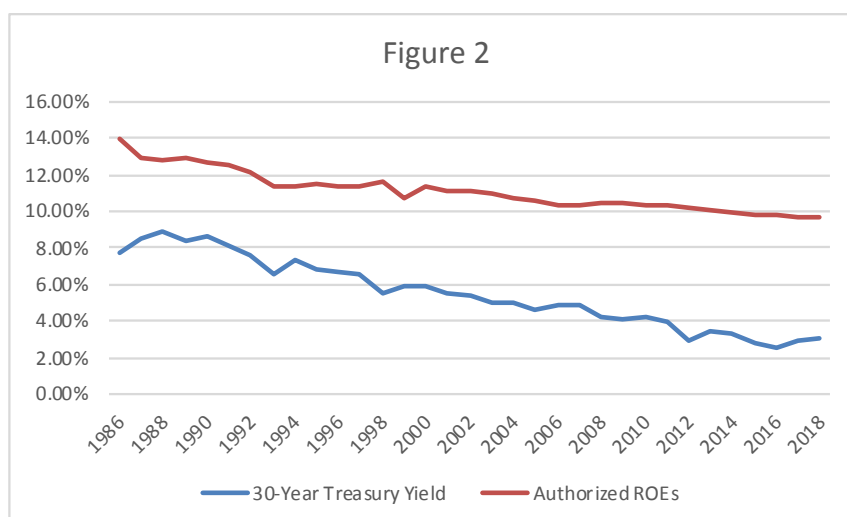
1

2   **Q.   How does the investment community regard the regulated electric utility industry**
3   **as a whole?**

4   A.   The Value Line Investment Survey noted the following in its review of the Electric

5   Utility (East) Industry dated November 15, 2019:

6   "Almost every electric utility stock has performed extremely well in 2019. Only a few
7   issues, including AVANGRID and Exelon, have declined in price. (The price of
8   PG&E stock has plummeted, but this issue is no longer covered in *The Value Line*
9   *Investment Survey* because the company is operating under Chapter 11.) Interest-rate
10   cuts by the Federal Reserve have helped boost the quotations of these equities. With
11   money market funds, savings accounts, CDs, and U.S. Treasury securities offering low
12   yields—that of the 10-year U.S. Treasury note is below 2%—income-oriented
13   investors are ''reaching for yield'' with electric utility stocks, despite their high
14   valuations. The average dividend yield of equities in the Electric Utility Industry is
15   just 3.1%, which is low, by historical standards. For almost all of these issues, their
16   recent price is well within their 2022-2024 Target Price Range. In some cases, the
17   recent quotation is above this range."

18 **Q.   The Edison Electric Institute ("EEI") publishes quarterly reviews of the investor-**
19 **owned electric utility industry. Please summarize EEI's findings with respect to**
20 **credit ratings, risks, and valuations for the electric utility industry.**

21 A.   EEI's recent 3rd Quarter 2019 summary of the Standard and Poor's Utility Credit

22   Ratings showed the following:

23   • The industry average credit rating was BBB+.

24   • 58% of the 45 utilities followed by EEI had credit ratings of BBB/BBB+.

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1   •   27% had a credit rating of A-.

2   EEI's analysis shows that the investor-owned electric utility industry had strong and

3   stable credit metric through the 3rd Quarter of 2019.

4

5   EEI's *Q3 2019 Financial Update*, page 5, noted the following regarding whether

6   electric utility valuations could rise further from their present levels:

7   "Wall Street analysts generally view utility stock valuations as high when measured
8   by price/earnings (PE) ratios relative to the S&P 500 and to history. One reason for
9   this is the very low level of interest rates both in the U.S. and overseas. The U.S. 10-
10   year Treasury yield was about 6% in the late 1990s, more than triple today's level,
11   while bond markets in Europe and Japan sport widespread negative yields. *Another*
12   *reason is the strong fundamentals that underpin prospects for total returns in excess*
13   *of 8% (5% from earnings growth and 3% from the dividend). Given this outlook, the*
14   *view seems to be that utilities offer enough value to lift multiples higher still,*
15   *particularly if global economic growth turns down and interest rates fall to new lows*."
16   (italics added)
17

18   EEI's publication also noted the following with respect to interest rates:

19   "A sharp rise in interest rates is widely seen as the biggest macro threat facing utility
20   investors. *Although that has been said for years and interest rates just seem to fall.*
21   Inflation held near 2% throughout 2018 even as the economy roared and hasn't moved
22   this year either. The main risk to the very long-lived economic expansion seems to be
23   weakness rather than red-hot growth.
24   Analysts note that the impact of rising rates would be on stock prices rather
25   than earnings. Higher rates can translate into higher allowed ROEs and improved
26   pension funding. Many companies have embedded low-cost debt from years of low
27   rates, and interest rates could rise while remaining very low by historical standards."
28   (italics added)
29

30   I underscore to the Commission EEI's statements regarding (1) prospects for total

31   returns in excess of 8%, and (2) the stability of the current low interest rate

32   environment despite years of predictions of higher interest rates. In my view, these

33   points support my recommended cost of equity for DEK of 9.0% as being consistent

34   with investor expectations and current market conditions.

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1 **Q. What are the current credit ratings for Duke Energy Kentucky?**

2 A.   Moody's current long-term credit rating for DEK is Baa1 with a stable outlook. A

3   Baa1 rating is equivalent to S&P's rating of BBB+ and ranks at the top of Moody's

4   Baa credit rating range. S&P's current credit rating for DEK is A- with a stable

5   outlook. These credit ratings are consistent with the electric utility average credit

6   ratings reported by EEI.

7

8   Moody's January 29, 2019 updated report on DEK noted the following credit

9   strengths[9]:

10   • Strong financial metrics

11   • Generally supportive regulation in Kentucky

12   • Position within the Duke Energy corporate family

13   Moody's also noted the following credit challenges:

14   • Credit metrics are expected to weaken

15   • Small size and position as wholly-owned subsidiary of Duke Ohio

16   • Elevated carbon transition risk

17 **Q. Did Duke Energy, the holding company for Duke Energy Kentucky, provide
18   information to its investors that is relevant to the Commission's evaluation of the
19   allowed rate of return for DEK?**

20 A.   Yes. Please refer to Exhibit No. ___(RAB-2), which contains excerpts from Duke

21   Energy's presentation entitled *Duke Energy Earnings Review and Business Update* for

22   the third quarter of 2019. I obtained this presentation from Duke Energy's web site.

---

[9]   Moody's report provided in response to Staff-DR-02-050, Attachment 1.

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1

2   Page 2 of Exhibit No. ___(RAB-2) shows Duke Energy's presentation of its "attractive

3   risk-adjusted total shareholder return" of 8% - 10%. This total return consists of a

4   dividend yield of 4.0% and a growth rate of 4% - 6%. I note that my recommended

5   ROE for Duke Kentucky of 9.0% falls in the middle of this range.

6

7   Page 3 of Exhibit No. ___(RAB-2) shows that DEK recently issued long-term debt at

8   rates in the range of 3.23% - 4.32%. These rates are reasonably consistent with recent

9   A/Baa bond yields according to data from the Mergent Bond Record.

10

1   **III. DETERMINATION OF RETURN ON EQUITY**

2   Q.   **Please describe the methods you employed in estimating your recommended**
3   **return on equity for DEK.**

4   A.   I employed a Discounted Cash Flow ("DCF") analysis using a proxy group of 20

5   regulated electric and gas utilities. In my opinion, they form a reasonable basis for

6   estimating the investor required return on equity for DEK. I also employed Capital

7   Asset Pricing Model ("CAPM") analyses using both historical and forward-looking

8   data. Although I primarily relied on the DCF results for my recommended 9.0% ROE

9   for DEK, the results from the CAPM tend to support the reasonableness of my

10   recommendation.

11 Q.   **Describe the proxy group you employed to estimate the cost of equity for DEK.**

12 A.   In this case, I chose to use the same proxy group that Dr. Morin used in his ROE

13   analyses. Dr. Morin discussed his approach to developing his recommended proxy

14   group on pages 28 through 29. Dr. Morin's proxy group is a reasonable basis for

15   estimating the investor required return for DEK, since the Company's ROE cannot be

16   estimated directly because it is not publicly traded as Dr. Morin pointed out.

17 **Discounted Cash Flow ("DCF") Model**

18 Q.   **Please describe the basic DCF approach.**

19 A.   The basic DCF approach is rooted in valuation theory. It is based on the premise that

20   the value of a financial asset is determined by its ability to generate future net cash

21   flows. In the case of a common stock, those future cash flows generally take the form

22   of dividends and appreciation in stock price. The value of the stock to investors is the

23   discounted present value of future cash flows. The general equation then is:

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

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

5   This is no different from determining the value of any asset from an economic point

6   of view; however, the commonly employed DCF model makes certain simplifying

7   assumptions. One is that the stream of income from the equity share is assumed to be

8   perpetual; that is, there is no salvage or residual value at the end of some maturity date

9   (as is the case with a bond). Another important assumption is that financial markets

10   are reasonably efficient; that is, they correctly evaluate the cash flows relative to the

11   appropriate discount rate, thus rendering the stock price efficient relative to other

12   alternatives. Finally, the model I typically employ also assumes a constant growth rate

13   in dividends. The fundamental relationship employed in the DCF method is described

14   by the formula:

15
$$k = {D_1}/{P_0} + g$$

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

20

21   Embodied in this formula, it is assumed that "k" reflects the investors' expected return.

22   Use of the DCF method to determine an investor-required return is complicated by the

23   need to express investors' expectations relative to dividends, earnings, and book value

24   over an infinite time horizon. Financial theory suggests that stockholders purchase

25   common stock on the assumption that there will be some change in the rate of dividend

26   payments over time. We assume that the rate of growth in dividends is constant over

1   the assumed time horizon, but the model could easily handle varying growth rates if

2   we knew what they were. Finally, the relevant time frame is prospective rather than

3   retrospective.

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

6 A.   I first determined the current dividend yield, D_1/P_0, from the basic equation. My

7   general practice is to use six months as the most reasonable period over which to

8   estimate the dividend yield. The six-month period I used covered the months from

9   June through November 2019. I obtained historical prices and dividends from Yahoo!

10   Finance. The annualized dividend divided by the average monthly price represents

11   the average dividend yield for each month in the period.

12

13   The resulting average dividend yield for the proxy group is 3.00%. These calculations

14   are shown in Exhibit No. ___(RAB-3).

15 **Q. Having established the average dividend yield, how did you determine the**
16 **investors' expected growth rate for the comparison groups?**

17 A.   The investors' expected growth rate, in theory, correctly forecasts the constant rate of

18   growth in dividends. The dividend growth rate is a function of earnings growth and

19   the payout ratio, neither of which is known precisely for the future. We refer to a

20   perpetual growth rate since the DCF model has no cut-off point. We must estimate

21   the investors' expected growth rate because there is no way to know with absolute

22   certainty what investors expect the growth rate to be in the short term, much less in

23   perpetuity.

24

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1   For my analysis in this proceeding, I used three major sources of analysts' forecasts

2   for growth. These sources are The Value Line Investment Survey, Zacks, and Yahoo!

3   Finance.

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

5   A.   The Value Line Investment Survey is a widely used and respected source of investor

6   information that covers approximately 1,700 companies in its Standard Edition and

7   several thousand in its Plus Edition. It provides both historical and forecasted

8   information on a number of important data elements. Value Line neither participates

9   in financial markets as a broker nor works for the utility industry in any capacity of

10   which I am aware.

11

12   Zacks gathers opinions from a variety of analysts on earnings growth forecasts for

13   numerous firms including regulated gas utilities. The estimates of the analysts

14   responding are combined to produce consensus average estimates of earnings growth.

15   I obtained Zacks' earnings growth forecasts from its web site.

16

17   Like Zacks, Yahoo! Finance also compiles and reports consensus analysts' forecasts

18   of earnings growth. I obtained these forecasts from the Yahoo! Finance web site.

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

20 A.   Return on equity analysis is a forward-looking process. Five-year or ten-year

21   historical growth rates may not accurately represent investor expectations for future

22   dividend growth. Analysts' forecasts for earnings and dividend growth provide better

23   proxies for the expected growth component in the DCF model than historical growth

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1 rates. Analysts' forecasts are also widely available to investors and one can reasonably

2 assume that they influence investor expectations.

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

5 Q. Columns (1) through (4) of Exhibit No. ___(RAB-4) shows the forecasted dividend

6 and earnings growth rates from Value Line and the earnings growth forecasts from

7 Zacks and Yahoo! Finance for the companies in the proxy group. It is important to

8 include dividend growth forecasts in the DCF model since the model calls for

9 forecasted cash flows and Value Line is the only source of which I am aware that

10 forecasts dividend growth. I also excluded any negative values from the calculation

11 of the average and median values for the proxy group.

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

13 A. To estimate the expected dividend yield (D_1), the current dividend yield must be

14 moved forward in time to account for dividend increases over the next twelve months.

15 I estimated the expected dividend yield by multiplying the current dividend yield by

16 one plus one-half the expected growth rate.

17

18 Exhibit No. ___(RAB-4) presents my standard method of calculating dividend yields,

19 growth rates, and return on equity for the proxy group. The DCF Return on Equity

20 Calculation section shows the application of each of four growth rates I used in my

21 analysis to the current group dividend yield of 3.00% to calculate the expected

22 dividend yield. I then added the expected growth rates to the expected dividend yield.

23 My DCF return on equity was calculated using two different methods. Method 1 uses

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| 1 | | the Average Growth Rates shown in the upper section of Exhibit No. ___(RAB-4) and |

1   the Average Growth Rates shown in the upper section of Exhibit No. ___(RAB-4) and

2   Method 2 utilizes the median growth rates shown in that section.

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

4   A.   The results for Method 1 range from 8.00% to 9.45% and the results for Method 2

5   range from 7.75% to 9.09%. The average results for Methods 1 and 2 are 8.53% -

6   8.48%, respectively, for the proxy group.

7   **Capital Asset Pricing Model**

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

9   A.   The theory underlying the CAPM approach is that investors, through diversified

10   portfolios, may combine assets to minimize the total risk of the portfolio.

11   Diversification allows investors to diversify away all risks specific to a particular

12   company and be left only with market risk that affects all companies. Thus, the CAPM

13   theory identifies two types of risks for a security: company-specific risk and market

14   risk. Company-specific risk includes such events as strikes, management errors,

15   marketing failures, lawsuits, and other events that are unique to a particular firm.

16   Market risk includes inflation, business cycles, war, variations in interest rates, and

17   changes in consumer confidence. Market risk tends to affect all stocks and cannot be

18   diversified away. The idea behind the CAPM is that diversified investors are rewarded

19   with returns based on market risk.

20

21   Within the CAPM framework, the expected return on a security is equal to the risk-

22   free rate of return plus a risk premium that is proportional to the security's market, or

23   non-diversifiable, risk. Beta is the factor that reflects the inherent market risk of a

1   security and measures the volatility of a particular security relative to the overall

2   market for securities. For example, a stock with a beta of 1.0 indicates that if the

3   market rises by 15%, that stock will also rise by 15%. This stock moves in tandem

4   with movements in the overall market. Stocks with a beta of 0.5 will only rise or fall

5   50% as much as the overall market. So with an increase in the market of 15%, this

6   stock will only rise 7.5%. Stocks with betas greater than 1.0 will rise and fall more

7   than the overall market. Thus, beta is the measure of the relative risk of individual

8   securities vis-à-vis the market.

9

10   Based on the foregoing discussion, the equation for determining the return for a

11   security in the CAPM framework is:

12
$$K = Rf + \beta(MRP)$$

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

17   This equation tells us about the risk/return relationship posited by the CAPM.

18   Investors are risk averse and will only accept higher risk if they expect to receive

19   higher returns. These returns can be determined in relation to a stock's beta and the

20   market risk premium. The general level of risk aversion in the economy determines

21   the market risk premium. If the risk-free rate of return is 3.0% and the required return

22   on the total market is 15%, then the risk premium is 12%. Any stock's required return

23   can be determined by multiplying its beta by the market risk premium. Stocks with

24   betas greater than 1.0 are considered riskier than the overall market and will have

1   higher required returns. Conversely, stocks with betas less than 1.0 will have required

2   returns lower than the market as a whole.

3 **Q.**   **In general, are there concerns regarding the use of the CAPM in estimating the**
4   **return on equity?**

5 A.   Yes. There is some controversy surrounding the use of the CAPM and its accuracy

6   regarding expected returns. There is substantial evidence that beta is not the primary

7   factor for determining the risk of a security. For example, Value Line's "Safety Rank"

8   is a measure of total risk, not its calculated beta coefficient. Beta coefficients usually

9   describe only a small amount of total investment risk. Dr. Burton Malkiel, author of

10   *A Random Walk Down Wall Street* noted the following in his best-selling book on

11   investing:

12   Second, as Professor Richard Roll of UCLA has argued, we must keep in mind that it
13   is very difficult (indeed probably impossible) to measure beta with any degree of
14   precision. The S&P 500 Index is not "the market". The Total Stock Market contains
15   many thousands of additional stocks in the United States and thousands more in
16   foreign countries.   Moreover, the total market includes bonds, real estate,
17   commodities, and assets of all sorts, including one of the most important assets any of
18   us has - the human capital built up by education, work, and life experience. Depending
19   on exactly how you measure "the market" you can obtain very different beta values.[10]
20

21   Pratt and Grabowski also stated the following with respect to the CAPM:[11]

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

---

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

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

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1   As a practical matter, there is substantial judgment involved in estimating the required

2   market return and market risk premium. In theory, the CAPM requires an estimate of

3   the return on the total market for investments, including stocks, bonds, real estate, etc.

4   It is nearly impossible for the analyst to estimate such a broad-based return. Often in

5   utility cases, a market return is estimated using the S&P 500 or the return on Value

6   Line's stock market composite. However, these are limited sources of information

7   with respect to estimating the investor's required return for all investments. In practice,

8   the total market return estimate faces significant limitations to its estimation and,

9   ultimately, its usefulness in quantifying the investor required ROE.

10

11   In the final analysis, a considerable amount of judgment must be employed in

12   determining the market return and expected risk premium elements of the CAPM

13   equation. The analyst's application of judgment can significantly influence the results

14   obtained from the CAPM. My past experience with the CAPM indicates that it is

15   prudent to use a wide variety of data in estimating investor-required returns. Of

16   course, the range of results may also be wide, indicating the difficulty in obtaining a

17   reliable estimate from the CAPM.

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

19   A.   I used two approaches to estimate the market risk premium portion of the CAPM

20   equation. One approach uses the expected return on the market and is forward-looking.

21   The other approach employs an historical risk premium based on actual stock and bond

22   returns from 1926 through 2018.

| 1 | Q. | **Please describe your forward-looking approach to estimating the market risk** |
| 2 | | **premium.** |

| 3 | A. | The first source I used was the Value Line Investment Analyzer Plus Edition, for |

4   November 20, 2019. This edition covers several thousand stocks. The Value Line

5   Investment Analyzer provides a summary statistical report detailing, among other

6   things, forecasted growth rates for earnings and book value for the companies Value

7   Line follows as well as the projected total annual return over the next 3 to 5 years. I

8   present these growth rates and Value Line's projected annual returns on page 2 of

9   Exhibit No. ___(RAB-5). I included median earnings and book value growth rates.

10   The estimated market returns using Value Line's market data range from 10.63% to

11   12.21%. The average of these market returns is 11.42%.

| 12 | Q. | **Why did you use median growth rate estimates rather than the average growth** |
| 13 | | **rate estimates for the Value Line companies?** |

| 14 | A. | Using median growth rates is likely a more accurate approach to estimating the central |

15   tendency of Value Line's large data set compared to the average growth rates. Average

16   earnings and book value growth rates may be unduly influenced by very high or very

17   low 3 - 5-year growth rates that are unsustainable in the long run. For example, Value

18   Line's Statistical Summary shows both the highest and lowest value for earnings and

19   book value growth forecasts. For earnings growth, Value Line showed the highest

20   earnings growth forecast to be 93% and the lowest growth rate to be -13.5%. With

21   respect to book value, the highest growth rate was 91% and the lowest was a -27.5%.

22   None of these growth rate projections is compatible with long-run growth prospects

23   for the market as a whole. The median growth rate is not influenced by such extremes

24   because it represents the middle value of a very wide range of earnings growth rates.

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1　Q.　**Please continue with your market return analysis.**

2　A.　I also considered a supplemental check to the Value Line projected market return

3　　　estimates. Duff and Phelps compiled a study of historical returns on the stock market

4　　　in its *2019 Valuation Handbook - U.S. Guide to Cost of Capital*, which is now part of

5　　　its Cost of Capital Navigator subscription service. Some analysts employ this

6　　　historical data to estimate the market risk premium of stocks over the risk-free rate.

7　　　The assumption is that a risk premium calculated over a long period of time is

8　　　reflective of investor expectations going forward. Exhibit No. ___(RAB-6) presents

9　　　the calculation of the market returns and market risk premiums using the historical

10　　　data from Duff and Phelps.

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

12　A.　Exhibit No. ___(RAB-6) shows the arithmetic average of yearly historical stock

13　　　market returns over the historical period from 1926 - 2018. The average annual

14　　　income return for 20-year Treasury bond is subtracted from these historical stock

15　　　returns to obtain the historical market risk premium of stock returns over long-term

16　　　Treasury bond income returns. The resulting historical market risk premium is 6.9%.

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

18　A.　Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and Dr.

19　　　Peng Chen indicating that the historical risk premium of stock returns over long-term

20　　　government bond returns has been significantly influenced upward by substantial

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| 1 | | growth in the price/earnings ("P/E") ratio.[12] Duff and Phelps noted that this growth in |

1   growth in the price/earnings ("P/E") ratio.[12] Duff and Phelps noted that this growth in

2   the P/E ratio for stocks was subtracted out of the historical risk premium to arrive at

3   an adjusted "supply side" historical arithmetic market risk premium is 6.14%, which I

4   have also included in Exhibit No. ___(RAB-6).

5 **Q. How did you determine the risk free rate?**

6 A.   I used two different measures for the risk-free rate. The first measure is the average

7   30-year Treasury Bond yield for the six-month period from June through November

8   2019. This represents a current measure of the risk-free rate based on actual current

9   Treasury yields, which is 2.3%.

10

11   The second measure comes from Duff and Phelps' most recent "normalized" 30-year

12   Treasury yield as of September 30, 2019[13]. Duff and Phelps developed this normalized

13   Treasury Bond yield using its measure of the "real risk free rate" and expected

14   inflation. The Duff and Phelps normalized risk-free rate is 3.0%.

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

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

19   • Forward-looking risk premiums   8.42% - 9.10%

20   • Historical risk premium   6.14% - 6.90%

---

[12] *2019 Cost of Capital: Annual U.S. Guidance and Examples,* Duff and Phelps Cost of Capital
      Navigator, Chapter 3, pp. 45 - 47.

[13] https://www.duffandphelps.com/insights/publications/valuation/us-normalized-risk-free-effective-
      september-30-2019

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1   By way of comparison, Duff and Phelps currently recommends an equity risk premium

2   of 5.5%, which resulted in a base U.S. cost of capital estimate of 8.5%. Based on this

3   comparison, my range of equity risk premium estimates are certainly not conservative

4   or understated.   Dr. Morin's recommended market risk premium that he used in his

5   CAPM analyses was 7.5%, which falls within the range shown above.

6   **Q.   How did you determine the value for beta?**

7   A.   I obtained the betas for the companies in the proxy group from most recent Value Line

8   reports. The average of the Value Line betas for the proxy group is 0.60.

9   **Q.   Please summarize the CAPM results.**

10   A.   For my forward-looking CAPM return on equity estimates, the CAPM results are

11   7.73% - 8.10%. Using historical risk premiums, the CAPM results range from 5.97%

12   - 7.11%.

13   **ROE Conclusions and Recommendations**

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

15   A.   Table 1 below summarizes my return on equity results using the DCF and CAPM for

16   the proxy group of companies.

```
                    TABLE 1
            SUMMARY OF ROE ESTIMATES

DCF Methodology
Average Growth Rates
- High                                      9.45%
- Low                                       8.00%
- Average                                   8.53%
Median Growth Rates:
- High                                      9.09%
- Low                                       7.75%
- Average                                   8.48%

CAPM Methodology

Forward-lookng Market Return:
- Current 30-Year Treasury                  7.73%
- D&P Normalized Risk-free Rate             8.01%

Historical Risk Premium:
- Current 30-Year Treasury         5.97% - 6.42%
- D&P Normalized Risk-free Rate    6.65% - 7.11%
```

1

2 **Q.   Did you consider recently allowed equity returns from regulatory commissions?**

3 A.   Yes. Dr. Morin's Attachment RAM-9 showed that the average commission allowed

4   ROEs for 2016, 2017, and 2018 were 9.77%, 9.74%, and 9.64%, respectively. I note

5   that the average 30-year Treasury yields in these years were significantly higher than

6   current yields. Exhibit No. ___(RAB-5) shows that the most recent six-month average

7   30-year Treasury Bond yield is only 2.32%, compared to the average yield in 2018 of

8   3.11%. With long-term Treasury yields so much lower now, it makes sense that the

9   allowed ROE for regulated electric companies should decline as well.

10

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1   DEK also provided an update to these commission allowed returns from Regulatory

2   Research Associates (RRA) through the first half of 2019.[14]   This RRA report stated

3   that the average authorized ROE for electric companies for fully litigated cases in the

4   first half of 2019 was ███ .

5

6   Finally, in 2019 two regulatory authorities adopted my ROE recommendations in their

7   respective jurisdictions that I wish to mention. In its Resolution No. R-19-457 dated

8   November 7, 2019 the City Council of New Orleans adopted my recommended 9.35%

9   ROE for Entergy New Orleans, Docket No. UD-18-07. Also, in its Order entered

10   October 23, 2019 the Vermont Public Utility Commission adopted my recommended

11   9.20% ROE for Vermont Gas Systems, Inc.   Although Vermont Gas is a gas

12   distribution utility, I cite this decision as further evidence for the Commission that

13   ROE awards are declining and should reflect the impact of lower long-term interest

14   rates currently present in the economy.

15   Q.   **What is your recommended return on equity for DEK?**

16   A.   Based on my analysis in this case, the decline in long-term interest rates in the

17   economy generally, and considering recent commission allowed returns, I recommend

18   that the Commission adopt a 9.00% return on equity for DEK.

19   Q.   **Please explain how you arrived at your recommendation.**

---

[14]   Duke Energy Kentucky provided *RRA Regulatory Focus, Major Rate Case Decisions - January through June 2019* in a confidential response to AG 1-70.

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1   A.   I began with the average DCF ROE results in Table 1, which are 8.48% and 8.53%. I

2   also considered the top end of my DCF range, which is 9.45%. My recommendation

3   of 9.0% is near the midpoint of this range and represents a reasonable estimate for the

4   investor required ROE for DEK in this case.

5

6   In recommending 9.0%, I recognize that recent Commission allowed returns are

7   somewhat higher than my DCF results.   However, I do not recommend that the

8   Commission base its allowed ROE on the average allowed ROEs in other states. Such

9   an approach would not be based on the specific evidence and circumstances presented

10   in this case. Nevertheless, my recommendation of 9.0% is reasonably close to recently

11   allowed ROEs and is fully based on the market evidence and analysis I reviewed.

12

13   I also considered the comments from the Value Line Investment Survey I quoted in

14   Section II of my Direct Testimony, which stated that utility stock prices are within

15   their forecasted levels for the 2022 - 2024 time period, with some stocks exceeding

16   those forecasts. My recommendation of 9.0% allows for some risk of declines in the

17   stock prices of the companies in the proxy group given the current high valuations and

18   the "reach for yield" by investors mentioned by Value Line.

19 **Q.   Did you accept the Company's requested capital structure?**

20 A.   Yes, I accepted DEK's requested capital structure in this case. Mr. Kollen's direct

21   testimony addresses an adjustment he made to the Company's cost of debt.

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1   **IV. RESPONSE TO DUKE ENERGY KENTUCKY ROE TESTIMONY**

2   **Q.   Have you reviewed the Direct Testimony of Dr. Morin?**

3   A.   Yes.

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

6   A.   Dr. Morin's recommended 9.8% ROE is overstated, inconsistent with the current low

7   interest rate environment, and not supported by my review of current market evidence

8   from both the DCF and CAPM.

9   **DCF Model**

10   **Q.   Briefly summarize Dr. Morin's approach to the DCF model.**

11   A.   Dr. Morin's approach was similar to mine. He used earnings forecasts from Value

12   Line and Yahoo! Finance to estimate the investor expected growth component. He

13   also used reported dividend yields from Yahoo! Finance and multiplied those yields

14   by 1+g to obtain the expected dividend yield in the DCF equation.

15

16   Dr. Morin rejected the use of forecasted dividend growth, citing concerns over slower

17   dividend growth over the near term that did not reflect long-run expected earnings

18   growth. Dr. Morin also cited academic studies that supported the use of earnings growth

19   forecasts as superior proxies for investor expected growth. Dr. Morin's explanations are

20   included in pages 23 through 24 of his Direct Testimony.

21

1   Dr. Morin also rejected the use of $1 + \frac{1}{2} *g$ for estimating the expected dividend yield.

2   He also included an adjustment for flotation costs in the DCF model. Dr. Morin's

3   recommended DCF results ranged from 8.91% - 10.0%.

4   **Q.   If one excludes flotation costs, how do Dr. Morin's DCF results compare with**
5   **yours?**

6   A.   Our results are closer if one excludes flotation costs. Dr. Morin's DCF cost of equity

7   results excluding flotation costs fall in the range of 8.75% - 9.83%.

8   **Q.   Should flotation costs be included in the cost of equity?**

9   A.   No. A flotation cost adjustment attempts to recognize and collect the costs of issuing

10   common stock. Such costs typically include legal, accounting, and printing costs as well

11   as broker fees and discounts. In my opinion, it is likely that flotation costs are already

12   accounted for in current stock prices and that adding an adjustment for flotation costs

13   amounts to double counting. A DCF model using current stock prices should already

14   account for investor expectations regarding the collection of flotation costs. Multiplying

15   the dividend yield by a 4% flotation cost adjustment, for example, essentially assumes

16   that the current stock price is wrong and that it must be adjusted downward to increase

17   the dividend yield and the resulting cost of equity. This is not an appropriate assumption

18   regarding investor expectations. Current stock prices most likely already account for

19   flotation costs, to the extent that such costs are even accounted for by investors.

20 **Q.   You and Dr. Morin used the same proxy group for your DCF analyses. Why are**
21   **your DCF results lower than Dr. Morin's?**

22 A.   The primary reason, excluding flotation costs, is lower forecasted earnings growth

23   from Value Line and Yahoo! Finance. My updated average earnings growth rate from

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1   Value Line is 6.35%, compared to Dr. Morin's Value Line average of 6.65%. My

2   updated Yahoo! Finance average earnings growth forecast is also lower, 4.93%

3   compared to Dr. Morin's 5.59%. Dr. Morin also used Value Line's forecasted earnings

4   growth for Exelon in his calculation of the Yahoo! Finance earnings growth average.

5   A better proxy for the consensus analysts' earnings growth forecast would have been

6   Exelon's earnings growth forecast from Zacks, which is currently 4.50%, rather than

7   the 10.0% forecast from Value Line. Using the Zacks forecast would have lowered

8   Dr. Morin's average growth forecast from Yahoo! Finance.

9   **Q.   Are Dr. Morin's concerns regarding the use of forecasted dividend growth**
10   **warranted?**

11   A.   No, not at this time. Value Line's forecasted dividend growth rates for the companies

12   in the proxy group are not at all out of line with the earnings growth forecasts from

13   Value Line, Zacks, and Yahoo! Finance. In addition, dividends are the cash flows

14   investors receive from their investments in utility stocks and if credible dividend

15   growth forecasts are available, such as those from Value Line, then they certainly

16   should be included in the DCF model. I agree with Dr. Morin's position with respect

17   to the importance of earnings growth forecasts and their influence on investor

18   expectations. That is why I gave 75% weight to earnings growth forecasts in my

19   formulation of the DCF model.

20   **Q.   You used $1 + .5*g$ to calculate the expected dividend yield in the DCF equation.**
21   **Does this approach understate the expected dividend yield compared to the $1 + g$**
22   **approach?**

23   A.   No, and in fact the two approaches do not yield significantly different results, although

24   the 1+g approach results in a slightly higher expected dividend yield. Using $1+.5*g$

1   assumes that the growth in dividends received by an investor occurs mid-year, rather

2   than throughout the entire year. The 1+g approach assumes that the investor receives

3   the full amount of growth throughout the next year. Given the timing of dividend

4   increases and the level of the current dividend, the investor may or may not actually

5   receive four quarters of growth in the dividend payment during the next year. Thus,

6   applying one-half of the expected growth rate to the current quarterly dividend

7   recognizes that the investor may not actually receive a full year of increased dividend

8   payments from the time the DCF calculation was made.

9   **CAPM and ECAPM**

10   **Q.**   **On page 32 of his Direct Testimony, Dr. Morin recommended using a forecasted**
11   **interest rate of 4.2% for the risk free rate of return. Is it appropriate to use**
12   **forecasted interest rates for purposes of estimating the current ROE for Duke**
13   **Kentucky?**

14   A.   No, definitely not. Current interest rates and bond yields embody all the relevant

15   market data and expectations of investors, including expectations of changing future

16   interest rates. Current interest rates present tangible market evidence of investor return

17   requirements today, and these are the interest rates and bond yields that should be used

18   in the CAPM, ECAPM, and in the bond yield plus risk premium analyses. To the

19   extent that investors give forecasted interest rates any weight at all, they are already

20   incorporated in current securities prices.

21   **Q.**   **Please explain in more detail why the Commission should reject the forecasted**
22   **Treasury yield recommended by Dr. Morin.**

23   A.   As I stated in Section II my Direct Testimony, current interest rates embody investor

24   expectations based on their assessments of all available market information.   This

25   includes the interest rate forecasts cited by Dr. Morin as well as statements and actions

1   from the Federal Reserve. The KPSC should not invest in the interest rate forecasts

2   cited by Dr. Morin in determining a fair rate of return for DEK in this proceeding.

3 **Q.**   **What does a 4.2% forecasted interest rate suggest with regards to investors**
4   **holding 30-year Treasury bonds currently?**

5 A.   It suggests that investors today are expecting to incur huge losses in the value of their

6   investments in long-term Treasury bonds, which makes no economic sense

7   whatsoever.

8

9   The price of a bond moves in the opposite direction of its yield. In other words, given

10   a certain current bond coupon and price, if the required yield on that bond increases

11   then the price of the bond goes down. Alternatively, if the required yield declines,

12   then the price of the bond increases. This relationship can be illustrated with the

13   following simplified example. Assume a current 30-year Treasury bond has a coupon

14   of $2.75 and a price of $100, resulting in a current yield of 2.75%. If interest rates

15   were to rise in the economy such that the required yield on the 30-year Treasury

16   increased to 4.2%, then the price of our existing 30-year Treasury bond would fall to

17       $65.48 from $100, given the coupon of $2.75. This represents a loss to our current

18   bond investor of 34.5%.

19

20   The point here is that if investors were certain that there would soon be a substantial

21   increase in interest rates, the rational response would be to immediately discount what

22   they were willing to pay currently for the 30-year Treasury bond rather than pay $100

23   and suffer certain significant losses to the value of their bonds. The fact that the 30-

24   Year Treasury bond is currently yielding about 2.3% suggests that investors do not

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1   expect Treasury Bonds yields to drastically increase and, as a result, cause dramatic

2   losses in their investments.

3 **Q.**   **How does Dr. Morin's forecasted Treasury yield of 4.2% compare with the recent**
4   **bond yields on debt issued by Duke Kentucky?**

5 A.   I cited yields of 3.23% - 4.32% on long-term debt recently issued by DEK in Section

6   II of my Direct Testimony. Dr. Morin's forecasted yield on the 30-year Treasury bond

7   of 4.2% is about as high as the yield for 30-year debentures for Duke Kentucky in June

8   2019, debt that is much riskier than the long-term Treasury bond backed by the full

9   faith and credit of the U.S. government.

10

11   Clearly, Dr. Morin's recommended 4.2% forecasted interest rate fails to properly

12   reflect investor expectations in today's market. It results in inflated results for his

13   CAPM, ECAPM, and historical risk premium studies.

14 **Q.**   **Did Dr. Morin recommend that the Commission adopt his forecasted interest**
15   **rates for use in the CAPM and ECAPM in DEK's last rate case?**

16 A.   Yes. In his Direct Testimony in Case No. 2017-00321 filed on September 1, 2017 Dr.

17   Morin recommended using a forecasted 30-year Treasury bond yield of 4.4%. More

18   than two years later, not only has this forecast failed to materialize, the yield on the

19   30-year Treasury bond has fallen to around 2.3% as of November 2019.   It is

20   abundantly clear that reliance on this excessively high and demonstrably incorrect

21   Treasury yield forecast in DEK's last rate case would have resulted in a grossly

22   overstated ROE for Kentucky ratepayers to support.

1 **Q.** **What is the CAPM result using your current 30-Year Treasury Bond yield, the**
2 **Duff and Phelps normalized risk-free rate, and Dr. Morin's recommended**
3 **market risk premium of 7.5%?**

4 A. The recalculated CAPM and ECAPM using these proxies for the risk-free rate and Dr.

5 Morin's recommended market risk premium are as follows:

6 *CAPM* *2.3% + .6 * 7.5% = 6.8% ROE*
7   *3.0% + .6 * 7.5% = 7.5% ROE*
8
9 *ECAPM* *2.3% + .25(7.5%) + .75*.60 * (7.5%) = 7.55% ROE*
10   *3.0% + .25(7.5%) + .75*.60 * (7.5%) = 8.25% ROE*

11 **Q.** **Beginning on page 44 of his Direct Testimony, Dr. Morin described the Empirical**
12 **CAPM ("ECAPM") analysis. Is this a reasonable method to use to estimate the**
13 **investor required ROE for Duke Kentucky?**

14 A. No. The ECAPM is supposed to account for the possibility that the CAPM understates

15 the return on equity for companies with betas less than 1.0. The use of an adjustment

16 factor to "correct" the CAPM results for companies with betas less than 1.0 suggests

17 that published betas by such sources as Value Line are incorrect and that investors

18 should not rely on them in formulating the CAPM. Further, Dr. Morin did not present

19 evidence that investors use the adjustment figure the calculated (alpha) in his ECAPM.

20 **Historical Risk Premium Estimates**

21 **Q.** **Please summarize Dr. Morin's historical risk premium approach.**

22 A. Dr. Morin presented his historical risk premium approach beginning on page 49 of his

23 Direct Testimony. Dr. Morin calculated an historical risk premium using the actual

24 realized return on equity for the S&P Utility Index and then subtracting the long-term

25 Treasury bond income component of the yields for each year over the period 1930 –

26 2018. This historical risk premium was 6.1%. When added to Dr. Morin's

1   recommended forecasted Treasury bond yield of 4.2%, his recommended cost of

2   equity was 10.3% without flotation costs.

3   **Q.**   **Please respond to the Company witnesses' risk premium analysis.**

4   A.   Generally, the bond yield plus risk premium approach is imprecise and can only

5   provide very general guidance on the current authorized ROE for a regulated electric

6   utility. Risk premiums can change substantially over time and with varying risk

7   perceptions of investors. As such, this approach is a "blunt instrument", if you will,

8   for estimating the ROE in regulated proceedings. In my view, a properly formulated

9   DCF model using current stock prices and growth forecasts is far more reliable and

10   accurate than the bond yield plus risk premium approach, which relies on an historical

11   risk premium analysis over a certain historical period.

12   **Q.**   **Does Dr. Morin's historical risk premium analysis suffer from the use of a**
13   **forecasted Treasury bond yield?**

14   A.   Yes, most definitely. If the Commission wishes to consider Dr. Morin's historical risk

15   premium analysis, then the current yield on the 30-year Treasury bond should also be

16   used. Using this current yield and the historical risk premium calculated by Dr. Morin,

17   the resulting ROE estimate would be:

18

19   *2.30% + 6.1% = 8.40% ROE*

20   **Allowed Risk Premium Estimates**

21   **Q.**   **Please summarize Dr. Morin's allowed risk premium ROE analysis.**

22   A.   Dr. Morin developed an historical risk premium using Commission-allowed returns

23   for regulated utility companies from 1986 through 2018. He also used regression

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1   analysis to estimate the value of the inverse relationship between interest rates and risk

2   premiums during that period.   On page 53 of his Direct Testimony, Dr. Morin

3   calculated the risk premium ROE to be 10.5%.

4

5   Once again, Dr. Morin's 10.5% risk premium ROE was inflated by using a forecasted

6   Treasury bond yield of 4.2%. If one uses the approximate current yield on the 30-year

7   Treasury, the resulting ROE is as follows:

8

9   *8.16 – (0.4668 * 2.30%) + 2.30% = 9.38% ROE*

10

11   As before, I strongly recommend that the Commission reject the unreasonable

12   forecasted Treasury bond yield used by Dr. Morin.   Using the current Treasury Bond

13   yield results in a risk premium ROE that more closely tracks current commission-

14   allowed ROEs.

15

16   **Dr. Morin's ROE Conclusions**

17   **Q.**   **On page 61 of his Direct Testimony, Dr. Morin concluded that his recommended**
18   **ROE for DEK is "highly conservative and barebones". Do you believe that DEK**
19   **should receive a higher ROE due to the risk factors described by Dr. Morin later**
20   **in his testimony?**

21   A.   No. My review of Duke Kentucky's current credit ratings suggests that DEK does not

22   merit any additional increment to its ROE for alleged additional risk. As I stated in

23   Section II, Duke Kentucky's current credit ratings are A- from Standard and Poor's

24   and Baa1 from Moody's. These current ratings are consistent with current industry

25   credit ratings and demonstrate that DEK is a strong, investment grade utility company.

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1   Nothing in these credit ratings support adding an additional increment to the

2   Company's ROE compared to the proxy group used by Dr. Morin and myself.

3 **Q.** **Should the Commission give DEK a higher authorized ROE because of its**
4   **ongoing construction program?**

5 **A.** No. The Commission already provides the Company the opportunity to file its rate

6   case using a future test period, which in this case includes the 12-month period ending

7   March 31, 2021. DEK can include forecasted capital investments up to that date,

8   which assists the Company in mitigating regulatory lag. It would not be fair to

9   ratepayers to inflate the ROE to cover DEK's future investments that have yet to be

10   reviewed by the Commission for prudence and for being used and useful. If the

11   Company's ongoing construction program causes its ROE to decline in the future, it

12   can always file a rate case with the Commission to address the situation.

13 **Q.** **Should the Commission allow a higher ROE to Duke Kentucky due to its small**
14   **size?**

15 **A.** No. Dr. Morin provided no evidence to suggest that a size premium applies to smaller

16   regulated utility companies, which on average are quite different from the groups of

17   companies included in the Duff and Phelps' research on size premiums. I reviewed

18   the discussion of size premiums from Chapter 7 of the *2017 SBBI Yearbook*, the source

19   I used for my historical CAPM analyses. The data from Duff and Phelps shows the

20   following betas for groups of smaller capitalization stocks[15]:

21

22   Mid-level capitalization   1.12

---

[15]   *2017 SBBI Yearbook,* Duff and Phelps, pg. 7-16.

1	Low capitalization	1.22
2	Micro-capitalization	1.35
3		
4		

5   The groups of smaller capitalization stocks have much higher betas than regulated

6   utility companies. The average beta for my proxy group is 0.60, which is far below

7   even the mid-level capitalization groups of stocks studies by Duff and Phelps. The

8   low and micro capitalization stocks have even higher betas. This shows that the many

9   unregulated stocks included in the Duff and Phelps study are far more risky than

10   regulated utilities like DEK. Moreover, as I stated earlier in my testimony, DEK's

11   credit ratings are consistent with the average S&P credit ratings for the regulated

12   electric utility industry. To conclude, I recommend that the Commission reject Dr.

13   Morin's argument regarding DEK's small size as a basis for either increasing the ROE

14   or for considering his recommendation to be conservative.

15   Q.   **Is asset concentration for Duke Kentucky a sufficient basis for a higher than**
16   **average ROE?**

17   A.   No. Once again, any additional risk from Duke Kentucky's generation mix would

18   have been factored into the Company's current credit ratings, which are A-/Baa1 as I

19   noted earlier.

20

21   Q.   **Does this conclude your Direct Testimony?**
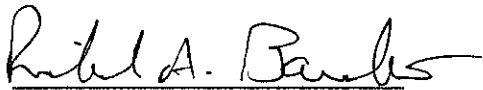
22   A.   Yes.

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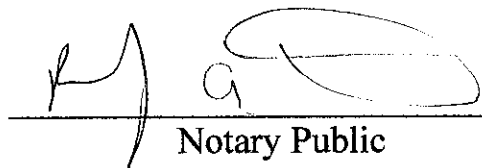
STATE OF GEORGIA)

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 (signature)
Richard A. Baudino

Sworn to and subscribed before me on this
13th day of December 20 19.
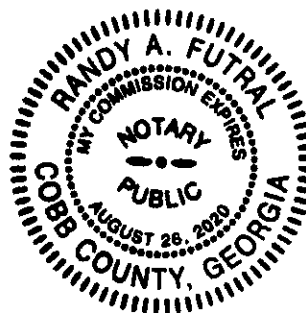
(signature)
Notary Public

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE	)	
ENERGY KENTUCKY, INC. FOR (1) AN	)	
ADJUSTMENT OF THE ELECTRIC RATES;	)	CASE NO. 2019-00271
(2) APPROVAL OF NEW TARIFFS;	)	
(3) APPROVAL OF ACCOUNTING PRACTICES	)	
TO ESTABLISH REGULATORY ASSETS AND	)	
LIABILITIES; AND (4) ALL OTHER REQUIRED	)	
APPROVALS AND RELIEF	)	

EXHIBITS

OF

RICHARD A. BAUDINO

ON BEHALF OF THE

KENTUCKY OFFICE OF THE ATTORNEY GENERAL

J. Kennedy and Associates, Inc.
570 Colonial Park Drive, Suite 305
Roswell, GA 30075

DECEMBER 13, 2019

EXHIBIT _____ (RAB-1)

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

Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019

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	Evaluation of cost allocation, rate design, rate plan, and carrying charge proposals.
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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019**

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 HealllthCare 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.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Richard A. Baudino
As of December 2019**

Date	Case	Jurisdict.	Party	Utility	Subject
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T	WV	West Virginia Energy Users Group	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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Date	Case	Jurisdict.	Party	Utility	Subject
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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**Expert Testimony Appearances
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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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Date	Case	Jurisdict.	Party	Utility	Subject
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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**Expert Testimony Appearances
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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

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
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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

J. KENNEDY AND ASSOCIATES, INC.

EXHIBIT ____ (RAB-2)

November 8, 2019

THIRD QUARTER 2019

Duke Energy Earnings Review & Business Update

Lynn Good   *Chairman, President & CEO*
Steve Young   *Executive Vice President & CFO*

DUKE ENERGY.

BUILDING A SMARTER ENERGY FUTURE ®

Our investor value proposition

DUKE ENERGY.

DUK
LISTED
NYSE

A SOLID LONG-TERM HOLDING

4.0%

DIVIDEND YIELD[1]
WITH DIVIDEND
**GROWTH
COMMITMENT**[2]

~8-10%

ATTRACTIVE
RISK-ADJUSTED
**TOTAL SHAREHOLDER
RETURN**[3]

4-6%

HIGHLY
ACHIEVABLE
**EPS GROWTH
THROUGH 2023**[4]

CONSTRUCTIVE JURISDICTIONS, LOW-RISK REGULATED INVESTMENTS AND BALANCE SHEET STRENGTH

(1) *As of November 6, 2019*
(2) *Subject to approval by the Board of Directors*
(3) *Total shareholder return proposition at a constant P/E ratio*
(4) *Based on adjusted diluted EPS off the midpoint of the original 2019 guidance range, or $5.00*

2019 long-term debt and preferred stock financing activity as of September 30, 2019

Amount ($ in millions)	Entity	Date Issued	Credit Ratings (M/S&P/F, unless otherwise noted)	Term	Type	Rate
$400	DE Ohio	January 2019	A2/A	10-Year	First Mortgage Bond	Fixed – 3.65%
$400	DE Ohio	January 2019	A2/A	30-Year	First Mortgage Bond	Fixed – 4.30%
$650	DE Progress	Jan. & Feb. 2019	A2/A-[1]	2-Year	Term Loan	Floating
$600	DE Progress	March 2019	Aa3/A	10-year	First Mortgage Bond	Fixed – 3.45%
$300	DE Corp.	March 2019	Baa1/BBB+	3-Year	Senior Unsecured Notes	Fixed – 3.227%
$300	DE Corp.	March 2019	Baa1/BBB+	3-Year	Senior Unsecured Notes	Floating
$1,000	DE Corp.	March 2019	Baa3/BBB/BBB-	Perpetual	Preferred Stock	Fixed – 5.75%
$600	Piedmont	May 2019	A3/A-	10-Year	Senior Unsecured Notes	Fixed – 3.50%
$600	DE Corp.	June 2019	Baa1/BBB+/BBB+	10-Year	Senior Unsecured Notes	Fixed – 3.40%
$600	DE Corp.	June 2019	Baa1/BBB+/BBB+	30-Year	Senior Unsecured Notes	Fixed – 4.20%
$40	DE Kentucky	June 2019	N/A [2]	30-Year	Debentures	Fixed – 4.32%
$75	DE Kentucky	Sept 2019	N/A [2]	10-Year	Debentures	Fixed – 3.56%
$95	DE Kentucky	Sept 2019	N/A [2]	6-Year	Debentures	Fixed – 3.23%
$450	DE Carolinas	August 2019	Aa2/A	10-Year	First Mortgage Bond	Fixed – 2.45%
$350	DE Carolinas	August 2019	Aa2/A	30-Year	First Mortgage Bond	Fixed – 3.20%
$500	DE Indiana	Sept 2019	Aa3/A	30-Year	First Mortgage Bond	Fixed – 3.25%
$1,000	DE Corp.	Sept 2019	Baa3/BBB/BBB-	Perpetual	Preferred Stock	Fixed – 4.875%

(1) Represents the Issuer/Corporate Credit Ratings
(2) Issuance privately placed

EXHIBIT _____ (RAB-3)

DUKE ENERGY KENTUCKY PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Alliant Energy	High Price ($)	50.170	50.950	53.000	54.590	54.430	53.670
	Low Price ($)	46.840	48.480	48.770	50.360	51.580	50.930
	Avg. Price ($)	48.505	49.715	50.885	52.475	53.005	52.300
	Dividend ($)	0.355	0.355	0.355	0.355	0.355	0.355
	Mo. Avg. Div.	2.93%	2.86%	2.79%	2.71%	2.68%	2.72%
	6 mos. Avg.	2.78%					
Ameren Corp.	High Price ($)	77.770	77.280	77.520	80.850	80.050	77.920
	Low Price ($)	72.950	74.230	73.670	73.310	75.260	73.340
	Avg. Price ($)	75.360	75.755	75.595	77.080	77.655	75.630
	Dividend ($)	0.475	0.475	0.475	0.475	0.475	0.475
	Mo. Avg. Div.	2.52%	2.51%	2.51%	2.46%	2.45%	2.51%
	6 mos. Avg.	2.49%					
Avista Corp.	High Price ($)	45.060	46.640	47.330	49.330	48.790	48.420
	Low Price ($)	41.870	44.010	44.020	46.650	47.090	45.960
	Avg. Price ($)	43.465	45.325	45.675	47.990	47.940	47.190
	Dividend ($)	0.388	0.388	0.388	0.388	0.388	0.388
	Mo. Avg. Div.	3.57%	3.42%	3.39%	3.23%	3.23%	3.28%
	6 mos. Avg.	3.35%					
Black Hills	High Price ($)	82.010	81.260	80.610	78.870	79.570	79.840
	Low Price ($)	75.630	77.140	70.150	74.060	74.910	73.940
	Avg. Price ($)	78.820	79.200	75.380	76.465	77.240	76.890
	Dividend ($)	0.505	0.505	0.505	0.505	0.505	0.535
	Mo. Avg. Div.	2.56%	2.55%	2.68%	2.64%	2.62%	2.78%
	6 mos. Avg.	2.64%					
CenterPoint Energy	High Price ($)	30.240	29.720	29.480	30.710	30.320	29.280
	Low Price ($)	28.150	28.260	27.160	27.620	27.880	24.250
	Avg. Price ($)	29.195	28.990	28.320	29.165	29.100	26.765
	Dividend ($)	0.288	0.288	0.288	0.288	0.288	0.288
	Mo. Avg. Div.	3.94%	3.97%	4.06%	3.94%	3.95%	4.30%
	6 mos. Avg.	4.03%					
Chesapeake Utilities	High Price ($)	95.990	96.270	95.960	97.000	96.100	96.220
	Low Price ($)	90.470	89.580	89.440	92.150	91.710	86.650
	Avg. Price ($)	93.230	92.925	92.700	94.575	93.905	91.435
	Dividend ($)	0.405	0.405	0.405	0.405	0.405	0.405
	Mo. Avg. Div.	1.74%	1.74%	1.75%	1.71%	1.73%	1.77%
	6 mos. Avg.	1.74%					
CMS Energy Corp.	High Price ($)	59.340	59.540	63.310	65.310	65.020	64.140
	Low Price ($)	55.370	57.060	57.430	60.100	62.320	59.330
	Avg. Price ($)	57.355	58.300	60.370	62.705	63.670	61.735
	Dividend ($)	0.383	0.383	0.383	0.383	0.383	0.383
	Mo. Avg. Div.	2.67%	2.62%	2.53%	2.44%	2.40%	2.48%
	6 mos. Avg.	2.52%					

DUKE ENERGY KENTUCKY PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
Consolidated Edison	High Price ($)	90.510	89.770	89.110	94.970	94.930	92.410
	Low Price ($)	85.550	84.420	84.450	88.580	90.260	85.670
	Avg. Price ($)	88.030	87.095	86.780	91.775	92.595	89.040
	Dividend ($)	0.740	0.740	0.740	0.740	0.740	0.740
	Mo. Avg. Div.	3.36%	3.40%	3.41%	3.23%	3.20%	3.32%
	6 mos. Avg.	3.32%					
Dominion Energy	High Price ($)	79.470	78.720	78.080	81.430	83.230	83.930
	Low Price ($)	73.540	73.460	73.760	76.050	78.950	79.520
	Avg. Price ($)	76.505	76.090	75.920	78.740	81.090	81.725
	Dividend ($)	0.918	0.918	0.918	0.918	0.918	0.918
	Mo. Avg. Div.	4.80%	4.82%	4.83%	4.66%	4.53%	4.49%
	6 mos. Avg.	4.69%					
DTE Energy Co.	High Price ($)	131.870	132.090	131.730	134.370	133.390	127.930
	Low Price ($)	123.910	126.180	124.930	127.160	123.410	120.080
	Avg. Price ($)	127.890	129.135	128.330	130.765	128.400	124.005
	Dividend ($)	0.945	0.945	0.945	0.945	0.945	0.945
	Mo. Avg. Div.	2.96%	2.93%	2.95%	2.89%	2.94%	3.05%
	6 mos. Avg.	2.95%					
Duke Energy Corp.	High Price ($)	90.680	90.600	93.350	96.800	97.370	94.550
	Low Price ($)	84.280	86.170	86.310	92.330	93.330	86.360
	Avg. Price ($)	87.480	88.385	89.830	94.565	95.350	90.455
	Dividend ($)	0.928	0.928	0.945	0.945	0.945	0.945
	Mo. Avg. Div.	4.24%	4.20%	4.21%	4.00%	3.96%	4.18%
	6 mos. Avg.	4.13%					
Eversource Energy	High Price ($)	77.870	78.530	81.150	85.930	86.550	83.980
	Low Price ($)	72.860	74.770	75.480	79.870	82.210	78.580
	Avg. Price ($)	75.365	76.650	78.315	82.900	84.380	81.280
	Dividend ($)	0.535	0.535	0.535	0.535	0.535	0.535
	Mo. Avg. Div.	2.84%	2.79%	2.73%	2.58%	2.54%	2.63%
	6 mos. Avg.	2.69%					
Exelon Corp.	High Price ($)	51.180	49.800	47.470	49.320	48.580	45.920
	Low Price ($)	47.380	44.900	43.690	46.640	43.420	43.810
	Avg. Price ($)	49.280	47.350	45.580	47.980	46.000	44.865
	Dividend ($)	0.363	0.363	0.363	0.363	0.363	0.363
	Mo. Avg. Div.	2.95%	3.07%	3.19%	3.03%	3.16%	3.24%
	6 mos. Avg.	3.10%					
Fortis	High Price ($)	52.900	55.310	56.790	56.940	55.360	52.570
	Low Price ($)	51.440	51.620	54.700	53.240	51.650	51.730
	Avg. Price ($)	52.170	53.465	55.745	55.090	53.505	52.150
	Dividend ($)	0.450	0.450	0.450	0.450	0.450	0.478
	Mo. Avg. Div.	3.45%	3.37%	3.23%	3.27%	3.36%	3.66%
	6 mos. Avg.	3.39%					

DUKE ENERGY KENTUCKY PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19
MGE Energy	High Price ($)	76.440	75.690	76.890	80.840	80.310	80.730
	Low Price ($)	65.960	70.810	71.700	72.800	73.770	72.350
	Avg. Price ($)	71.200	73.250	74.295	76.820	77.040	76.540
	Dividend ($)	0.338	0.338	0.353	0.353	0.353	0.353
	Mo. Avg. Div.	1.90%	1.85%	1.90%	1.84%	1.83%	1.84%
	6 mos. Avg.	1.86%					
NorthWestern Corp.	High Price ($)	74.470	73.810	72.660	76.720	76.180	73.340
	Low Price ($)	70.200	69.500	67.360	71.630	70.950	68.030
	Avg. Price ($)	72.335	71.655	70.010	74.175	73.565	70.685
	Dividend ($)	0.575	0.575	0.575	0.575	0.575	0.575
	Mo. Avg. Div.	3.18%	3.21%	3.29%	3.10%	3.13%	3.25%
	6 mos. Avg.	3.19%					
Public Svc. Enterprise Gp.	High Price ($)	61.500	61.350	60.870	62.600	63.880	63.680
	Low Price ($)	58.220	56.810	55.270	60.000	60.880	58.930
	Avg. Price ($)	59.860	59.080	58.070	61.300	62.380	61.305
	Dividend ($)	0.470	0.470	0.470	0.470	0.470	0.470
	Mo. Avg. Div.	3.14%	3.18%	3.24%	3.07%	3.01%	3.07%
	6 mos. Avg.	3.12%					
Sempra Energy	High Price ($)	141.860	141.290	142.910	148.140	148.900	148.660
	Low Price ($)	130.520	134.560	131.320	139.030	140.340	141.080
	Avg. Price ($)	136.190	137.925	137.115	143.585	144.620	144.870
	Dividend ($)	0.968	0.968	0.968	0.968	0.968	0.968
	Mo. Avg. Div.	2.84%	2.81%	2.82%	2.70%	2.68%	2.67%
	6 mos. Avg.	2.75%					
WEC Energy Group	High Price ($)	85.700	87.930	96.460	98.190	96.290	94.730
	Low Price ($)	79.460	82.180	85.160	89.020	91.510	86.500
	Avg. Price ($)	82.580	85.055	90.810	93.605	93.900	90.615
	Dividend ($)	0.590	0.590	0.590	0.590	0.590	0.590
	Mo. Avg. Div.	2.86%	2.77%	2.60%	2.52%	2.51%	2.60%
	6 mos. Avg.	2.65%					
Xcel Energy Inc.	High Price ($)	61.970	62.030	64.910	66.050	65.140	63.860
	Low Price ($)	56.370	58.800	58.740	62.190	62.180	59.460
	Avg. Price ($)	59.170	60.415	61.825	64.120	63.660	61.660
	Dividend ($)	0.405	0.405	0.405	0.405	0.405	0.405
	Mo. Avg. Div.	2.74%	2.68%	2.62%	2.53%	2.54%	2.63%
	6 mos. Avg.	2.62%					
Monthly Avg. Dividend Yield		3.06%	3.04%	3.04%	2.93%	2.92%	3.02%
6-month Avg. Dividend Yield		3.00%					

Source: Yahoo! Finance

EXHIBIT ____ (RAB-4)

DUKE ENERGY KENTUCKY PROXY GROUP
DCF Growth Rate Analysis

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Zacks	(4) Yahoo! Finance
1 Alliant Energy	5.50%	6.50%	5.49%	5.00%
2 Ameren Corp.	6.00%	6.50%	6.16%	4.70%
3 Avista	4.00%	3.50%	3.32%	3.40%
4 Black Hills	6.50%	5.00%	4.27%	3.66%
5 CenterPoint Energy	2.50%	12.50%	4.76%	4.10%
6 Chesapeake Utilities	9.00%	9.00%	7.00%	6.00%
7 CMS Energy Corp.	7.00%	7.00%	6.42%	7.50%
8 Consolidated Edison	3.50%	3.00%	2.00%	2.78%
9 Dominion Energy	5.00%	6.50%	4.81%	4.46%
10 DTE Energy Co.	6.00%	5.50%	6.00%	4.83%
11 Duke Energy Corp.	2.50%	6.00%	4.84%	4.65%
12 Eversource Energy	5.50%	5.50%	5.63%	5.60%
13 Exelon Corp.	5.50%	9.00%	4.50%	-2.67%
14 Fortis	6.00%	4.00%	5.68%	N/A
15 MGE Energy	5.00%	6.00%	N/A	4.00%
16 NorthWestern Corp.	4.50%	3.00%	2.73%	3.20%
17 Pub Sv Enterprise Grp.	5.00%	6.00%	3.69%	3.70%
18 Sempra Energy	8.00%	11.00%	7.73%	9.75%
19 WEC Energy Group	6.00%	6.00%	6.14%	6.15%
20 Xcel Energy Inc.	6.00%	5.50%	5.42%	5.20%
Averages Excluding Negatives	5.45%	6.35%	5.08%	4.93%
Median Excluding Negatives	5.50%	6.00%	5.42%	4.68%

Sources: **Value Line Investment Survey, Sept. 13, Oct. 25, and Nov. 15, 2019**
Yahoo! Finance growth rates retrieved November 22, 2019
Zacks growth rates retrieved November 22, 2019

DUKE ENERGY KENTUCKY 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	3.00%	3.00%	3.00%	3.00%	3.00%
Average Growth Rate	5.45%	6.35%	5.08%	4.93%	5.45%
Expected Div. Yield	3.08%	3.10%	3.08%	3.07%	3.08%
DCF Return on Equity	*8.53%*	*9.45%*	*8.16%*	*8.00%*	*8.53%*
Method 2:					
Dividend Yield	3.00%	3.00%	3.00%	3.00%	3.00%
Median Growth Rate	5.50%	6.00%	5.42%	4.68%	5.40%
Expected Div. Yield	3.08%	3.09%	3.08%	3.07%	3.08%
DCF Return on Equity	*8.58%*	*9.09%*	*8.50%*	*7.75%*	*8.48%*

EXHIBIT ____ (RAB-5)

DUKE ENERGY KENTUCKY PROXY GROUP
Capital Asset Pricing Model Analysis

30-Year Treasury Bond, Value Line Beta

Line No.		
1	Market Required Return Estimate	11.42%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	2.32%
4	Risk Premium	
5	(Line 1 minus Line 3)	9.10%
6	Proxy Group Average Beta	0.60
7	Proxy Group Beta * Risk Premium	
8	(Line 5 * Line 6)	5.42%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.73%

Duff and Phelps Normalized Risk-free Rate

1	Market Required Return Estimate	11.42%
2	Duff and Phelps Normalized Risk-free Rate	3.00%
3	Risk Premium	
4	(Line 1 minus Line 2)	8.42%
5	Proxy Group Beta	0.60
6	Proxy Group Beta * Risk Premium	
7	(Line 5 * Line 6)	5.01%
8	CAPM Return on Equity	
9	(Line 2 plus Line 7)	8.01%

DUKE ENERGY KENTUCKY PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data

	Avg. Yield
June-19	2.57%
July-19	2.57%
August-19	2.12%
September-19	2.16%
October-19	2.19%
November-19	2.28%
6 month average	2.32%

Source: www.federalreserve.gov

Value Line Market Return Data:

Forecasted Data:

Value Line Median Growth Rates:	
Earnings	11.00%
Book Value	8.00%
Average	9.50%
Average Dividend Yield	1.08%
Estimated Market Return	10.63%

Value Line Projected 3-5 Yr.	
Median Annual Total Return	11.00%
Average Annual Total Return	13.41%
Average	12.21%

Average of Projected Mkt. Returns	11.42%

Source: Value Line Investment Survey
for Windows retreived Nov. 20, 2019

Proxy Group Betas:	Value Line
Alliant Energy	0.60
Ameren Corp.	0.55
Avista	0.60
Black Hills	0.70
CenterPoint Energy	0.80
Chesapeake Utilities	0.65
CMS Energy Corp.	0.55
Consolidated Edison	0.45
Dominion Energy	0.55
DTE Energy Co.	0.55
Duke Energy Corp.	0.50
Eversource Energy	0.55
Exelon Corp.	0.65
Fortis	0.65
MGE Energy	0.55
NorthWestern Corp.	0.60
Pub Sv Enterprise Grp.	0.65
Sempra Energy	0.75
WEC Energy Group	0.50
Xcel Energy Inc.	0.50
Average	0.60

EXHIBIT _____ (RAB-6)

DUKE ENERGY KENTUCKY 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	11.90%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	5.00%	
Historical Market Risk Premium	6.90%	6.14%
Proxy Group Beta, Value Line	0.60	0.60
Beta * Market Premium	4.11%	3.65%
Current 30-Year Treasury Bond Yield	2.32%	2.32%
CAPM Cost of Equity, Value Line Beta	**6.42%**	**5.97%**
CAPM with D&P Normalized Risk-Free Rate		
Historical Market Risk Premium	6.90%	6.14%
Proxy Group Beta, Value Line	0.60	0.60
Beta * Market Premium	4.11%	3.65%
D&P Normalized Risk-Free Rate	3.00%	3.00%
CAPM Cost of Equity, Normalized Risk-Free Rate	**7.11%**	**6.65%**

SOAH DOCKET NO. 473-19-4421
PUC DOCKET NO. 49494

APPLICATION OF AEP TEXAS INC.	§	BEFORE THE STATE OFFICE
FOR AUTHORITY TO CHANGE	§	OF
RATES	§	ADMINISTRATIVE HEARINGS

DIRECT TESTIMONY

OF

RICHARD A. BAUDINO

ON BEHALF OF

THE CITIES SERVED BY AEP TEXAS

JULY 25, 2019

TABLE OF CONTENTS

ATTACHMENTS

A –   Resume and Testimony Appearances

B –   AEP Texas' Response to Cities RFI No. 3-1 (S&P's Ratings Direct Report, AEP Texas Inc., March 26, 2019)

C –   American Electric Power *Boundless Energy* Presentation, May 2019 (excerpt)

D –   AEP Texas' Response to Cities RFI No. 3-12

SCHEDULES

RB-1   AEP Proxy Group Dividend Yield

RB-2   AEP Proxy Group Growth Rates and DCF Return on Equity

RB-3   Capital Asset Pricing Model – Current Market Return

RB-4   Capital Asset Pricing Model – Historical Risk Premium

RB-5   Proxy Group 2018 Common Equity Ratios

WORKPAPERS – Provided on CD

I.   QUALIFICATIONS AND SUMMARY

A.   Qualifications

1   **Q.   PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A.   My name is Richard A. Baudino, a Consultant with J. Kennedy and Associates, Inc., an economic consulting firm specializing in utility ratemaking and planning issues. My business address is 570 Colonial Park Drive, Suite 305, Roswell, Georgia.

Q.   PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A.   I provide this information in Attachment A, including a list of my testimony experience.

B.   Summary

Q.   ON WHOSE BEHALF ARE YOU PROVIDING TESTIMONY IN THIS PROCEEDING?

A.   I am providing testimony on behalf of the Cities Served by AEP Texas (Cities).

Q.   WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A.   The purpose of my testimony is to make recommendations with respect to the return on equity (ROE) and capital structure for AEP Texas Inc. (AEP Texas or Company).

Q.   PLEASE SUMMARIZE YOUR RECOMMENDATIONS TO THE PUBLIC UTILITY COMMISSION OF TEXAS (COMMISSION).

A.   Based on my analysis in this case, I recommend a 9.2% ROE for AEP Texas. I base my recommendation on the results of the Discounted Cash Flow (DCF) model for a proxy group of 22 electric companies. I also included two Capital Asset Pricing Model (CAPM) analyses for additional information and evaluation. I did not incorporate the results of the CAPM in my recommendation in this proceeding; however, the results from the CAPM generally confirm the reasonableness of my 9.2% ROE

1   recommendation for AEP Texas. Finally, I provide an analysis of recent Commission-

2   authorized ROEs to provide the Commission additional information regarding the

3   reasonableness of my ROE recommendation as well as a comparison to Mr. Hevert's

4   recommended ROE of 10.5%.

5   As I shall explain later in my testimony, a 9.2% ROE is a reasonable estimate

6   of the investor-required return on equity for a low risk transmission and distribution

7   utility company like AEP Texas. Furthermore, in the current low-interest rate

8   environment, a 9.2% ROE is fully justified and supported considering the recent

9   declines in the general level of interest rates in the economy, as well as the possibility

10   of future cuts in the Federal Funds Rate by the Federal Reserve Board (Fed). Finally,

11   my recommendation also recognizes and considers recently allowed ROEs from state

12   commissions around the country.

13   I also recommend that the Commission approve AEP Texas' current ratemaking

14   capital structure that includes 40% common equity and 60% debt. This ratemaking

15   capital structure has supported the Company's currently strong credit ratings and is

16   likely to continue to do so. The Commission should reject the Company's requested

17   increase in its equity ratio to 45%.

18   **II.   REVIEW OF ECONOMIC AND FINANCIAL CONDITIONS**

19   **Q.   MR. BAUDINO, WHAT HAS THE TREND BEEN IN LONG-TERM CAPITAL**

20   **COSTS OVER THE LAST 10 YEARS?**

21   A.   Since 2007 and 2008, the overall trend in interest rates in the U.S. and the world

22   economy has been lower. This trend was precipitated by the 2007 financial crisis and

23   severe recession that followed in December 2007. In response to this economic crisis,

24   the Fed undertook an unprecedented series of steps to stabilize the economy, ease credit

1   conditions, and lower unemployment and interest rates. These steps are commonly

2   known as Quantitative Easing (QE) and were implemented in three distinct stages:

3   QE1, QE2, and QE3. The Fed's stated purpose of QE was "to support the liquidity of

4   financial institutions and foster improved conditions in financial markets."[1]

5   **Q.   MR. BAUDINO, BEFORE YOU CONTINUE, PLEASE PROVIDE A BRIEF**

6   **EXPLANATION OF HOW THE FED USES MONETARY POLICY TO**

7   **AFFECT CONDITIONS IN THE FINANCIAL MARKETS.**

8   A.   Generally, the Fed uses monetary policy to implement certain economic goals. The

9   Fed explained its monetary policy as follows:

10   Monetary policy in the United States comprises the Federal Reserve's
11   actions and communications to promote maximum employment, stable
12   prices, and moderate long-term interest rates--the three economic goals
13   the Congress has instructed the Federal Reserve to pursue.

14   The Federal Reserve conducts the nation's monetary policy by
15   managing the level of short-term interest rates and influencing the
16   overall availability and cost of credit in the economy.[2]

17   One of the Fed's primary tools for conducting monetary policy is setting the Federal

18   Funds Rate. The Federal Funds Rate is the interest rate set by the Fed that banks and

19   credit unions charge each other for overnight loans of reserve balances. Traditionally

20   the federal funds rate directly influences short-term interest rates, such as the Treasury

21   bill rate and interest rates on savings and checking accounts. The Federal Funds Rate

22   has a more indirect effect on long-term interest rates, such as the 30-Year Treasury

23   Bond and private and corporate long-term debt. Long-term interest rates are set more

24   by market forces that influence the supply and demand of loanable funds.

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[1]   Federal Reserve System, http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm (last updated Feb. 23, 2017).

[2]   Monetary Policy, Federal Reserve System, http://www.federalreserve.gov/monetarypolicy.htm (last updated Jul. 17, 2019).

1   **Q.   PLEASE CONTINUE WITH YOUR DISCUSSION OF THE FED'S**

2   **QUANTITATIVE EASING PROGRAMS.**

3   A.   QE1 was implemented from November 2008 through approximately March 2010.

4   During this time, the Fed cut its key Federal Funds Rate to nearly 0% and purchased

5         $1.25 trillion of mortgage-backed securities and $175 billion of agency debt purchases.

6   QE2 was implemented in November 2010 with the Fed announcing that it would

7   purchase an additional $600 billion of Treasury securities by the second quarter of

8   2011.[3] Beginning in September 2011, the Fed initiated a "maturity extension program"

9   in which it sold or redeemed $667 billion of shorter-term Treasury securities and used

10   the proceeds to buy longer-term Treasury securities. This program, also known as

11   "Operation Twist," was designed by the Fed to lower long-term interest rates and

12   support economic recovery. Finally, QE3 began in September 2012 with the Fed

13   announcing an additional bond purchasing program of $40 billion per month of agency

14   mortgage backed securities.

15   The Fed began to pare back its purchases of securities over the last few years.

16   On January 29, 2014, the Fed stated that beginning in February 2014 it would reduce

17   its purchases of long-term Treasury securities to $35 billion per month. The Fed

18   continued to reduce these purchases throughout the year and in a press release issued

19   October 29, 2014 announced that it decided to close this asset purchase program in

20   October.[4]

21   Figure 1 below presents a graph that tracks the 30-Year Treasury Bond yield

22   and the Mergent average utility bond yield over the time period January 2008 through

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[3]   FOMC Statement, Federal Reserve System, http://www.federalreserve.gov/newsevents/
pressreleases/monetary20101103a.htm (last updated Nov. 3, 2010).

[4]   Federal Reserve Issues FOMC Statement, Federal Reserve System, http://www.federalreserve.gov/
newsevents/pressreleases/monetary20141029a.htm (last updated Oct. 29, 2014).

1   June 2019. The June 2019 yield on the 30-Year Treasury Bond stands at 2.57% and

2   the yield on the Mergent average utility bond is 3.93%.

3

FIGURE 1
HISTORICAL BOND YIELDS
AVERAGE PUBLIC UTILITY BOND VS 30-YEAR TREASURY BOND
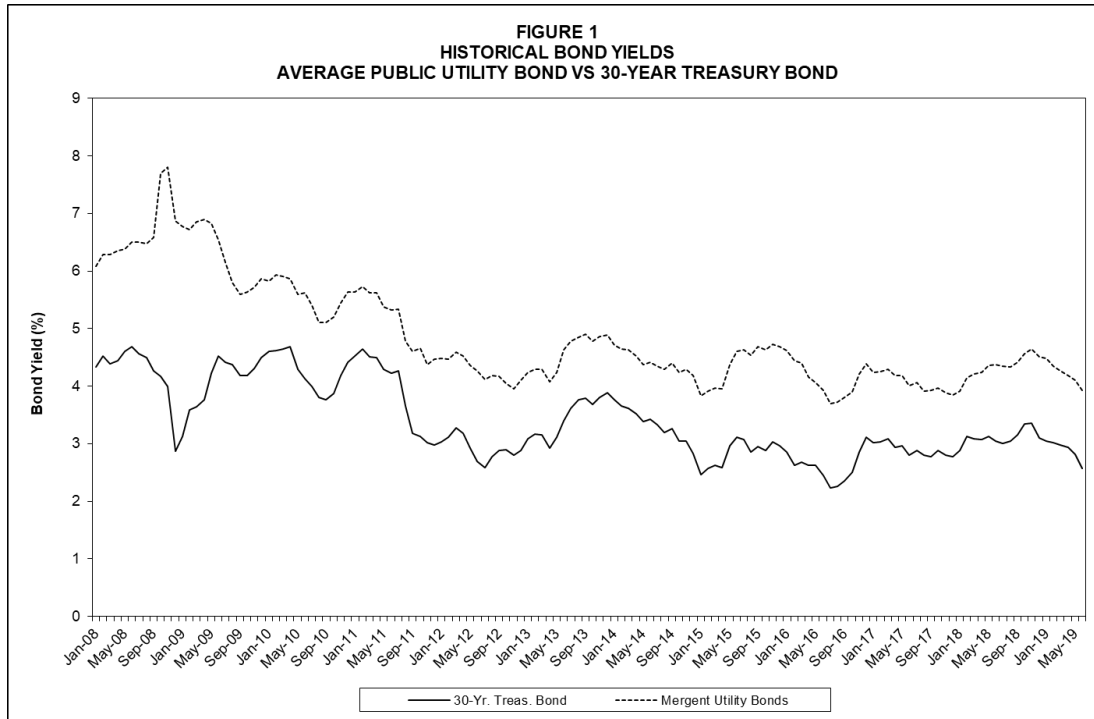
4

5   **Q.**   **HAS THE FED RECENTLY INDICATED ANY IMPORTANT CHANGES TO**

6   **ITS MONETARY POLICY?**

7   **A.**   Yes. In December 2015, the Fed began to raise its target range for the Federal Funds

8   Rate. With the most recent increase announced on December 19, 2018, the Federal

9   Funds Rate now stands in the range of 2.25% – 2.5%.

10   More recently, however, there has been a significant shift in the approach of the

11   Fed to its policy of increasing the Federal Funds Rate. The increases that the Fed had

12   planned in 2019 have been put on hold due to economic conditions in the United States

13   as well as the rest of the world. In its June 19, 2019 press release, the Fed stated the

14   following:

1   Consistent with its statutory mandate, the Committee seeks to foster
2   maximum employment and price stability. In support of these goals, the
3   Committee decided to maintain the target range for the federal funds
4   rate at 2-1/4 to 2-1/2 percent. The Committee continues to view
5   sustained expansion of economic activity, strong labor market
6   conditions, and inflation near the Committee's symmetric 2 percent
7   objective as the most likely outcomes, but uncertainties about this
8   outlook have increased. In light of these uncertainties and muted
9   inflation pressures, the Committee will closely monitor the implications
10   of incoming information for the economic outlook and will act as
11   appropriate to sustain the expansion, with a strong labor market and
12   inflation near its symmetric 2 percent objective.[5]

13   Fed Chairman Jerome Powell indicated in his recent remarks before Congress that the

14   Fed is ready to pursue rate cuts due to concerns about the U.S. and global economic

15   outlook. The *Wall Street Journal* reported on July 10, 2019 that "Federal Reserve

16   Chairman Jerome Powell signaled the central bank is ready to cut interest rates later

17   this month to cushion the U.S. economy against the risks of slower growth and trade

18   policy uncertainty."[6]

19   With low inflation and concerns regarding slowing growth in the United States,

20   China, and Europe, I conclude that it is highly unlikely that the Fed will increase

21   interest rates for the foreseeable future and could very well cut rates in the near future.

22   **Q.   WHAT ARE THE FED'S MOST RECENT ECONOMIC PROJECTIONS**

23   **WITH RESPECT TO THE FEDERAL FUNDS RATE AND INFLATION?**

24   A.   The Fed provided certain economic projections that accompanied its June 19, 2019

25   press release showing the following:

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[5]   Federal Reserve Issues FOMC Statement, Federal Reserve System, https://www.federalreserve.gov/newsevents/pressreleases/monetary20190619a.htm (last updated Jun. 19, 2019).

[6]   Nick Timiraos, Jerome Powell Says Outlook Hasn't Improved in Recent Weeks, Setting Stage for Rate Cut, July 10, 2019, https://wsj.com/articles/powell-says-outlook-hasn't-improved-in-recent-weeks-setting-stage-for-rate-cut-11562761822.

- Projected Federal Funds Rate of 2.4% for 2019, 2.1% for 2020, 2.4% for 2021, and 2.5% for the longer run.

- Inflation running at 1.8% for 2019, 1.9% for 2020, and 2.0% for 2021.[7]

Q. **MR. BAUDINO, WHY IS IT IMPORTANT TO UNDERSTAND THE FED'S ACTIONS OVER THE LAST FEW YEARS?**

A. The Fed's monetary policy actions since 2008 were deliberately undertaken to lower interest rates and support economic recovery. Even with several recent increases in the Federal Funds Rate, the U.S. economy is still in a low interest rate environment. This environment has persisted for the last several years and is likely to continue given the expectations of interest rate cuts by the Fed later this year. *The current low interest rate environment is in no way a short-term, anomalous market aberration given its current duration and likely continuation.*

This environment has affected the common stocks of regulated utilities, which are interest rate sensitive due to their high concentration of fixed assets. What this means is that as interest rates increase in the general economy, the prices of utility common stocks fall and their dividend yields rise. Alternatively, as interest rates fall, the dividend yields on utility common stocks tend to fall as their prices rise.

Q. **ARE CURRENT INTEREST RATES INDICATIVE OF INVESTOR EXPECTATIONS REGARDING THE FUTURE DIRECTION OF INTEREST RATES?**

A. Yes. Securities markets are efficient and most likely reflect investors' expectations about future interest rates. As Dr. Roger Morin pointed out in *New Regulatory Finance:*

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[7] Federal Reserve System, Chair's FOMC Press Conference Projections Materials (2019), https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20190619.pdf.

1   A considerable body of empirical evidence indicates that U.S. capital
2   markets are efficient with respect to a broad set of information,
3   including historical and publicly available information.[8]

4   Dr. Morin also noted the following:

5   There is extensive literature concerning the prediction of interest rates.
6   From this evidence, it appears that the no-change model of interest rates
7   frequently provides the most accurate forecasts of future interest rates
8   while at other times, the experts are more accurate. Naïve extrapolations
9   of current interest rates frequently outperform published forecasts. The
10   literature suggests that on balance, the bond market is very efficient in
11   that it is difficult to consistently forecast interest rates with greater
12   accuracy than a no-change model. The latter model provides similar,
13   and in some cases, superior accuracy than professional forecasts.[9]

14   The current low interest rate environment still favors lower risk, dividend paying

15   regulated utilities. It would not be advisable for utility regulators to raise ROEs in

16   anticipation of higher forecasted long-term interest rates that are not likely to occur. It

17   is important to keep in mind that forecasts of higher interest rates are not consistent

18   with the trend of falling long-term bond yields that have occurred since the beginning

19   of 2019.

20 **Q.**   **HOW HAS THE INCREASE IN THE FEDERAL FUNDS RATE SINCE 2016**

21   **AFFECTED UTILITY STOCKS IN TERMS OF BOND YIELDS AND STOCK**

22   **PRICES?**

23 A.   Table 1 shows the Federal Funds Rate, the yield on the 30-Year Treasury Bond, the

24   yield on the average utility bond, and the Dow Jones Utility Average (DJUA) from

25   January 2017 through June 2019.

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

[9]   *Id.* at 172.

TABLE 1
Bond Yields and DJUA

	Federal Funds Rate %	30-Year Treasury %	Avg. Utility Bond %	DJUA
2017				
January	0.65	3.02	4.24	668.87
February	0.66	3.03	4.25	703.16
March	0.79	3.08	4.30	697.28
April	0.90	2.94	4.19	704.35
May	0.91	2.96	4.19	726.62
June	1.04	2.80	4.01	706.91
July	1.15	2.88	4.06	726.48
August	1.16	2.80	3.92	743.24
September	1.15	2.78	3.93	723.60
October	1.15	2.88	3.97	753.20
November	1.16	2.80	3.88	770.39
December	1.30	2.77	3.85	723.37
2018				
January	1.41	2.88	3.91	699.25
February	1.42	3.13	4.15	668.81
March	1.51	3.09	4.21	692.63
April	1.69	3.07	4.24	707.01
May	1.70	3.13	4.36	695.21
June	1.82	3.05	4.37	711.64
July	1.91	3.01	4.38	724.24
August	1.91	3.04	4.33	726.41
September	1.95	3.15	4.41	720.60
October	2.19	3.34	4.56	733.84
November	2.20	3.36	4.65	741.92
December	2.27	3.10	4.51	712.93
2019				
January	2.40	3.04	4.48	727.25
February	2.40	3.02	4.35	756.34
March	2.41	2.98	4.26	778.72
April	2.42	2.94	4.18	790.00
May	2.39	2.82	4.10	784.43
June	2.38	2.57	3.93	810.66

Source: Federal Reserve, Mergent Bond Record, Yahoo! Finance

Note that although the Federal Funds Rate steadily increased from 2017 through January 2019, the 30-Year Treasury Bond yield was about the same in January 2019 as it was in January 2017. Moreover, long-term interest rates have continued to fall significantly in 2019. The 30-Year Treasury Bond yield has fallen from 3.04% in January to 2.57% in June 2019 and the average utility bond yield fell from 4.48% to 3.93% over that period as well. The DJUA Index increased by a substantial 11.5% from January through June 2019.

1 **Q. HOW DOES THE INVESTMENT COMMUNITY REGARD THE ELECTRIC**

2 **UTILITY INDUSTRY CURRENTLY?**

3 A. In the May 17, 2019 report on the Electric Utility (East) Industry, Value Line made the

4 following comments with respect to regulated utility fixed charge ratios and the Tax

5 Cut and Jobs Act (TCJA):

6 Every report in the Electric Utility Industry includes a box labeled
7 Electric Operating Statistics. This includes the fixed-charge coverage
8 for the companies. This is based on operating earnings (excluding the
9 Allowance for Funds Used During Construction, a noncash credit to
10 income). The new federal tax law that took effect in 2018 caused the
11 fixed-charge coverage to decline for most companies reviewed in The
12 Value Line Investment Survey. That's because most utilities are passing
13 the benefits of the lower federal tax rate through to their customers.
14 Thus, operating income declines, but is offset by a decline in taxes. This
15 shift causes the fixed-charge coverage to fall, all else equal. *So, the*
16 *declines in fixed-charge coverages in 2018 are not a sign that the*
17 *financial condition of companies in the Electric Utility Industry is*
18 *deteriorating.* (emphasis added)

19 Most electric utility stocks have performed well in 2019. The majority
20 of issues have risen in price by more than 10%. The market's
21 expectation of a more sanguine interest-rate environment has benefited
22 these issues. The average dividend yield of stocks in this industry is
23 3.3%. This is low, by historical standards, but still compares favorably
24 with the median yield of all dividend-paying stocks. Thus, equities in
25 this industry are still attracting investors who are ''reaching for yield.''[10]

26 Value Line also stated the following in its June 14, 2019 report on the Electric Utility

27 (Central) Industry:

28 Most electric utility equities have performed well in 2019. In an
29 environment of low interest rates, many income-oriented investors are
30 "reaching for yield." What's more, the Federal Reserve has not raised
31 interest rates so far this year, and we think a cut is possible in late 2019
32 or in 2020. This has enabled the prices of many electric utility stocks to
33 advance more than 10%. There are exceptions; CenterPoint Energy and
34 Otter Tail have not moved much this year.

35 Most of these stocks are trading within their 2022-2024 Target Price
36 Range. A few, such as ALLETE and WEC Energy Group, are actually
37 trading above this range. Moreover, many electric utility equities
38 (including every one reviewed in this week's Issue) have price-earnings

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[10] Value Line, Electric Utility (East) Industry 135 (May 17, 2019).

1   ratios well above the market multiple. This is unusual for utility stocks,
2   which historically have traded at a discount to the market. These factors
3   indicate the lofty valuations of many stocks in this industry.
4   Consequently, we think investors ought to be cautious.[11]

5 **Q.** **WHAT ARE YOUR CONCLUSIONS WITH RESPECT TO VALUE LINE'S**

6 **COMMENTS REGARDING THE ELECTRIC UTILITY INDUSTRY?**

7 A. Value Line's comments with respect to the TCJA and its effect on the fixed charge

8 ratios deserves careful consideration. Although fixed charge ratios declined as a result

9 of the law, it does not indicate deteriorating financial conditions for the industry.

10 Investors are seeking higher yields and the safety and security that utility stocks offer.

11 Further, the expectations of interest rate cuts by the Fed are making electric utility

12 stocks even more attractive to investors. Given the attractiveness of regulated utilities'

13 common stocks, I conclude that the TCJA has no lingering negative impacts on stock

14 prices.

15 **Q.** **IN 2019, THE EDISON ELECTRIC INSTITUTE (EEI) PUBLISHED ITS *2018***

16 ***FINANCIAL REVIEW* OF THE INVESTOR-OWNED ELECTRIC UTILITY**

17 **INDUSTRY.   WHAT DID EEI REPORT WITH RESPECT TO CREDIT**

18 **RATINGS FOR THE ELECTRIC UTILITY INDUSTRY IN 2018?**

19 A. EEI's report noted the following favorable credit rating summary for 2018:

20   While the industry's average credit rating at the parent company level
21   was unchanged at BBB+, the underlying data show a modest
22   strengthening in credit quality. At the parent level, six different
23   companies received upgrades and only two received downgrades. One
24   additional company was downgraded and later upgraded during 2018.
25   On December 31, 2018, 70.2% of ratings outlooks were "stable" and
26   6.4% were "positive" or "watch-positive". Only 23.4% were "negative"
27   or "watch-negative".[12]

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[11]   Value Line, Electric Utility (Central) Industry 901 (Jun. 14, 2019).

[12]   EEI, *2018 Financial Review*, 70 (2018).

1   EEI's report shows that the overall credit standing of the electric industry is still

2   quite strong, relatively stable, and has been improving over the last several years.

3   **Q.   WHAT CREDIT RATINGS ARE CURRENTLY ASSIGNED TO AEP TEXAS?**

4   A.   Moody Corporation (Moody's) currently assigns a long-term issuer rating to AEP

5   Texas of Baa1, the highest rating of Baa rating categories. Moody's credit outlook for

6   AEP Texas is stable. Standard and Poor's (S&P) assigned AEP Texas an issuer credit

7   rating of A- with a stable outlook.[13]

8   AEP Texas provided recent credit rating reports in response to Cities Third

9   Request for Information (RFI) No. 3-1. In a report on AEP Texas dated March 26,

10   2019, S&P noted the following credit strengths for the Company:[14]

11   •   Fully regulated, low-risk electric transmission and distribution (wires
12   only) operations.

13   •   Generally stable regulatory framework in Texas, which is viewed as
14   credit supportive.

15   •   Majority of customer base consisting of residential or commercial
16   customers, which provides further cash flow stability.

17   I have attached this report to my Direct Testimony as Attachment B. S&P's

18   report also pointed to AEP Texas benefitting from timely recovery of transmission and

19   distribution costs through the transmission cost of service (TCOS) rider, the

20   distribution cost recovery factor (DCRF), and energy efficiency, all of which mitigate

21   regulatory lag and "enable the company to earn close to, or at, its authorized returns."[15]

22   The S&P report assigned an Excellent Business Risk rating to AEP Texas along

23   with a Significant Financial Risk rating. The Excellent Business Risk rating is based

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[13]   Direct Testimony of Steven M. Fetter at 8; Direct Testimony of Robert B. Hevert at 17.

[14]   AEP Texas' Response to Cities RFI No. 3-1, Attachment 2. See Attachment B.

[15]   *Id*. at 3.

1   on the Company's low-risk, fully regulated transmission and distribution operations.

2   The Significant Financial Risk rating is based on S&P's expectation that AEP Texas'

3   stand-alone adjusted funds from operations (FFO) will remain in the 13.5% – 15.5% in

4   future years.[16] This rating indicates higher than average financial risk for AEP Texas.

5   However, according to S&P this additional risk is mitigated by the Company's low-

6   risk regulated operations and management of regulatory risk.

7 **Q.   DID YOU REVIEW ANY OF AMERICAN ELECTRIC POWER'S (AEP)**

8 **PRESENTATIONS TO INVESTORS?**

9 A.   Yes. I reviewed AEP's May 2019 presentation to investors entitled "Boundless

10   Energy" and have included selected pages from that presentation in my Attachment C.

11   Page 6 of this presentation presented AEP's historical growth in earnings as well as

12   total return expectations. AEP noted on page 6 that its dividend yield plus earnings per

13   share growth resulted in a 9% – 10% total return opportunity.[17] AEP also presented

14   information on recently settled rate cases for AEP operating companies in West

15   Virginia and Oklahoma on page 36 of this presentation. The settled ROEs were 9.4%

16   for Oklahoma and 9.75% for West Virginia.[18]

17 **Q.   WHAT IS YOUR CONCLUSION WITH RESPECT TO AEP TEXAS'**

18 **FINANCIAL CONDITION AND OUTLOOK?**

19 A.   AEP Texas is a financially sound, low-risk regulated utility company. Although the

20   Company is currently authorized a 40% equity ratio for ratemaking purposes, the

21   additional leverage is offset by its low-risk regulated utility business and the

---

[16]   *Id*.

[17]   See Attachment C at 2.

[18]   *Id*. at 3.

1   aforementioned riders that enable the Company to earn at or near its allowed returns.

2   Its strong current issuer ratings of Baa1/A- indicate that the Company has credit ratings

3   that are comparable to the regulated electric industry at this time.

4   **III.   DETERMINATION OF FAIR RATE OF RETURN**

5   **Q.   PLEASE DESCRIBE THE METHODS YOU EMPLOYED IN ESTIMATING A**

6   **FAIR RATE OF RETURN FOR AEP TEXAS.**

7   A.   I estimated the ROE for the Company's regulated transmission and distribution

8   operations using a DCF analysis for a proxy group of electric companies. I also

9   employed two CAPM analyses using both historical and forward-looking data.

10   **Q.   WHAT ARE THE MAIN GUIDELINES TO WHICH YOU ADHERE IN**

11   **ESTIMATING THE COST OF EQUITY FOR A FIRM?**

12   A.   Generally speaking, the estimated cost of equity should be comparable to the returns of

13   other firms with similar risk structures and should be sufficient for the firm to attract

14   capital. These are the basic standards set out by the United States Supreme Court in

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

16   *W.W. & Improv. Co. v. Public Service Comm'n*, 262 U.S. 679 (1922).

17   From an economist's perspective, the notion of "opportunity cost" plays a vital

18   role in estimating the ROE. One measures the opportunity cost of an investment equal

19   to what one would have obtained in the next best alternative. For example, let us

20   suppose that an investor decides to purchase the stock of a publicly traded electric

21   utility. That investor made the decision based on the expectation of dividend payments

22   and perhaps some appreciation in the stock's value over time; however, that investor's

23   opportunity cost is measured by what she or he could have invested in as the next best

1   alternative. That alternative could have been another utility stock, a utility bond, a

2   mutual fund, a money market fund, or any other number of investment vehicles.

3   The key determinant in deciding whether to invest, however, is based on

4   comparative levels of risk. Our hypothetical investor would not invest in a particular

5   electric company stock if it offered a return lower than other investments of similar

6   risk. The opportunity cost simply would not justify such an investment. Thus, the task

7   for the rate of return analyst is to estimate a return that is equal to the return being

8   offered by other risk-comparable firms.

9 **Q.   WHAT ARE THE MAJOR TYPES OF RISK FACED BY UTILITY**

10   **COMPANIES?**

11 A.   In general, risk associated with the holding of common stock can be separated into

12   three major categories: business risk, financial risk, and liquidity risk. Business risk

13   refers to risks inherent in the operation of the business. Volatility of the firm's sales,

14   long-term demand for its product(s), the amount of operating leverage, and quality of

15   management are all factors that affect business risk. The quality of regulation at the

16   state and federal levels also plays an important role in business risk for regulated utility

17   companies.

18   Financial risk refers to the impact on a firm's future cash flows from the use of

19   debt in the capital structure. Interest payments to bondholders represent a prior call on

20   the firm's cash flows and must be met before income is available to the common

21   shareholders. Additional debt means additional variability in the firm's earnings,

22   leading to additional risk.

23   Liquidity risk refers to the ability of an investor to quickly sell an investment

24   without a substantial price concession. The easier it is for an investor to sell an

1   investment for cash, the lower the liquidity risk will be. Stock markets, such as the

2   New York and American Stock Exchanges, help ease liquidity risk substantially.

3   Investors who own stocks that are traded in these markets know on a daily basis what

4   the market prices of their investments are and that they can sell these investments fairly

5   quickly. Many electric utility stocks are traded on the New York Stock Exchange and

6   are considered liquid investments.

7 **Q.   ARE THERE ANY INDICES AVAILABLE TO INVESTORS THAT**

8   **QUANTIFY THE TOTAL RISK OF A COMPANY?**

9 A.   Bond and credit ratings are tools that investors use to assess the risk comparability of

10   firms. Bond rating agencies such as Moody's and S&P's perform detailed analyses of

11   factors that contribute to the risk of a particular investment. The end result of their

12   analyses is a bond rating that reflects these risks. This information can then be used to

13   select a comparison group for use in the DCF model.

14   **A.   Discounted Cash Flow Model**

15 **Q.   PLEASE DESCRIBE THE BASIC DCF APPROACH.**

16 A.   The basic DCF approach is rooted in valuation theory. It is based on the premise that

17   the value of a financial asset is determined by its ability to generate future net cash

18   flows. In the case of a common stock, those future cash flows take the form of

19   dividends and appreciation in stock price. The value of the stock to investors is the

20   discounted present value of future cash flows. The general equation then is:

21

22
$$V = \frac{R}{(1+r)} + \frac{R}{(1+r)^2} + \frac{R}{(1+r)^3} + \cdots \frac{R}{(1+r)^n}$$

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

1   This is no different from determining the value of any asset from an economic

2   point of view; however, the commonly employed DCF model makes certain

3   simplifying assumptions. One is that the stream of income from the equity share is

4   assumed to be perpetual; that is, there is no salvage or residual value at the end of some

5   maturity date (as is the case with a bond). Another important assumption is that

6   financial markets are reasonably efficient; that is, they correctly evaluate the cash flows

7   relative to the appropriate discount rate, thus rendering the stock price efficient relative

8   to other alternatives. Finally, the model I employ also assumes a constant growth rate

9   in dividends. The fundamental relationship employed in the DCF method is described

10   by the formula:

11
$$k = \frac{D_1}{P_0} + g$$

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

16   Under the formula, it is apparent that "k" must reflect the investors' required

17   return. Use of the DCF method to determine an investor-required return is complicated

18   by the need to express investors' expectations relative to dividends, earnings, and book

19   value over an infinite time horizon. Financial theory suggests that stockholders

20   purchase common stock on the assumption that there will be some change in the rate

21   of dividend payments over time. I assume that the rate of growth in dividends is

22   constant over the assumed time horizon, but the model could easily handle varying

23   growth rates if I knew what they were. Finally, the relevant time frame is prospective

24   rather than retrospective.

1 Q. **WHAT WAS YOUR FIRST STEP IN CONDUCTING YOUR DCF ANALYSIS**

2   **FOR AEP TEXAS?**

3 A. My first step was to construct a proxy group of electric companies. In this case, I chose

4   to use the same proxy group of companies used by Company witness Hevert, modified

5   to eliminate El Paso Electric Company due to a recently announced agreement or

6   purchase by an investment company. Mr. Hevert described his selection criteria on

7   page 17 of his Direct Testimony. For purposes of this case, it is reasonable to proceed

8   with the proxy group of companies shown by Mr. Hevert in Table 3, page 19, of his

9   Direct Testimony, less El Paso Electric. Using the same proxy group as Mr. Hevert

10   also facilities a direct comparison of our cost of equity results free from any differences

11   in the selection of a proxy group, eliminating one area of possible disagreement

12   between us.

13   Since Mr. Hevert filed his Direct Testimony, El Paso Electric Company

14   announced on June 3, 2019 that it had entered into an agreement to be purchased by

15   Infrastructure Investments Fund, an investment vehicle managed by J.P. Morgan

16   Investment Management Inc. Because of this purchase agreement, El Paso Electric

17   Company should be removed from the proxy group.

18 Q. **WHAT WAS YOUR FIRST STEP IN DETERMINING THE DCF RETURN ON**

19   **EQUITY FOR THE PROXY GROUP OF COMPANIES?**

20 A. I first determined the current dividend yield, D_0/P_0, from the basic equation. My

21   general practice is to use six months as the most reasonable period over which to

22   estimate the dividend yield.

1 **Q.** **WHICH SIX-MONTH PERIOD DID YOU USE AND WHAT WERE THE**

2 **RESULTS?**

3 A. The six-month period I used covered the months from January through June 2019. I

4 obtained historical prices and dividends from Yahoo! Finance. The annualized

5 dividend divided by the average monthly price represents the average dividend yield

6 for each month in the period.

7 The average dividend yield for the comparison group is 3.17%. These

8 calculations are shown on Schedule RB-1.[19]

9 **Q.** **HAS THE PROXY GROUP DIVIDEND YIELD CHANGED MUCH DURING**

10 **THE SIX-MONTH PERIOD YOU EXAMINED?**

11 A. Yes. Schedule RB-1, page 4, shows that the January dividend yield for the group was

12 3.35%.[20] As of June 2019, the proxy group yield was 3.03%, a decline of 32 basis

13 points, or 0.32%. This decline in the proxy group dividend yield is consistent with the

14 decline in long-term bond yields that I presented earlier in Section II of my Direct

15 Testimony.

16 **Q.** **HAVING ESTABLISHED THE AVERAGE DIVIDEND YIELD, HOW DID**

17 **YOU DETERMINE THE INVESTORS' EXPECTED GROWTH RATE FOR**

18 **THE PROXY GROUP?**

19 A. The investors' expected growth rate, in theory, correctly forecasts the constant rate of

20 growth in dividends. The dividend growth rate is a function of earnings growth and

21 the payout ratio, neither of which is known precisely for the future. I refer to a perpetual

22 growth rate since the DCF model has no arbitrary cut-off point. I must estimate the

---

[19] Schedule RB-1.

[20] *Id*. at 4.

1   investors' expected growth rate because there is no way to know with absolute certainty

2   what investors expect the growth rate to be in the short term, much less in perpetuity.

3   For my analysis in this proceeding, I used three major sources of analysts'

4   forecasts for growth: the Value Line Investment Survey, Zacks, and Yahoo! Finance.

5   These sources are commonly relied upon in conducting DCF analyses and in gauging

6   investor expected growth in dividends and earnings.

7 **Q.   PLEASE BRIEFLY DESCRIBE VALUE LINE, ZACKS, AND YAHOO!**

8 **FINANCE.**

9 A.   The Value Line Investment Survey is a widely used and respected source of investor

10   information that covers approximately 1,700 companies in its Standard Edition and

11   several thousand in its Plus Edition. It is updated quarterly and probably represents the

12   most comprehensive of all investment information services. It provides both historical

13   and forecasted information on a number of important data elements. Value Line neither

14   participates in financial markets as a broker nor works for the utility industry in any

15   capacity of which I am aware.

16   Zacks gathers opinions from a variety of analysts on earnings growth forecasts

17   for numerous firms including regulated electric utilities. The estimates of the analysts

18   responding are combined to produce consensus average estimates of earnings growth.

19   I obtained Zacks' earnings growth forecasts from its web site.

20   Like Zacks, Yahoo! Finance also compiles and reports consensus analysts'

21   forecasts of earnings growth.

22 **Q.   WHY DID YOU RELY ON ANALYSTS' FORECASTS IN YOUR ANALYSIS?**

23 A.   Return on equity analysis is a forward-looking process. Five-year or ten-year historical

24   growth rates may not accurately represent investor expectations for future dividend and

1   earnings growth. Analysts' forecasts for earnings and dividend growth provide

2   superior proxies for the expected growth component in the DCF model than historical

3   growth rates. Analysts' forecasts are also widely available to investors and one can

4   reasonably assume that they influence investor expectations.

5 **Q. HOW DID YOU UTILIZE YOUR DATA SOURCES TO ESTIMATE GROWTH**

6 **RATES FOR THE COMPARISON GROUPS?**

7 A.   Schedule RB-2 presents the Value Line, Zacks, and Yahoo! Finance forecasted growth

8   estimates for the comparison group. These earnings and dividend growth estimates for

9   the comparison group are summarized on Columns (1) through (4) of page 1 of

10   Schedule RB-2.[21]

11   In my analysis I used dividend and earnings growth estimates from Value Line

12   and earnings growth forecasts from Zacks and Yahoo! Finance. It is important to

13   include dividend growth forecasts in the DCF model since the model calls for

14   forecasted cash flows. Value Line is the only source of which I am aware that forecasts

15   dividend growth and my approach gives this forecast equal weight with each of the

16   three earnings growth forecasts. In other words, each of the four growth forecasts is

17   given 25% weight in the averaging process.

18 **Q. HOW DID YOU PROCEED TO DETERMINE THE DCF RETURN ON**

19 **EQUITY FOR THE COMPARISON GROUP?**

20 A.   To estimate the expected dividend yield (D_1) for the group, the current dividend yield

21   must be moved forward in time to account for dividend increases over the next twelve

22   months. I estimated the expected dividend yield by multiplying the current dividend

23   yield by one plus one-half the expected growth rate.

---

[21]   Schedule RB-2 at 1.

1   Page 2 of Schedule RB-2 presents my standard method of calculating dividend

2   yields, growth rates, and ROE for the proxy group of companies.[22] The DCF Return

3   on Equity section shows the application of each of four growth rates I used in my

4   analysis to the current group dividend yield of 3.17% to calculate the expected dividend

5   yield. I then added the expected growth rates to the expected dividend yield. In

6   evaluating investor expected growth rates, I use both the average (Method 1) and the

7   median values (Method 2) to estimate the growth rates for the proxy group. The

8   calculations of the resulting DCF returns on equity for both methods are presented on

9   page 2 of Schedule RB-2.

10   Q.   **WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF**

11   **ANALYSIS?**

12   A.   For the average growth rates in Method 1, the results range from 8.70% to 9.12%, with

13   the average of these results being 8.85%. Using the median growth rates in Method 2,

14   the results range from 8.75% to 9.26%, with the average of these results being 8.97%.[23]

15   **B.   Capital Asset Pricing Model**

16   Q.   **BRIEFLY SUMMARIZE THE CAPITAL ASSET PRICING MODEL (CAPM)**

17   **APPROACH.**

18   A.   The theory underlying the CAPM approach is that investors, through diversified

19   portfolios, may combine assets to minimize the total risk of the portfolio.

20   Diversification allows investors to diversify away all risks specific to a particular

21   company and be left only with market risk that affects all companies. Thus, the CAPM

22   theory identifies two types of risks for a security: company-specific risk and market

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[22]   Schedule RB-2.

[23]   *Id*. at 2.

1	risk. Company-specific risk includes such events as strikes, management errors,

2	marketing failures, lawsuits, and other events that are unique to a particular firm.

3	Market risk includes inflation, business cycles, war, variations in interest rates, and

4	changes in consumer confidence. Market risk tends to affect all stocks and cannot be

5	diversified away. The idea behind the CAPM is that diversified investors are rewarded

6	with returns based on market risk. Within the CAPM framework, the expected return

7	on a security is equal to the risk-free rate of return plus a risk premium that is

8	proportional to the security's market, or non-diversifiable, risk. Beta is the factor that

9	reflects the inherent market risk of a security and measures the volatility of a particular

10	security relative to the overall market for securities. For example, a stock with a beta

11	of 1.0 indicates that if the market rises by 15%, that stock will also rise by 15%. This

12	stock moves in tandem with movements in the overall market. Stocks with a beta of

13	0.5 will only rise or fall 50% as much as the overall market. So with an increase in the

14	market of 15%, this stock will only rise 7.5%. Stocks with betas greater than 1.0 will

15	rise and fall more than the overall market. Thus, beta is the measure of the relative risk

16	of individual securities vis-à-vis the market.

17	Based on the foregoing discussion, the equation for determining the return for

18	a security in the CAPM framework is:

19
20	$$K = Rf + \beta(MRP)$$

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

25	This equation tells us about the risk/return relationship posited by the CAPM.

26	Investors are risk averse and will only accept higher risk if they expect to receive higher

1   returns. These returns can be determined in relation to a stock's beta and the market

2   risk premium. The general level of risk aversion in the economy determines the market

3   risk premium. If the risk-free rate of return is 3.0% and the required return on the total

4   market is 15%, then the risk premium is 12%. Any stock's required return can be

5   determined by multiplying its beta by the market risk premium. Stocks with betas

6   greater than 1.0 are considered riskier than the overall market and will have higher

7   required returns. Conversely, stocks with betas less than 1.0 will have required returns

8   lower than the market as a whole.

9 **Q.**   **ARE THERE CONCERNS REGARDING THE USE OF THE CAPM IN**

10   **ESTIMATING THE RETURN ON EQUITY?**

11 **A.**   Yes. There is some controversy surrounding the use of the CAPM.[24] There is evidence

12   that beta is not the primary factor in determining the risk of a security. For example,

13   Value Line's "Safety Rank" is a measure of total risk, not its calculated beta coefficient.

14   Beta coefficients usually describe only a small amount of total investment risk.

15   There is also substantial judgment involved in estimating the required market

16   return. In theory, the CAPM requires an estimate of the return on the total market for

17   investments, including stocks, bonds, real estate, etc. It is nearly impossible for the

18   analyst to estimate such a broad-based return. Often in utility cases, a market return is

19   estimated using the S&P 500 or the return on Value Line's stock market composite.

20   However, these are limited sources of information with respect to estimating the

21   investor's required return for all investments. In practice, the total market return

22   estimate faces significant limitations to its estimation and, ultimately, its usefulness in

23   quantifying the investor-required ROE.

---

[24] For a more complete discussion of some of the controversy surrounding the use of the CAPM, refer to *A Random Walk Down Wall Street* by Burton Malkiel, 215-219, 2019 Edition.

1   In the final analysis, a considerable amount of judgment must be employed in

2   determining the risk-free rate and market return portions of the CAPM equation. The

3   analyst's application of judgment can significantly influence the results obtained from

4   the CAPM. My past experience with the CAPM indicates that it is prudent to use a

5   wide variety of data in estimating investor-required returns. Of course, the range of

6   results may also be wide, indicating the difficulty in obtaining a reliable estimate from

7   the CAPM. Indeed, in Section IV of my testimony I will show the wide variance in

8   CAPM estimates between Mr. Hevert and myself based upon our inputs into the

9   CAPM.

10   Although I have reservations in using the CAPM to estimate the investor-

11   required ROE, it is commonly presented in utility rate cases. In this case, I employ the

12   CAPM as a supplemental source of information and as a supplemental check on my

13   DCF results.

14 Q. **HOW DID YOU ESTIMATE THE MARKET RETURN PORTION OF THE**

15   **CAPM?**

16 A. The first source I used was the Value Line Investment Analyzer, Plus Edition, for

17   June 25, 2019. This edition covers several thousand stocks. The Value Line

18   Investment Analyzer provides a summary statistical report detailing, among other

19   things, forecasted growth rates for earnings and book value for the companies Value

20   Line follows as well as the projected total annual return over the next three to five years.

21   I present these growth rates and Value Line's projected annual return on page 2 of

22   Schedule RB-3. I included median earnings and book value growth rates. The

23   estimated market returns using Value Line's market data were 10.59% – 13.0%, with

24   the average being 11.79%.

1   Q.   WHY DID YOU USE MEDIAN GROWTH RATE ESTIMATES RATHER
2   THAN THE AVERAGE GROWTH RATE ESTIMATES FOR THE VALUE
3   LINE COMPANIES?

4   A.   Using median growth rates is likely a more accurate method of estimating the central
5   tendency of Value Line's large data set compared to the average growth rates. Average
6   earnings and book value growth rates may be unduly influenced by very high or very
7   low three to five year growth rates that are unsustainable in the long run. For example,
8   Value Line's Statistical Summary shows both the highest and lowest value for earnings
9   and book value growth forecasts. For earnings growth, Value Line showed the highest
10   earnings growth forecast to be 541.08% and the lowest growth rate to be -12%. The
11   highest book value growth rate was 92.5% and the lowest was -38.5%. None of these
12   levels of growth is compatible with long-run growth prospects for the market as a
13   whole. The median growth rate is not influenced by such extremes because it
14   represents the middle value of a very wide range of earnings growth rates.

15   Q.   PLEASE CONTINUE WITH YOUR MARKET RETURN ANALYSIS.

16   A.   I also considered a supplemental check to the Value Line projected market return
17   estimates. Duff and Phelps published a study of historical returns on the stock market
18   in its *2019 SBBI Yearbook*. Some analysts employ this historical data to estimate the
19   market risk premium of stocks over the risk-free rate. The assumption is that a risk
20   premium calculated over a long period of time is reflective of investor expectations
21   going forward. Schedule RB-4 presents the calculation of the market returns using the
22   historical data.

1 **Q. PLEASE EXPLAIN HOW THIS HISTORICAL RISK PREMIUM IS**

2 **CALCULATED.**

3 A. Schedule RB-4 shows the arithmetic average of yearly historical stock market returns

4 over the historical period from 1926 – 2018.[25] The average annual income return for

5 long-term Treasury bond is subtracted from these historical stocks returns to obtain the

6 historical market risk premium. The historical market risk premium range is 6.90%.

7 **Q. DID YOU ADD AN ADDITIONAL MEASURE OF THE HISTORICAL RISK**

8 **PREMIUM IN THIS CASE?**

9 A. Yes. Duff and Phelps reported the results of a study by Dr. Roger Ibbotson and

10 Dr. Peng Chen indicating that the historical risk premium of stock returns over long-

11 term government bond returns has been significantly influenced upward by substantial

12 growth in the price/earnings (P/E) ratio for stocks from 1980 through 2001.[26] Duff and

13 Phelps noted that this growth in the P/E ratio for stocks was subtracted out of the

14 historical risk premium because "it is not believed that P/E will continue to increase in

15 the future."[27] The adjusted historical arithmetic market risk premium is 6.14%, which

16 I have also included in Schedule RB-4.

17 **Q. HOW DID YOU DETERMINE THE RISK FREE RATE?**

18 A. I used the average yields on the 30-year Treasury Bond and five-year Treasury note

19 over the six-month period from January through June 2019 from the Fed's Data

20 Download web site.[28] The 30-year Treasury Bond is often used by rate of return

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[25] Schedule RB-4.

[26] Roger G. Ibbotson, *2019 SBBI Yearbook* 10-28 (Duff & Phelps, 2019).

[27] *Id*.

[28] Federal Reserve System, https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15 (last visited Jul. 20, 2019).

1   analysts as the risk-free rate, but it contains a significant amount of interest rate risk.

2   The five-year Treasury note carries less interest rate risk than the 30-year Treasury

3   Bond and is more stable than three-month Treasury bills. Therefore, I have employed

4   both of these securities as proxies for the risk-free rate of return. This approach

5   provides a reasonable range over which the CAPM return on equity may be estimated.

6   **Q.**   **HOW DID YOU DETERMINE THE VALUE FOR BETA?**

7   A.   I obtained the betas for the companies in the proxy group from most recent Value Line

8   reports. The average of the Value Line betas for the comparison group is 0.59 as shown

9   on page 2 of Schedule RB-3.[29]

10   **Q.**   **PLEASE SUMMARIZE THE CAPM RESULTS.**

11   A.   From Schedule RB-3, page 1, my forward-looking CAPM return on equity estimates,

12   the CAPM results are 7.86% – 8.11%.[30] Using historical risk premiums, the CAPM

13   results are 6.49% – 6.94% as shown on Schedule RB-4.[31]

14   **C.**   **Conclusions and Recommendations**

15   **Q.**   **PLEASE SUMMARIZE THE COST OF EQUITY RESULTS FROM YOUR**

16   **DCF AND CAPM ANALYSES.**

17   A.   Table 2 below summarizes the cost of equity estimates I developed using the DCF

18   model and the CAPM.

---

[29]   Schedule RB-3 at 2.

[30]   *Id.* at 1.

[31]   Schedule RB-4.

<table>
<tr><td colspan="2" align="center">**TABLE 2**
SUMMARY OF ROE ESTIMATES</td></tr>
<tr><td>Baudino DCF Methodology:
Average Growth Rates</td><td></td></tr>
<tr><td>- High</td><td>9.12%</td></tr>
<tr><td>- Low</td><td>8.70%</td></tr>
<tr><td>- Average</td><td>8.85%</td></tr>
<tr><td>Median Growth Rates:</td><td></td></tr>
<tr><td>- High</td><td>9.26%</td></tr>
<tr><td>- Low</td><td>8.75%</td></tr>
<tr><td>- Average</td><td>8.97%</td></tr>
<tr><td>CAPM:</td><td></td></tr>
<tr><td>- 5-Year Treasury Bond</td><td>7.86%</td></tr>
<tr><td>- 30-Year Treasury Bond</td><td>8.11%</td></tr>
<tr><td>- Historical Returns</td><td>6.49% - 6.94%</td></tr>
</table>

1

2   **Q.   DID YOU ANALYZE AND REVIEW RECENT COMMISSION-**

3   **AUTHORIZED RETURNS ON EQUITY TO INFORM YOUR ROE**

4   **RECOMMENDATION TO THE COMMISSION?**

5   A.   Yes.   Table 3 below summarizes the 2018 quarterly allowed ROEs from EEI's *Rate*

6   *Review Summary, Q4 2018 Regulatory & Financial Update,* page 4.[32]

7

<table>
<tr><td colspan="2" align="center">**TABLE 3**
Quarterly Commission-Allowed ROEs</td></tr>
<tr><td>Q1 2018</td><td>9.58%</td></tr>
<tr><td>Q2 2018</td><td>9.51%</td></tr>
<tr><td>Q3 2018</td><td>9.53%</td></tr>
<tr><td>Q4 2018</td><td>9.45%</td></tr>
<tr><td colspan="2">Source: Edison Electric Institute</td></tr>
</table>

8

9   I also reviewed the data on Commission-allowed ROEs provided by Mr. Hevert in his

10   Exhibit RBH-5. The average allowed ROE for January through March 14, 2019 was

11   9.55%. In addition, Cities requested updated allowed ROEs in Cities RFI No. 3-12 and

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[32]   EEI, *Rate Review Summary, Q4 2018 Regulatory & Financial Update*, 4 (2018).

1   the Company's response provided the requested update.[33]   Table 4 presents updated

2   allowed ROEs through May 14, 2019, excluding ROEs associated with limited issue

3   riders and settlements. The average of these additional allowed ROEs is 9.48%.

TABLE 4
Recent Commission-allowed ROEs
Fully Litigated Rate Proceedings

Potomac Edison Co.	MD	3/22/2019	9.65%
Duke Energy Carolinas	SC	5/1/2019	9.50%
DTE Electric Co.	MI	5/2/2019	10.00%
Duke Energy Progress LLC	SC	5/8/2019	9.50%
Otter Tail Power	SD	5/14/2019	8.75%
Average			9.48%

Source: Question No. Cities 3-12, Attachment 3-12
Limited Issue riders and settlements excluded

4

5   **Q.   WHAT IS YOUR RECOMMENDED RETURN ON EQUITY FOR AEP TEXAS**

6   **IN THIS PROCEEDING?**

7   A.   My recommended ROE for AEP Texas is 9.2%. My recommendation is consistent

8   with the upper end of the range of my DCF results.

9   **Q.   PLEASE   EXPLAIN   IN   MORE   DETAIL   WHY   YOUR   9.2%   ROE**

10   **RECOMMENDATION IS REASONABLE.**

11   A.   There are several reasons why my recommended ROE for AEP Texas is reasonable,

12   even generous, given today's low interest rate environment.

13   First, my recommendation is at the high end of my ROE estimates, including

14   the CAPM results. In recommending the high end of my ROE estimates, I recognize

15   that AEP Texas' common equity ratio of 40% has some additional financial risk

16   compared to the proxy group's average 2018 common equity ratio of 49.8%, excluding

---

[33]   AEP Texas' Response to Cities RFI No. 3-12. See Attachment D.

1   El Paso Electric Company. Please refer to Schedule RB-5 for the calculation of the

2   proxy group's average common equity ratio, which is based on Value Line data.[34]

3   However, it should also be noted that much of this additional financial risk is mitigated

4   by the Company's low-risk "wires only" business and by the Commission-approved

5   riders that enable the Company to earn at or near its allowed ROE. Further, AEP Texas'

6   credit ratings are comparable to the industry average as I pointed out in Section II my

7   testimony.

8   Second, I chose to give some consideration to recently allowed ROEs, which

9   are averaging around 9.5%. I do not recommend that the Commission base its allowed

10   ROE on the average allowed ROEs in other states. Such an approach would not be

11   based on the specific evidence and circumstances presented in this case. However, my

12   recommendation of 9.2% is reasonably close to recently allowed ROEs and is based on

13   the market evidence and analysis I reviewed. Mr. Hevert's data shows that the allowed

14   returns he reported fall in range of 8.69% – 10.0% from January 2018 through March

15   2019. My recommended ROE of 9.2% falls within that range.

16   Third, my recommendation recognizes the continued low interest rate

17   environment in the economy, which has benefitted utility stocks so far in 2019. This

18   is reflected by the increased proxy group stock prices and declining monthly dividend

19   yields over the six-month period of January through June 2019.

---

[34]   Schedule RB-5.

1   **D.   Capital Structure and Weighted Cost of Capital**

2 **Q.   AEP TEXAS WITNESSES HEVERT, HAWKINS, AND FETTER ALL**

3   **SUPPORT AN INCREASE IN THE COMPANY'S EQUITY RATIO FROM**

4   **40% TO 45%.   SHOULD THE COMMISSION ADOPT THE COMPANY'S**

5   **PROPOSED CAPITAL STRUCTURE?**

6 A.   No. I recommend that the Commission continue to authorize a capital structure for

7   AEP Texas that contains a common equity ratio of no more that 40%.

8 **Q.   PLEASE EXPLAIN WHY THE COMMISSION SHOULD MAINTAIN THE**

9   **APPROVED EQUITY RATIO FOR AEP TEXAS OF 40%.**

10 A.   The 40% equity ratio that the Commission approved in Docket Nos. 33309 and 33310

11   for AEP Texas Central Company and AEP Texas North Company, respectively, has

12   supported strong investment grade credit ratings for AEP Texas.[35] Company witnesses

13   Hevert, Hawkins, and Fetter all support and recommend that the Commission raise the

14   Company's equity ratio to 45%. However, none of the witnesses have shown that a

15   ratemaking equity ratio of 40% has hampered the Company's access to capital markets

16   at reasonable terms. If the equity ratio was raised to 45%, then AEP Texas ratepayers

17   would have to pay higher rates to support a higher cost of capital with no discernible

18   benefit. None of the three Company witness offered any supporting analysis that

19   maintaining an equity ratio of 40% would adversely affect the Company's credit rating

20   or increase its future cost of debt.

21   In assessing the effect of maintaining the Company's currently authorized 40%

22   equity ratio, I recommend the Commission keep in mind the S&P credit report I cited

---

[35] *Application of AEP Texas Central Company for Authority to Change* Rates, Docket No. 33309,
Order on Rehearing (Mar. 4, 2008); *Application of AEP Texas North Company for Authority to Change Rates*,
Docket No. 33310, Order (May 29, 2007).

1   in Section II of my testimony. Two of the major factors that go into S&P's credit rating

2   are Business Risk and Financial Risk. AEP Texas has an excellent Business Risk

3   ranking from S&P, which is near the top of S&P's Business Risk ranking system. It

4   should also be kept in mind that this excellent Business Risk rank offsets to some extent

5   the Company's Significant Financial Risk rank, a rank that is below average on the

6   S&P ranking system. The S&P report stated the following on pages 6 and 7:

7   We base our financial risk assessment on our more moderate financial
8   ratio benchmarks rather than the benchmarks we use for a typical
9   corporate issuer. This reflects the company's steady cash flow from its
10   low-risk, rate-regulated electric operations and management of
11   regulatory risk.[36]

12 **Q.   IN HIS DIRECT TESTIMONY MR. FETTER PRESENTED CHARTS 2 AND 3**

13   **THAT COMPARED THE EQUITY CAPITALIZATION OF TWO GROUPS**

14   **OF UTILITIES TO AEP TEXAS. PLEASE RESPOND TO MR. FETTER'S**

15   **CHARTS.**

16 A.   Charts 2 and 3 show that AEP Texas' approved equity ratio of 40% is the lowest

17   percentage equity ratio compared to the companies in the two groups. However, this

18   comparison by itself is irrelevant since it only shows part of the total credit picture for

19   AEP Texas. As I showed previously, the full credit rating for AEP Texas will also

20   consist of its Business Risk assessment and ranking, which is excellent. This helps to

21   offset some of the higher financial risk due to a higher debt ratio in the Company's

22   capital structure. Part of that excellent Business Risk profile are the TCOS and DCRF.

23   The TCOS provides the Company the opportunity to file twice a year for changes to

24   the amount of transmission investment in its rate base. The DCRF allows the Company

25   to file once a year for changes to the distribution investment in its rate base. These

---

[36]   See Attachment B at 6-7.

1   regulatory mechanisms enable the Company to circumvent regulatory lag associated

2   with new transmission and distribution investments and earn at or near its authorized

3   rate of return.

4 **Q. WHAT IS YOUR RECOMMENDED WEIGHTED COST OF CAPITAL?**

5 A.   My recommended weighted cost of capital is 6.25%. Table 5 below presents this

6   recommendation based on a 40% common equity ratio and the Company's requested

7   cost of long-term debt.

Table 5
Recommended Weighted Cost of Capital

	Capital Ratio	Component Costs	Weighted Avg Cost
Long Term Debt	60.00%	4.28%	2.57%
Common Equity	40.00%	9.20%	3.68%
Total Capital	100.00%		6.25%

8

9   **IV.   RESPONSE TO AEP TEXAS' RETURN ON EQUITY TESTIMONY**

10 **Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF MR. ROBERT**

11   **HEVERT?**

12 A.   Yes.

13 **Q. PLEASE SUMMARIZE MR. HEVERT'S TESTIMONY AND APPROACH TO**

14   **RETURN ON EQUITY.**

15 A.   Mr. Hevert employed three methods to estimate the investor-required rate of return for

16   AEP Texas: (1) the constant growth DCF model, (2) the CAPM and the empirical

17   CAPM (ECAPM), and (3) the Bond Yield Plus Risk Premium model (BYRP).

18   Mr. Hevert also presented the results of the Expected Return approach based on Value

19   Line's forecasted returns on book equity for the proxy group.

1   For his constant growth DCF approach, Mr. Hevert used Value Line, First Call,

2   and Zacks for the investor expected growth rate. For the proxy group, Mr. Hevert's

3   mean growth rate ROE results ranged from 8.81% to 9.00%.[37]

4   With respect to the CAPM, Mr. Hevert utilized a current and near-term

5   projected yield on the 30-Year Treasury Bond for his risk-free rate. Using the current

6   Treasury bond yield of 3.03%, his CAPM results ranged from 8.17% to 11.10%. Using

7   the near-term projected Treasury yield, his CAPM results ranged from 8.39% to

8   11.31%.[38]

9   Mr. Hevert's ECAPM variation of the CAPM yielded results ranging from

10   9.54% to 12.73%.[39]

11   Finally, Mr. Hevert's formulation of the BYRP approach resulted in a ROE

12   range of 9.93% – 10.17%.[40]

13   Based on the results of his analyses and judgment, Mr. Hevert recommended a

14   ROE range for AEP Texas of 10.00% to 10.75%, concluding that the cost of equity is

15   10.50%.[41]

16   **Q.   BEFORE YOU PROCEED TO THE PARTICULARS OF YOUR REVIEW OF**

17   **MR. HEVERT'S TESTIMONY, WHAT IS YOUR OVERALL CONCLUSION**

18   **WITH RESPECT TO MR. HEVERT'S RECOMMENDED ROE RANGE?**

19   A.   Mr. Hevert's recommended ROE range of 10.00% – 10.75% fails to reflect the full

20   range of results from his analyses. His mean DCF results, which are fairly consistent

---

[37]   Refer to Direct Testimony of Robert B. Hevert, Exhibit RBH-1.

[38]   See Direct Testimony of Robert B. Hevert at 26, Table 5.

[39]   *Id.*

[40]   *Id.*

[41]   Direct Testimony of Robert B. Hevert at 2.

1   with mine, were completely excluded from his range of recommendations. Based on

2   the ROE results presented by Mr. Hevert, it appears that he mainly relied on the upper

3   range of his CAPM and ECAPM and his BYRP method for the lower end of his

4   recommended range.

5   To put this another way, consider the following:

6   •   Mr. Hevert rejected the mean results from the constant growth DCF in
7   total.

8   •   Mr. Hevert apparently rejected the CAPM results that used the
9   Bloomberg derived market risk premium, which ranged from 8.17% -
10   9.49%.

11   •   Mr. Hevert's ECAPM results using the Bloomberg derived market risk
12   premium (9.54% - 9.76%) also fall below his floor recommendation of
13   10.00%.

14   •   Most of the CAPM and ECAPM results using the Value Line derived
15   market risk premium (11.10% - 12.73%) fall outside the upper end of
16   Mr. Hevert's ROE range of 10.75%.

17   What we are left with, then, is BYRP results of 9.93% – 10.17% being

18   consistent with Mr. Hevert's floor recommendation of 10.0%. It is difficult to discern

19   which results Mr. Hevert used for the 10.75% upper bound of his recommended range

20   or how he settled on his recommended ROE of 10.50%. However, it is clear that many

21   of Mr. Hevert's ROE results from the DCF model and the CAPM are far lower than his

22   recommended ROE of 10.50%.

23   Q.   **IS IT APPROPRIATE FOR MR. HEVERT TO REJECT THE MEAN RESULTS**

24   **FROM HIS DCF ANALYSES?**

25   A.   No. It is inappropriate for Mr. Hevert to exclude the mean results of the constant

26   growth DCF model in his recommended ROE for AEP Texas. The constant growth

27   DCF model utilizes verifiable public information with respect to investor return

28   requirements for electric utilities. Current stock prices are the best indicators we have

1   of investor expectations and analysts' earnings and dividend growth forecasts may

2   reasonably be assumed to influence investors' required ROEs. Discarding this

3   important publicly available information as Mr. Hevert has done serves to significantly

4   overstate his recommended investor-required return for a low-risk regulated utility

5   company such as AEP Texas. The DCF model currently shows that investor-required

6   returns are considerably lower for utility stocks given their safety and security relative

7   to the stock market as a whole.

8   Q. **IS USING THE HIGH MEAN RESULTS FROM THE DCF MODELS**

9   **APPROPRIATE?**

10 A. No. Mr. Hevert's high mean results simply use the highest ROE for each company in

11   the proxy group, which is driven by the highest expected growth rate. There is no basis

12   for assuming that investors are more likely to expect the highest growth rate from the

13   three sources used by Mr. Hevert. The average of the three sources is a far more likely

14   and reasonable assumption. Further, the proxy group high mean is unduly influenced

15   by Avangrid, which has a high ROE result of 15.78%.[42]

16 Q. **ON PAGE 58, LINES 6 THROUGH 15 OF HIS DIRECT TESTIMONY,**

17   **MR. HEVERT CRITICIZED THE USE OF THE DCF MODEL ON CERTAIN**

18   **GROUNDS. PLEASE ADDRESS MR. HEVERT'S CRITICISMS.**

19 A. Mr. Hevert testified that the DCF model is predicated on a number of assumptions, one

20   being a constant P/E ratio. Since P/E ratios in the utility sector are currently above

21   their long-term average and the market's P/E, Mr. Hevert recommended caution when

22   viewing the DCF results. Mr. Hevert also testified that the DCF model is producing

23   results below the authorized returns for electric utilities.

---

[42]   See Direct Testimony of Robert B. Hevert, Exhibit RBH-1.

1   First, before I proceed to a more detailed response to Mr. Hevert's criticisms of

2   the DCF model's assumptions, it is important to realize that none of the models

3   Mr. Hevert and I use to estimate the investor-required ROE strictly adhere to their

4   underlying assumptions 100% of the time in the real world. The DCF, CAPM, and risk

5   premium models all operate with certain simplifying assumptions. In Section III of my

6   testimony I pointed out the limitations of the CAPM that must be considered in

7   assessing its effectiveness relative to the DCF model. One of those limitations is

8   estimating the market required rate of return. Estimating the market required rate of

9   return requires considerable judgment on the part of the analyst, judgment that may

10   result in a wide range of possible returns. In this case, Mr. Hevert and I used very

11   different estimates of the market rate of return that caused our CAPM results to differ

12   considerably. I will address the serious underlying problems with Mr. Hevert's CAPM

13   later in my testimony.

14   I suggest that the Commission recognize that no ROE estimation model strictly

15   adheres to its underlying assumptions all the time.

16 Q. **PLEASE CONTINUE WITH YOUR RESPONSE TO MR. HEVERT'S**

17   **CRITICISM OF THE DCF MODEL'S ASSUMPTIONS.**

18 A. With respect to the assumption of a constant P/E ratio, simply because the utility

19   industry's current P/E ratio may be above the long-term average P/E ratio does not

20   mean that the DCF results based on current data are questionable and should be thrown

21   out completely. As I have stated previously in my testimony, capital markets are

22   efficient and can be assumed to reflect investor preferences in the prices they are willing

23   and able to pay for a regulated utility's common stock. This includes publicly available

24   information to which investors have access, including P/E ratios. The current stock

1   price, then, is reflective of the discounted future cash flows to the investor in the form

2   of dividends as well as the expected price of the stock when it is sold. It does not make

3   sense for a rational investor to expect a capital loss in the future based on the price that

4   investor pays today. What this means is that it is reasonable to assume that current

5   stock prices are reflective of investors' required ROE and that the DCF model can

6   provide valid and valuable information to the Commission in its determination of the

7   allowed ROE for regulated utilities generally and for AEP Texas in this case.

8 **Q.   ON PAGES 58 AND 59 OF HIS DIRECT TESTIMONY, MR. HEVERT**

9   **TESTIFIED THAT THE FEDERAL RESERVE'S PROCESS OF**

10   **NORMALIZATION, INCLUDING THE "UNCERTAINTY SURROUNDING**

11   **THE 'UNWINDING' OF ASSETS PUT ON [ITS] BALANCE SHEET DURING**

12   **ITS 'QUANTITATIVE EASING' INITIATIVE INTRODUCE A DEGREE OF**

13   **RISK AND A LIKELIHOOD OF INCREASING INTEREST RATES, NOT**

14   **PRESENT IN THE CURRENT MARKET." DO YOU AGREE WITH THIS**

15   **STATEMENT?**

16 A.   No. Mr. Hevert's statement regarding the likelihood of increasing interest rates is

17   inconsistent with recent interest rate trends, as the Fed may actually cut interest rates

18   later this year. Furthermore, I showed earlier in my testimony that long-term interest

19   rates have fallen significantly during 2019. Mr. Hevert's concern regarding increasing

20   interest rates is misplaced.

21   Moreover, it is more likely that investors have fully taken this information into

22   account since it is already public knowledge given the Fed's statements regarding its

23   plans for unwinding its Quantitative Easing program and its public statements

1   regarding short-term interest rates and the more accommodative stance the Fed is likely

2   to take due to concerns about economic growth.

3 **Q.**   **ON PAGE 59 OF HIS DIRECT TESTIMONY, MR. HEVERT TESTIFIED**

4   **THAT SINCE 1980 ONLY TEN UTILITY RATE CASES INCLUDED AN**

5   **AUTHORIZED ROE OF LESS THAN 9.0%.   PLEASE RESPOND TO**

6   **MR. HEVERT'S TESTIMONY ON THIS POINT.**

7 A.   Including rate cases since 1980 is an irrelevant exercise because it places too much

8   emphasis on stale data. In the 1980s and 1990s interest rates and allowed ROEs were

9   far higher than they have been in the last few years. Consider the following information

10   I developed using the information in Mr. Hevert's Exhibit RBH-5:

11   •   From 1980 through 1989, the average awarded ROE was 14.80% and
12   the average 30-Year Treasury Bond yield was 11.35%.

13   •   From 1990 through 1999, the average awarded ROE was 11.91% and
14   the average 30-Year Treasury Bond yield was 7.51%.

15   •   From 2000 through 2009, the average awarded ROE was 10.62% and
16   the average 30-Year Treasury Bond yield was 4.81%.

17   These averages give the Commission a general picture of the interest rate and ROE

18   levels from the 1980s, 1990s, and 2000s and represent 1,218 of the 1,584 observations

19   in Mr. Hevert's data set in Exhibit RBH-5. They are in no way indicative of

20   investor-required returns today given how much higher interest rates were during these

21   prior periods. According to Mr. Hevert's data, since January 2016 the average awarded

22   ROE was 9.61% and in 2018 the average allowed ROE was 9.56%.

23   I mentioned earlier that one of Mr. Hevert's criticisms of the DCF model was

24   that it was below Commission authorized ROEs. These more recent ROE awards show

25   how grossly overstated Mr. Hevert's 10.50% ROE recommendation is in today's

26   environment and how excessive certain of his CAPM and ECAPM results are.

1 Q. **CONSIDERING THE FOREGOING DISCUSSION, PLEASE SUMMARIZE**

2   **YOUR CONCLUSIONS WITH RESPECT TO MR. HEVERT'S**

3   **RECOMMENDED ROE RANGE AND HIS ROE RECOMMENDATION FOR**

4   **AEP TEXAS.**

5 A. I strongly recommend that the Commission reject Mr. Hevert's recommended ROE

6   range and his recommended ROE of 10.50%. Mr. Hevert's ROE range omits critically

7   important information from the DCF model and, as a result, greatly overstates the

8   investor-required ROE for a low-risk transmission and distribution (T&D) utility such

9   as AEP Texas.

10 **A. CAPM and ECAPM**

11 Q. **BRIEFLY SUMMARIZE THE MAIN ELEMENTS OF MR. HEVERT'S CAPM**

12   **APPROACH.**

13 A. On page 61 of his Direct Testimony, Mr. Hevert testified that he used two different

14   measures of the risk-free interest rate: the current 30-day average yield on the 30-year

15   Treasury Bond (3.03%) and a projected 30-year Treasury Bond yield (3.25%).[43]

16   Mr. Hevert then calculated ex-ante measures of total market returns using data from

17   Bloomberg and Value Line. Total market returns from these two sources were 13.64%

18   using Bloomberg data and 16.75% return using Value Line data.[44]

19   Mr. Hevert used two different estimates for beta from Bloomberg (0.485) and

20   Value Line (0.588).[45]

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[43] Direct Testimony of Robert B. Hevert at 61, lines 6-9.

[44] Refer to Direct Testimony of Robert B. Hevert, Exhibit RBH-2.

[45] *Id*. at Exhibit RBH-3.

1 **Q. IS IT APPROPRIATE TO USE FORECASTED OR PROJECTED BOND**

2 **YIELDS IN THE CAPM?**

3 A. Definitely not. Current interest rates and bond yields embody all of the relevant market

4 data and expectations of investors, including expectations of changing future interest

5 rates. The forecasted bond yield used by Mr. Hevert is speculative at best, will likely

6 never come to pass, and is at odds with the trend of declining long-term bond yields so

7 far in 2019. Current interest rates provide tangible and verifiable market evidence of

8 investor return requirements today, and these are the interest rates and bond yields that

9 should be used in both the CAPM and in the bond yield plus risk premium analyses.

10 To the extent that investors give forecasted interest rates any weight at all, they are

11 already incorporated in current securities prices.

12 **Q. YOU NOTED EARLIER THAT MR. HEVERT USED A FORECASTED**

13 **30-YEAR TREASURY BOND YIELD OF 3.25%, WHILE THE CURRENT**

14 **YIELD WAS 3.03%. WHAT DOES THIS SUGGEST WITH RESPECT TO**

15 **INVESTORS CURRENTLY HOLDING 30-YEAR TREASURY BONDS?**

16 A. It suggests that investors today are expecting to incur huge losses in the value of their

17 investments in long-term Treasury Bonds, which makes no economic sense

18 whatsoever.

19 The price of a bond moves in the opposite direction of its yield. In other words,

20 given a certain current bond coupon and price, if the required yield on that bond

21 increases then the price of the bond goes down. Alternatively, if the required yield

22 declines then the price of the bond increases. This relationship can be illustrated with

23 the following simplified example. Assume a current 30-year Treasury Bond has a

24 coupon of $3.00 and a price of $100, resulting in a current yield of 3.00%. If interest

1   rates were to rise in the economy such that the required yield on the 30-year Treasury

2   Bond increased to 3.50%, then the price of our existing 30-year Treasury Bond would

3   fall to $85.71 from $100, given the coupon of $3.00. This represents a loss to our

4   current bond investor of 14.30%.

5   The point here is that if investors were certain that there would soon be a

6   substantial increase in interest rates, the rational response would be to immediately

7   discount what they were willing to pay currently for the 30-year Treasury Bond rather

8   than pay $100 and suffer certain significant losses to the value of their bonds.

9 **Q.   SHOULD   MR.   HEVERT   HAVE   CONSIDERED   SHORTER-TERM**

10   **TREASURY YIELDS IN HIS CAPM ANALYSES?**

11 A.   Yes. In theory, the risk-free rate should have no interest rate risk. 30-year Treasury

12   Bonds do tend to face this risk, which is the risk that interest rates could rise in the

13   future and lead to a capital loss for the bondholder. Typically, the longer the duration

14   of the bond, the greater the interest rate risk. The 5-year Treasury note has much less

15   interest rate risk than the 30-year Treasury Bond and may be considered one reasonable

16   proxy for a risk-free security.

17 **Q.   HOW DO MR. HEVERT'S ESTIMATES OF THE OVERALL MARKET**

18   **RETURN COMPARE TO YOURS?**

19 A.   My estimates of the market required return are as follows:

20   •   Value Line 3-5 Year Total Return: 13.0%[46]

21   •   Value Line Growth Rates: 10.59%[47]

22   •   S&P Average Historical Returns: 11.90%[48]

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[46]   Refer to Schedule RB-3 at 2.

[47]   *Id.*

[48]   Refer to Schedule RB-4.

1   Mr. Hevert's market returns of 13.64% – 16.75% are extraordinarily high

2   compared to historical norms, especially the 16.75% Value Line market return. I

3   recommend that the Commission give Mr. Hevert's estimated market returns little

4   weight in this proceeding.

5   Q.   **YOUR SIX-MONTH AVERAGE 30-YEAR BOND YIELD IS 2.90%. WHAT**

6   **WOULD MR. HEVERT'S CAPM RESULTS BE USING THIS MORE RECENT**

7   **AVERAGE YIELD?**

8   A.   Using a 2.90% 30-Year Treasury Bond yield and Mr. Hevert's market returns and betas

9   would produce the following results:

10   2.90% + .485 * (13.64% - 2.90%) = 8.10% CAPM ROE

11   2.90% + .588 * (16.75% - 2.90%) = 11.04% CAPM ROE

12   Using Mr. Hevert's Value Line estimate of the market return still results in an

13   implausible 11.04% ROE, a value that far exceeds allowed returns since 2016.

14 Q.   **BEGINNING ON PAGE 63 OF HIS DIRECT TESTIMONY, MR. HEVERT**

15   **EXPLAINED THAT HE ALSO INCLUDED THE ECAPM ANALYSIS.**

16   **PLEASE COMMENT ON MR. HEVERT'S USE OF THE ECAPM IN THIS**

17   **CASE.**

18 A.   The ECAPM is designed to account for the possibility that the CAPM understates the

19   return on equity for companies with betas less than 1.0. Mr. Hevert explained on

20   page 63 of his Direct Testimony how he applied the adjustment to his CAPM data,

21   which was based on the formula included in *New Regulatory Finance* by Dr. Roger

22   Morin.

23   The use of an adjustment factor to "correct" the CAPM results for companies

24   with betas less than 1.0 is further evidence of the lack of accuracy inherent in the CAPM

1   itself. The ECAPM adjustment also suggests that published betas by such sources as

2   Value Line and Bloomberg are incorrect and that investors should not rely on them in

3   formulating the CAPM. Finally, although Mr. Hevert cited the source of the ECAPM

4   formula he used, he provided no evidence that investors favor this version of the CAPM

5   over the standard CAPM.

6 **Q.   PLEASE COMMENT ON THE ECAPM RESULTS REPORTED BY**

7 **MR. HEVERT ON TABLE 9 ON PAGE 66 OF HIS DIRECT TESTIMONY.**

8 A.   The ECAPM results using the Value Line Derived Market Risk Premium—11.45% to

9   12.73%—are even more implausible and excessive than the upper end of Mr. Hevert's

10   CAPM results. To provide the Commission with some perspective here, according to

11   the data presented by Mr. Hevert in his Exhibit RBH-5, the last Commission authorized

12   ROE exceeding 11.45% was September 2, 2011 (12.88%) and that value far exceeded

13   the other Commission allowed ROEs in 2011. Prior to the September 2, 2011 allowed

14   ROE of 12.88%, the only allowed ROE to exceed 11.45% occurred on March 12, 2009,

15   more than 10 years ago. Mr. Hevert's ECAPM results using the Value Line market

16   premium are so disproportionately high that they should be rejected out of hand by the

17   Commission.

18   Using the Bloomberg market risk premium and beta values, the ECAPM results

19   (9.54% – 9.76%) fall below the 10.0% floor of Mr. Hevert's recommended ROE range.

20   The ECAPM results using the Bloomberg market risk premium and Value Line betas

21   (10.38% – 10.58%) are at least within Mr. Hevert's recommended ROE range, but

22   Mr. Hevert provided no rationale for rejecting the ECAPM results that employ the

23   Bloomberg market risk premium and beta values.

1   **B.   Risk Premium**

2   **Q.   PLEASE SUMMARIZE MR. HEVERT'S RISK PREMIUM APPROACH.**

3   A.   Mr. Hevert developed an historical risk premium using Commission-allowed returns

4   for regulated electric utility companies and 30-year Treasury Bond yields from January

5   1980 through March 14, 2019. He used regression analysis to estimate the value of the

6   inverse relationship between interest rates and risk premiums during that period.

7   Applying the regression coefficients to the average risk premium and using the current

8   and projected 30-year Treasury Bond yields I discussed earlier, Mr. Hevert's risk

9   premium ROE estimate range is 9.93% – 10.17%.[49]

10   **Q.   PLEASE RESPOND TO MR. HEVERT'S RISK PREMIUM ANALYSIS.**

11   A.   The bond yield plus risk premium approach is imprecise and can only provide very

12   general guidance on the current authorized ROE for a regulated electric utility. Risk

13   premiums can change substantially over time based on investor preferences and market

14   conditions. These changes will not be incorporated into an historical risk premium

15   analysis of the type Mr. Hevert uses. As such, this approach is a "blunt instrument," if

16   you will, for estimating the ROE in regulated proceedings. In my view, a properly

17   formulated DCF model using current stock prices and growth forecasts is far more

18   reliable and accurate than the bond yield plus risk premium approach, which relies on

19   a historical risk premium analysis over a certain period of time.

20   **Q.   DO MR. HEVERT'S RISK PREMIUM RESULTS ACCURATELY TRACK**

21   **RECENTLY ALLOWED ROES?**

22   A.   No. Mr. Hevert's Risk Premium result was 9.93% and incorporated his current 30-Year

23   Treasury Bond yield of 3.03%. To test Mr. Hevert's model, I averaged the allowed

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[49]   Direct Testimony of Robert B. Hevert at 68, Table 10.

1	returns and Treasury bond yields for 2018 as reported in Mr. Hevert's Exhibit RBH-5.
2	The average allowed ROE for 2018 was 9.56% and the average 30-Year Treasury Bond
3	yield was 2.99%, which is very close to the 3.03% current bond yield used by
4	Mr. Hevert. One would expect that an accurate model would predict a risk premium
5	ROE close to 9.56% using a current bond yield of 3.03%, but Mr. Hevert's 9.93%
6	overshoots that number by 37 basis points, or 0.37%. In my opinion, this provides
7	evidence to the Commission that using Mr. Hevert's risk premium model in today's
8	economic environment will overstate the investor-required ROE for a low-risk T&D
9	utility such as AEP Texas.

10 **C.** **Expected Earnings**

11 **Q. ON PAGE 69 OF HIS DIRECT TESTIMONY, MR. HEVERT PRESENTED HIS**
12 **EXPECTED EARNINGS ANALYSIS. PLEASE RESPOND TO MR.**
13 **HEVERT'S ANALYSIS.**

14 A. Mr. Hevert relied on Value Line's projected returns on book value equity for the period
15 2021-2023/2022-2024 for his expected earnings ROE estimate, which ranges from
16 10.01% – 10.15%.[50]

17 The major flaw in the expected earnings approach is that it measures accounting
18 returns on book value, not investor-required returns in the marketplace. A market-
19 based ROE estimation method like the DCF model uses stock market data and earnings
20 growth forecasts to determine a forward-looking ROE estimate that incorporates true
21 opportunity cost measured against the returns available to the investor in alternative
22 investments such as other stocks, bonds, real estate, and so forth. Further, changes in
23 economic variables such as interest rates will affect the required returns of utility stock

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[50] *Id.* at 69.

1   investments and other investments as well. Such changes will be incorporated into the

2   DCF and CAPM models, which use current market data. These changes will not be

3   reflected in book returns on common equity.

4   Turning to Mr. Hevert's expected earnings approach, he provided absolutely no

5   support for the assumption that Value Line's projected accounting returns on book

6   value in the 2021 – 2024 projected time period have any influence whatsoever on

7   required returns in today's financial marketplace or that they provide a useful

8   benchmark in estimating current required returns. I recommend the Commission reject

9   Mr. Hevert's expected earnings approach and instead use market-based ROE

10   estimation models to set AEP Texas' allowed ROE in this proceeding.

11   **Q.   DOES THIS COMPLETE YOUR TESTIMONY?**

12   A.   Yes.

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-six 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

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

Expert Testimony Appearances
of
Richard A. Baudino
As of July 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of July 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2019**

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	Evaluation of cost allocation, rate design, rate plan, and carrying charge proposals.
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.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2019**

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.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Richard A. Baudino
As of July 2019

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.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2019**

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.

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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 HealllthCare 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	WV	West Virginia Energy Users Group	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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Date	Case	Jurisdict.	Party	Utility	Subject
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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Date	Case	Jurisdict.	Party	Utility	Subject
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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As of July 2019

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

J. KENNEDY AND ASSOCIATES, INC.

SOAH DOCKET NO. 473-19-4421
PUC DOCKET NO. 49494

AEP TEXAS INC.'S RESPONSE TO CITIES SERVED BY AEP TEXAS'
THIRD REQUEST FOR INFORMATION

Question No. Cities 3-1:

Please provide all credit rating agency reports (Standard and Poor's, Moody's, Fitch) for AEP Texas over the last 24 months.

Response No. Cities 3-1:

Please see Cities' 3-1 Attachments 1 and 2 and for the requested Standard and Poor's reports, and Cities' 3-1 Confidential Attachments 3 and 4 for the requested Moody's reports. AEP does not subscribe to Fitch.

Attachments 3 and 4 responsive to this request are CONFIDENTIAL under the terms of the Protective Order. The Confidential information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

Prepared By: Lindsay J. Justice   Title: Corp Finance Analyst Assc

Sponsored By: Renee V. Hawkins   Title: Mng Dir Corporate Finance

ATTACHMENT B

SOAH Docket No. 473-19-4421
PUC Docket No. 49494
Cities' 3rd, Q. # Cities 3-1
Attachment 2
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S&P Global
Ratings

RatingsDirect®

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AEP Texas Inc.

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Related Criteria

ATTACHMENT B

SOAH Docket No. 473-19-4421
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AEP Texas Inc.

Business Risk: EXCELLENT

Vulnerable — Excellent

Financial Risk: SIGNIFICANT

Highly leveraged — Minimal

a-   a-   a-

Anchor   Modifiers   Group/Gov't

Issuer Credit Rating
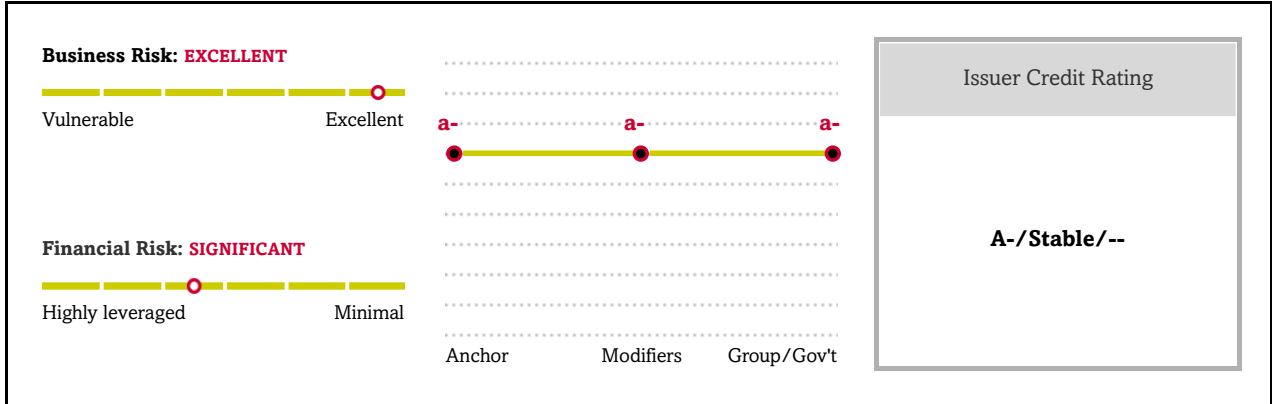
A-/Stable/--

Credit Highlights

Overview

Key strengths	Key risks
Fully regulated, low-risk electric transmission and distribution (wires-only) operations.	Limited geographic and regulatory diversity.
Generally stable regulatory framework in Texas, which we view as credit supportive.	Elevated capital spending will result in negative discretionary cash flow in future years, leading to a dependence on external funding.
Majority of large customer base is residential or commercial, which provides further cash flow stability.	U.S. tax reform has reduced the company's cash flow measures and negatively affected its financial measures.

AEP Texas Inc. operates under Texas' constructive regulatory framework. AEP Texas benefits from the timely recovery of transmission investments and distribution costs through base-rate adjustments and riders (transmission cost of service [TCOS], distribution cost recovery factor [DCRF], and energy efficiency), which mitigate regulatory lag and enable the company to earn close to, or at, its authorized return.

Capital spending and debt leverage will remain elevated. Incremental transmission-related capital spending will result in negative discretionary cash flow. Therefore, we expect AEP Texas' debt leverage, as indicated by its debt to EBITDA, to remain elevated in the mid- to high-4x range.

ATTACHMENT B

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Cities' 3rd, Q. # Cities 3-1
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AEP Texas Inc.

Outlook: Stable

The stable outlook on AEP Texas Inc. reflects our stable outlook on its parent American Electric Power Co. Inc. (AEP). The stable outlook on AEP and its subsidiaries reflects the company's improving business risk profile that now consists almost entirely of solid regulated utility operations. The outlook also incorporates our expectation that the company will generate a funds from operations (FFO)-to-debt ratio in the 14%-15% range through 2020 after factoring in the effects of tax reform.

Downside scenario

We could lower our ratings on AEP and its subsidiaries if the company's financial performance weakens such that FFO to debt remains consistently below 14%. We could also lower the ratings if the company's business risk increases because of ineffective management of regulatory risk or the pursuit of risky unregulated investments.

Upside scenario

While unlikely, we could raise our ratings on AEP and its subsidiaries if the company's financial performance improves such that its FFO to debt remains consistently above 20% and its business risk is unchanged.

Our Base-Case Scenario

Assumptions	Key Metrics

Assumptions

- The economic conditions in the company's service territory continue to improve modestly, supporting some load growth;
- Effective management of regulatory risk and continued cost recovery enables the utility to earn its allowed return on equity;
- In 2019, gross margin growth is affected by tax reform-related customer bill credits/refunds;
- Elevated capital spending of $1.0 billion annually for infrastructure investments; and
- All debt maturities are refinanced.

Key Metrics

	2019E	2020E	2021E
FFO to debt (%)	13.5-15.5	13.5-15.5	13.5-15.5
Debt to EBITDA (x)	4.8-5.2	4.7-5.1	4.4-4.8
FFO cash interest coverage (x)	2.8-3.4	3.4-4.0	3.7-4.3

E--Expected. FFO--Funds from operations.

Base-case projections

- Debt leverage, as measured by debt to EBITDA, in the mid- to high-4x area;
- After capital spending the company's discretionary cash flow will be negative, thus we expect it to partly fund its investments with debt; and

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AEP Texas Inc.

- Adjusted FFO to debt of around 13.5%-15.5% as the negative effects of U.S. tax reform are partially offset by continued cost recovery through various regulatory mechanisms.

Company Description

AEP Texas is a subsidiary of AEP and is engaged in the transmission and distribution (T&D) of electric power to approximately 1.030 million retail customers in western, central, and southern Texas.

Business Risk: Excellent

Our assessment of AEP Texas' business risk profile is based on the company's low-risk, fully regulated T&D wires-only electric utility operations under Texas' generally constructive regulatory framework, which provides for the timely recovery of approved fuel costs and invested capital.

AEP Texas serves a large customer base that spans across multiple regions of Texas and benefits from the company's scale. However, because it operates in one state, the utility lacks geographic diversity. The company also benefits from a diverse customer base, which provides it with some stability if any particular class of customers reduce their usage. Specifically, AEP Texas generates almost two-thirds of its revenue from residential and commercial customers and receives the remaining revenue from the more-volatile industrial class. The company's customer base has demonstrated little growth and its service territory has only modest operating and regulatory diversity.

The utility operates under a generally constructive regulatory framework in Texas that facilitates the timely recovery of distribution and transmission investments. The company's increasing transmission investments will lead to growing rate base opportunities.

The company has a relatively good operating track record given its low-risk, rate-regulated electricity T&D operations, which are safe and reliable.

Peer comparison

Table 1

AEP Texas Inc. -- Peer Comparison				
Industry Sector: Electric				
	AEP Texas Inc.	**Atmos Energy Corp.**	**Oncor Electric Delivery Co. LLC**	**CenterPoint Energy Houston Electric LLC**
Ratings as of March 22, 2019	A-/Stable/--	A/Stable/A-1	A/Stable/A-1	BBB+/Stable/--
	--Fiscal year ended Dec. 31, 2018--	**--Fiscal year ended Sept. 30, 2018--**	**--Fiscal year ended Dec. 31, 2018--**	
(Mil. $)				
Revenue	1,595.3	3,115.5	4,101.0	2,636.0
EBITDA	860.5	1,125.2	1,904.5	946.0
FFO	655.5	996.1	1,366.2	668.9
Net income from cont. oper.	211.3	603.1	545.0	336.0

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AEP Texas Inc.

Table 1

<div style="background-color:#c8102e; color:white; padding:4px;">AEP Texas Inc. -- Peer Comparison (cont.)</div>

Industry Sector: Electric

	AEP Texas Inc.	Atmos Energy Corp.	Oncor Electric Delivery Co. LLC	CenterPoint Energy Houston Electric LLC
Cash flow from operations	636.0	1,132.8	1,514.2	573.9
Capital expenditure	1,410.4	1,460.8	1,754.0	916.0
Free operating cash flow	(774.4)	(328.0)	(239.8)	(342.1)
Discretionary cash flow	(774.4)	(542.9)	(448.8)	(551.1)
Cash and short-term investments	3.1	13.8	3.0	335.0
Debt	4,256.5	3,740.5	8,809.9	3,141.0
Equity	2,580.5	4,770.0	4,728.0	2,682.0
Adjusted ratios				
EBITDA margin (%)	53.9	36.1	46.4	35.9
Return on capital (%)	5.5	7.4	6.5	8.0
EBITDA interest coverage (x)	5.0	8.8	4.4	6.3
FFO cash interest coverage (X)	5.0	6.4	4.9	4.0
Debt/EBITDA (x)	4.9	3.3	4.6	3.3
FFO/debt (%)	15.4	26.6	15.5	21.3
Cash flow from operations/debt (%)	14.9	30.3	17.2	18.3
Free operating cash flow/debt (%)	(18.2)	(8.8)	(2.7)	(10.9)
Discretionary cash flow/debt (%)	(18.2)	(14.5)	(5.1)	(17.5)

FFO--Funds from operations.

Financial Risk: Significant

Our assessment of AEP Texas' stand-alone financial risk profile incorporates the assumptions in our base-case scenario, under which we anticipate that the company's stand-alone adjusted FFO to debt will remain in the 13.5%-15.5% range in future years.

The company's financial metrics are primarily being affected by the negative effects of U.S. tax reform, higher transmission-related capital spending, and the recovery of invested capital through transmission recovery riders. Moreover, its credit metrics also benefit from DCRF riders and modest load growth.

In addition, AEP Texas has been experiencing ongoing discretionary cash flow deficits due to its heightened capital expenditure, which we expect it will partly fund with external debt. We expect the company's adjusted debt to EBITDA to be in the 4.5x-5.0x range.

We base our financial risk assessment on our more moderate financial ratio benchmarks rather than the benchmarks

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AEP Texas Inc.

we use for a typical corporate issuer. This reflects the company's steady cash flow from its low-risk, rate-regulated electric operations and management of regulatory risk.

Financial summary
Table 2

AEP Texas Inc. -- Financial Summary		
Industry Sector: Electric		
	--Fiscal year ended Dec. 31--	
	2018	**2017**
Rating history	A-/Stable/--	A-/Stable/--
(Mil. $)		
Revenue	1,595.3	1,272.8
EBITDA	860.5	607.5
FFO	655.5	588.3
Net income from continuing operations	211.3	310.5
Cash flow from operations	636.0	412.6
Capital expenditure	1,410.4	984.1
Free operating cash flow	(774.4)	(571.5)
Dividends paid	0.0	0.0
Discretionary cash flow	(774.4)	(571.5)
Debt	4,256.5	2,762.5
Preferred stock	0.0	0.0
Equity	2,580.5	2,169.9
Debt and equity	6,837.0	4,932.4
Adjusted ratios		
EBITDA margin (%)	53.9	47.7
EBITDA interest coverage (x)	5.0	5.6
FFO cash interest coverage (x)	5.0	4.9
Debt/EBITDA (x)	4.9	4.5
FFO/debt (%)	15.4	21.3
Cash flow from operations/debt (%)	14.9	14.9
Free operating cash flow/debt (%)	(18.2)	(20.7)
Discretionary cash flow/debt (%)	(18.2)	(20.7)
Net cash flow/capex (%)	46.5	59.8
Return on capital (%)	5.5	6.7
Return on common equity (%)	7.3	15.5
Common dividend payout ratio (un-adj.) (%)	0.0	0.0

FFO--Funds from operations.

Liquidity: Adequate

We assess AEP Texas' liquidity as adequate because we believe its sources of liquidity will cover its uses by more than

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AEP Texas Inc.

1.1x over the next 12 months and anticipate that its net sources will remain positive even if its EBITDA declines by 10%.

We believe AEP Texas has sound banking relationships, the ability to absorb high-impact, low-probability events without refinancing, and a satisfactory standing in the credit markets.

Principal Liquidity Sources	Principal Liquidity Uses
• Estimated cash FFO of about $750 million; • Average available borrowing capacity from the AEP money pool of $500 million; and • Working capital inflows of about $70 million.	• Debt maturities of about $578 million; and • Capital spending of about $607 million.

Debt maturities
- 2019: $501 million
- 2020: $378 million
- 2021: $66 million
- 2022: $493 million

Environmental, Social, And Governance

We consider AEP Texas' environmental footprint in the broader context of its environmental, social, and governance (ESG) factors. The company's exposure to environmental risk is quite manageable compared with those of its electric utility peer group because T&D companies are more favorably positioned than their counterparts that own power-generation assets. The company's T&D system also provides support to ultimate parent AEP's target of reducing the environmental footprint of its generation fleet. Specifically, AEP has committed to reduce the CO_2 emissions from its generating facilities by 80% from 2000 levels by 2050.

From a social perspective, AEP Texas has a strong track record of providing safe and reliable electricity T&D services. Management's cost-reduction efforts have enabled the company to stabilize its operations and maintenance (O&M) costs amid an inflationary economic environment, which has allowed it to offer competitive customer rates. This is important because all T&D companies are proactively moving to deploy capital to upgrade, modernize, and harden their assets in the wake of recent weather events and for technological reasons.

The company's governance factors are consistent with what we see across the industry for other publicly traded utilities.

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Group Influence

We consider AEP Texas to be a core subsidiary of parent AEP because it is highly unlikely to be sold, has a strong long-term commitment from senior management, is successful at what it does, and contributes significantly to the group.

There are no meaningful insulation measures that protect AEP Texas from AEP. Therefore, our issuer credit rating on AEP Texas is in line with our 'a-' group credit profile for AEP's group.

Issue Ratings - Subordination Risk Analysis

Capital structure

- AEP Texas' capital structure consists of about $4 billion of debt, including $3.1 billion of senior unsecured debt and some securitized debt.

Analytical conclusions

- We rate AEP Texas' senior unsecured debt at the same level as the issuer credit rating because it is the debt of a qualified investment-grade utility.

Reconciliation

Table 3

Reconciliation Of AEP Texas Inc. Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. $)										
					--Rolling 12 months ended Dec. 31, 2018--					
AEP Texas Inc. reported amounts.										
	Debt	Shareholders' equity	Revenue	EBITDA	Operating income	Interest expense	EBITDA	Cash flow from operations	Dividends paid	Capital expenditure
	4,125.8	2,580.5	1,594.5	850.8	348.6	147.3	850.8	651.9	--	1,428.8
S&P Global Ratings' adjustments										
Interest expense (reported)	--	--	--	--	--	--	(147.3)	--	--	--
Interest income (reported)	--	--	--	--	--	--	1.8	--	--	--
Current tax expense (reported)	--	--	--	--	--	--	(86.4)	--	--	--
Operating leases	74.4	--	--	15.1	5.2	5.2	9.9	9.9	--	--
Postretirement benefit obligations/deferred compensation	--	--	--	(17.6)	(17.6)	--	(13.3)	(5.4)	--	--
Surplus cash	(3.1)	--	--	--	--	--	--	--	--	--
Capitalized interest	--	--	--	--	--	5.1	(5.1)	(5.1)	--	(5.1)
Securitized stranded costs	--	--	(358.4)	(358.4)	(26.9)	(26.9)	(331.5)	(331.5)	--	--

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Table 3

Reconciliation Of AEP Texas Inc. Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. $) (cont.)									
Asset retirement obligations	22.0	--	--	1.2	1.2	1.2	0.2	(0.9)	--	--
Non-operating income (expense)	--	--	--	--	21.6	--	--	--	--	--
EBITDA - Other	--	--	--	4.3	4.3	--	4.3	--	--	--
Total adjustments	93.4	0.0	(358.4)	(355.4)	(12.2)	(15.4)	(567.4)	(333.0)	0.0	(5.1)

S&P Global Ratings' adjusted amounts

Debt	Equity	Revenue	EBITDA	EBIT	Interest expense	Funds from Operations	Cash flow from operations	Dividends paid	Capital expenditure
4,219.2	2,580.5	1,236.1	495.4	336.4	131.9	283.4	318.9	--	1,423.7

Ratings Score Snapshot

Issuer Credit Rating

A-/Stable/--

Business risk: Excellent

- **Country risk:** Very low
- **Industry risk:** Very low
- **Competitive position:** Strong

Financial risk: Significant

- **Cash flow/Leverage:** Significant

Anchor: a-

Modifiers

- **Diversification/Portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Adequate (no impact)
- **Management and governance:** Satisfactory (no impact)
- **Comparable rating analysis:** Neutral (no impact)

Stand-alone credit profile : a-

- **Group credit profile:** a-
- **Entity status within group:** Core (no impact)

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Related Criteria

- Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018

- Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017

- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014

- Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013

- General: Corporate Methodology, Nov. 19, 2013

- Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013

- Methodology: Industry Risk, Nov. 19, 2013

- General Criteria: Group Rating Methodology, Nov. 19, 2013

- Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013

- Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012

- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Business And Financial Risk Matrix

Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	**Significant**	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	**a-**	bbb	bbb-/bb+
Strong	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of March 26, 2019)

AEP Texas Inc.

Issuer Credit Rating	A-/Stable/--
Senior Unsecured	A-

Issuer Credit Ratings History

02-Feb-2017	A-/Stable/--
04-Jan-2017	BBB+/Watch Pos/--

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Investor Meetings
May 2019

Strong Dividend Growth

Targeted payout ratio 60-70% of operating earnings

Over 108 years of consecutive quarterly dividends

Dividend growth in line with earnings

Year	Value
2010	$1.71
2011	$1.85
2012	$1.88
2013	$1.95
2014	$2.03
2015	$2.15
2016	$2.27
2017	$2.39
2018	$2.53
2019 *	$2.68

4.7% CAGR

6.2% CAGR

4-6% Earnings Growth Rate

5-7% Earnings Growth Rate
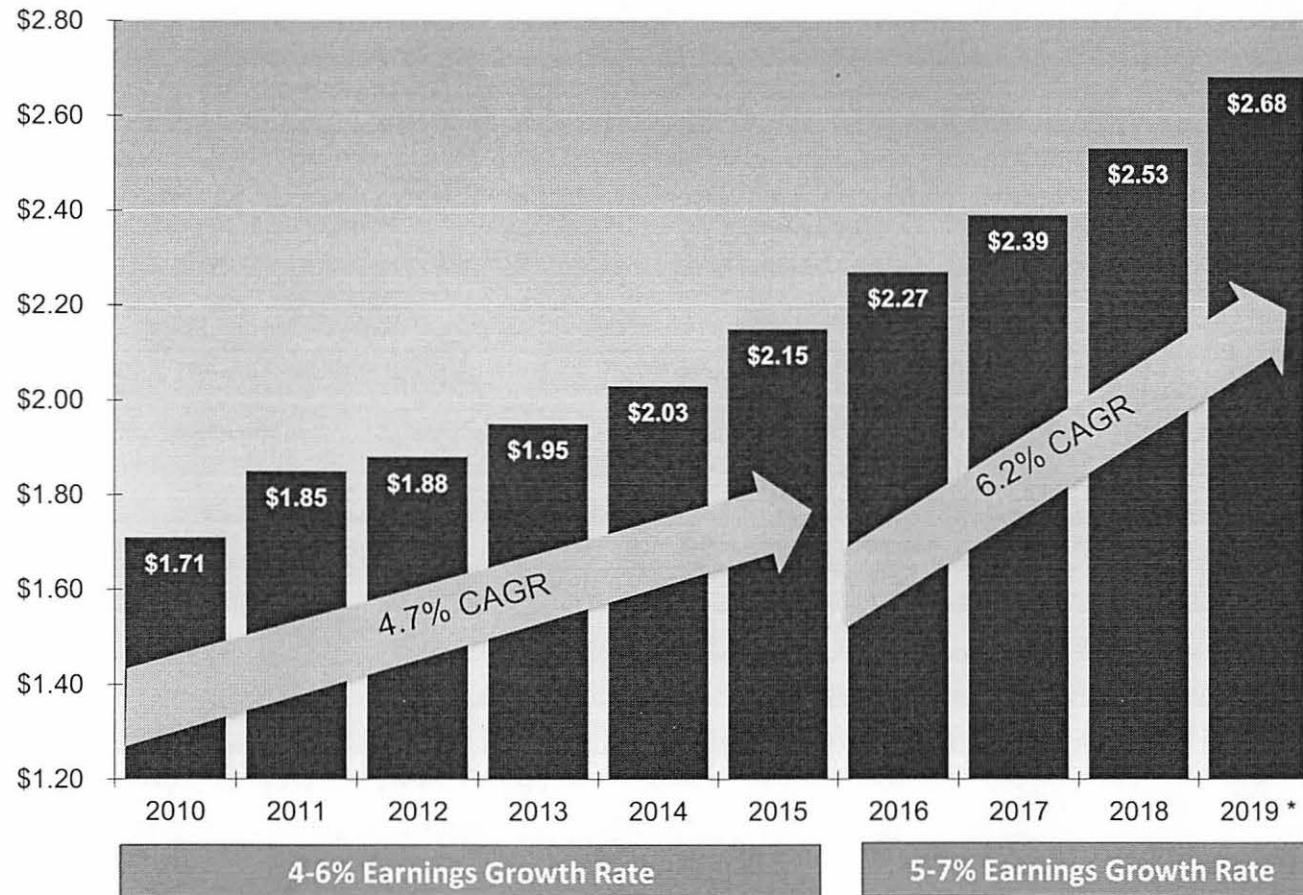
EPS Growth + Dividend Yield = 9 to 10% Annual Return Opportunity

* Subject to Board approval

Recently Settled Rate Cases

APCo – West Virginia

Docket #:	18-0646-E-42T
Filing Date:	05/09/2018
Requested Rate Base:	$4.1B
Requested ROE:	10.22%
Cap Structure:	49.84%D / 50.16%E
Gross Revenue Increase:	$95M
	(Less $32M Depr)
Net Revenue Increase:	$63M
Test Year:	12/31/2017

Settlement Summary

Settlement Filed:	11/13/2018
Commission Order:	02/27/2019
Effective Date:	03/06/2019
ROE:	9.75%
Net Revenue Increase:	$44M
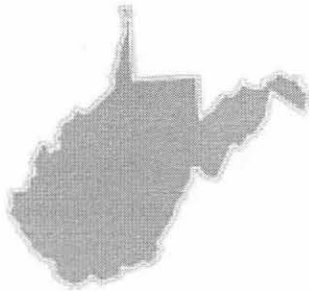
PSO – Oklahoma

Docket #:	201800097
Filing Date:	09/26/2018
Requested Rate Base:	$2.5B
Requested ROE:	10.3%
Cap Structure:	51.86%D / 48.14%E
Gross Revenue Increase:	$88M
	(Less $20M D&A)
Net Revenue Increase:	$68M
Test Year:	03/31/2018

Settlement Summary

Settlement Filed:	02/27/2019
Commission Order:	03/14/2019
Effective Date:	First Billing Cycle in April
ROE:	9.4%
Net Revenue Increase:	$46M
	(No change in Depr)

Full Transmission Tracker
Partial Distribution Tracker
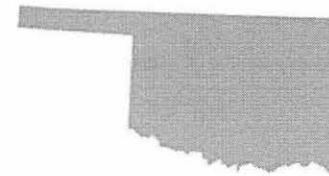
SOAH DOCKET NO. 473-19-4421
PUC DOCKET NO. 49494

<u>AEP TEXAS INC.'S RESPONSE TO CITIES SERVED BY AEP TEXAS'</u>
<u>THIRD REQUEST FOR INFORMATION</u>

Question No. Cities 3-12:

Refer to Exhibit RBH-5. Provide updated returns on equity from March 14, 2019 through the most recent date available.

Response No. Cities 3-12:

Please see Attachment Cities 3-12 for rate case information as reported by Regulatory Research Associates, including the authorized return on equity, for rate cases completed between March 14, 2019 and May 16, 2019.

Prepared By: Jennifer Nelson   Title: Director, ScottMadden, Inc.

Sponsored By: Robert B. Hevert   Title: Partner, ScottMadden, Inc.

S&P Global
Market Intelligence

Rate Case History (Past Rate Cases)

List Name
Company List All
States All
Years 2019
Service Type Electric

State	Company	Parent Company Ticker	Docket	Rate Case Service Type	Case Type	Date of Final Order	Decision Type	Rate Increase ($M)	Phase-In?	Interim Authorized?	Authorized Return on Original Cost Rate (%)	Authorized Return on Equity (%)	Authorized Common Equity to Total Capital (%)	Rate Case Test Year End Date	Rate Base ($M)	Rate Base Valuation Method	Rate Case Duration (months)
New York	Orange & Rockland Utlts Inc.	ED	C-18-E-0067	Electric	Distribution	3/14/2019	Settled	13.4	Yes	No	6.97	9.00	48.00	12/2019	877.79	Average	13
Oklahoma	Public Service Co. of OK	AEP	Ca-PUD201800097	Electric	Vertically Integrated	3/14/2019	Settled	46.0	No	No	6.97	9.40	NA	03/2018	NA	NA	5
Maryland	Potomac Edison Co.	FE	C-9490	Electric	Distribution	3/22/2019	Fully Litigated	6.2	No	No	7.15	9.65	52.82	06/2018	461.68	Average	7
Florida	Duke Energy Florida LLC	DUK	D-20180149	Electric	Limited-Issue Rider	4/2/2019	Settled	29.2	No	No	NA	10.50	NA	NA	NA	NA	8
Virginia	Virginia Electric & Power Co.	D	C-PUR-2018-00101 (Rider US-3)	Electric	Limited-Issue Rider	4/15/2019	Fully Litigated	10.4	No	No	6.87	9.20	51.37	02/2020	102.06	Average	8
Maine	Emera Maine	EMA	D-2019-00019	Electric	Distribution	4/23/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
Kentucky	Kentucky Utilities Co.	PPL	C-2018-00294	Electric	Vertically Integrated	4/30/2019	Settled	55.9	No	No	NA	9.73	NA	04/2020	NA	NA	7
Kentucky	Louisville Gas & Electric Co.	PPL	C-2018-00295 (elec.)	Electric	Vertically Integrated	4/30/2019	Settled	2.1	No	No	NA	9.73	NA	04/2020	NA	NA	7
South Carolina	Duke Energy Carolinas LLC	DUK	D-2018-319-E	Electric	Vertically Integrated	5/1/2019	Fully Litigated	106.9	No	No	7.16	9.50	53.00	12/2017	NA	Year-end	5
Michigan	DTE Electric Co.	DTE	C-U-20162	Electric	Vertically Integrated	5/2/2019	Fully Litigated	273.3	No	No	5.48	10.00	37.94	04/2020	17,058.83	Average	10
Virginia	Appalachian Power Co.	AEP	C-PUR-2018-00118 (RAC-EE)	Electric	Limited-Issue Rider	5/2/2019	Fully Litigated	(0.0)	No	No	NA	9.42	NA	06/2020	NA	NA	7
Virginia	Virginia Electric & Power Co.	D	C-PUR-2017-00168 (Rider DSM)	Electric	Limited-Issue Rider	5/2/2019	Fully Litigated	17.9	No	No	6.87	9.20	51.37	06/2020	NA	NA	7
South Carolina	Duke Energy Progress LLC	DUK	2018-318-E	Electric	Vertically Integrated	5/8/2019	Fully Litigated	41.5	No	No	NA	9.50	53.00	12/2017	NA	Year-end	6
South Dakota	Otter Tail Power Co.	OTTR	D-EL18-021	Electric	Vertically Integrated	5/14/2019	Fully Litigated	NA	No	Yes	NA	8.75	52.92	NA	NA	NA	12
California	Southern California Edison Co.	EIX	A-16-09-001	Electric	Vertically Integrated	5/16/2019	Fully Litigated	(523.0)	Yes	No	7.43	NA	NA	NA	22,336.48	Average	32

AEP TEXAS PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
ALLETE, Inc.	High Price ($)	77.040	82.950	84.260	83.430	83.350	86.520
	Low Price ($)	72.500	74.550	80.400	78.860	78.980	80.700
	Avg. Price ($)	74.770	78.750	82.330	81.145	81.165	83.610
	Dividend ($)	0.560	0.588	0.588	0.588	0.588	0.588
	Mo. Avg. Div.	3.00%	2.99%	2.86%	2.90%	2.90%	2.81%
	6 mos. Avg.	2.91%					
Alliant Energy Corp.	High Price ($)	44.550	45.990	47.910	47.410	49.080	50.170
	Low Price ($)	40.750	43.120	45.370	45.720	46.010	46.840
	Avg. Price ($)	42.650	44.555	46.640	46.565	47.545	48.505
	Dividend ($)	0.355	0.355	0.355	0.355	0.355	0.355
	Mo. Avg. Div.	3.33%	3.19%	3.04%	3.05%	2.99%	2.93%
	6 mos. Avg.	3.09%					
Ameren Corp.	High Price ($)	69.620	72.360	74.910	73.770	76.140	77.770
	Low Price ($)	63.130	67.900	70.410	70.270	71.240	72.950
	Avg. Price ($)	66.375	70.130	72.660	72.020	73.690	75.360
	Dividend ($)	0.475	0.475	0.475	0.475	0.475	0.475
	Mo. Avg. Div.	2.86%	2.71%	2.61%	2.64%	2.58%	2.52%
	6 mos. Avg.	2.65%					
Avangrid, Inc.	High Price ($)	50.220	51.350	50.680	52.855	51.290	52.320
	Low Price ($)	47.450	47.775	48.030	49.560	48.850	50.120
	Avg. Price ($)	48.835	49.563	49.355	51.208	50.070	51.220
	Dividend ($)	0.440	0.440	0.440	0.440	0.440	0.440
	Mo. Avg. Div.	3.60%	3.55%	3.57%	3.44%	3.52%	3.44%
	6 mos. Avg.	3.52%					
Black Hills Corp.	High Price ($)	67.970	71.580	74.770	74.140	78.520	82.010
	Low Price ($)	60.820	65.960	70.750	70.450	71.310	75.630
	Avg. Price ($)	64.395	68.770	72.760	72.295	74.915	78.820
	Dividend ($)	0.505	0.505	0.505	0.505	0.505	0.505
	Mo. Avg. Div.	3.14%	2.94%	2.78%	2.79%	2.70%	2.56%
	6 mos. Avg.	2.82%					
CMS Energy Corp.	High Price ($)	52.360	54.480	56.300	55.600	57.710	59.340
	Low Price ($)	47.970	51.130	53.610	53.550	54.070	55.370
	Avg. Price ($)	50.165	52.805	54.955	54.575	55.890	57.355
	Dividend ($)	0.383	0.383	0.383	0.383	0.383	0.383
	Mo. Avg. Div.	3.05%	2.90%	2.79%	2.81%	2.74%	2.67%
	6 mos. Avg.	2.83%					

AEP TEXAS PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
Consolidated Edison, Inc.	High Price ($)	77.990	82.730	85.870	86.230	88.920	90.510
	Low Price ($)	73.300	75.900	81.850	83.320	83.610	85.550
	Avg. Price ($)	75.645	79.315	83.860	84.775	86.265	88.030
	Dividend ($)	0.715	0.740	0.740	0.740	0.740	0.740
	Mo. Avg. Div.	3.78%	3.73%	3.53%	3.49%	3.43%	3.36%
	6 mos. Avg.	3.55%					
DTE Energy Co.	High Price ($)	118.320	123.840	126.070	125.760	129.990	131.870
	Low Price ($)	107.330	112.860	121.710	122.050	122.550	123.910
	Avg. Price ($)	112.825	118.350	123.890	123.905	126.270	127.890
	Dividend ($)	0.945	0.945	0.945	0.945	0.945	0.945
	Mo. Avg. Div.	3.35%	3.19%	3.05%	3.05%	2.99%	2.96%
	6 mos. Avg.	3.10%					
Duke Energy Corp.	High Price ($)	88.480	90.740	91.670	91.330	91.060	90.680
	Low Price ($)	82.460	86.480	88.660	87.930	84.460	84.280
	Avg. Price ($)	85.470	88.610	90.165	89.630	87.760	87.480
	Dividend ($)	0.928	0.928	0.928	0.928	0.928	0.928
	Mo. Avg. Div.	4.34%	4.19%	4.12%	4.14%	4.23%	4.24%
	6 mos. Avg.	4.21%					
Evergy, Inc.	High Price ($)	57.860	59.940	58.590	58.200	59.850	61.540
	Low Price ($)	55.130	54.570	54.600	56.330	56.650	57.910
	Avg. Price ($)	56.495	57.255	56.595	57.265	58.250	59.725
	Dividend ($)	0.475	0.475	0.475	0.475	0.475	0.475
	Mo. Avg. Div.	3.36%	3.32%	3.36%	3.32%	3.26%	3.18%
	6 mos. Avg.	3.30%					
Eversource Energy	High Price ($)	69.820	70.620	72.260	71.780	75.430	77.870
	Low Price ($)	63.100	68.040	68.380	69.090	70.060	72.860
	Avg. Price ($)	66.460	69.330	70.320	70.435	72.745	75.365
	Dividend ($)	0.505	0.505	0.535	0.535	0.535	0.535
	Mo. Avg. Div.	3.04%	2.91%	3.04%	3.04%	2.94%	2.84%
	6 mos. Avg.	2.97%					
Hawaiian Electric Ind.	High Price ($)	37.230	38.690	41.100	41.710	42.590	44.080
	Low Price ($)	35.060	36.610	38.050	40.220	40.740	41.440
	Avg. Price ($)	36.145	37.650	39.575	40.965	41.665	42.760
	Dividend ($)	0.310	0.320	0.320	0.320	0.320	0.320
	Mo. Avg. Div.	3.43%	3.40%	3.23%	3.12%	3.07%	2.99%
	6 mos. Avg.	3.21%					

AEP TEXAS PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
NextEra Energy, Inc.	High Price ($)	180.880	189.390	195.550	194.650	204.730	208.910
	Low Price ($)	168.660	176.130	186.570	187.430	187.300	196.370
	Avg. Price ($)	174.770	182.760	191.060	191.040	196.015	202.640
	Dividend ($)	1.110	1.250	1.250	1.250	1.250	1.250
	Mo. Avg. Div.	2.54%	2.74%	2.62%	2.62%	2.55%	2.47%
	6 mos. Avg.	2.59%					
Northwestern Corp.	High Price ($)	64.110	68.830	71.770	70.920	73.070	74.470
	Low Price ($)	57.330	62.320	68.010	67.380	68.530	70.200
	Avg. Price ($)	60.720	65.575	69.890	69.150	70.800	72.335
	Dividend ($)	0.550	0.550	0.575	0.575	0.575	0.575
	Mo. Avg. Div.	3.62%	3.35%	3.29%	3.33%	3.25%	3.18%
	6 mos. Avg.	3.34%					
OGE Energy Corp.	High Price ($)	41.190	42.870	43.760	43.250	43.360	44.410
	Low Price ($)	38.040	40.170	41.820	40.900	40.420	41.530
	Avg. Price ($)	39.615	41.520	42.790	42.075	41.890	42.970
	Dividend ($)	0.365	0.365	0.365	0.365	0.365	0.365
	Mo. Avg. Div.	3.69%	3.52%	3.41%	3.47%	3.49%	3.40%
	6 mos. Avg.	3.49%					
Otter Tail Corp.	High Price ($)	49.330	50.610	51.700	51.370	53.200	53.350
	Low Price ($)	45.940	47.630	48.200	48.480	48.630	49.500
	Avg. Price ($)	47.635	49.120	49.950	49.925	50.915	51.425
	Dividend ($)	0.335	0.350	0.350	0.350	0.350	0.350
	Mo. Avg. Div.	2.81%	2.85%	2.80%	2.80%	2.75%	2.72%
	6 mos. Avg.	2.79%					
Pinnacle West Capital Corp.	High Price ($)	88.420	94.020	97.270	96.330	97.920	99.810
	Low Price ($)	81.630	86.550	91.900	93.140	91.950	93.350
	Avg. Price ($)	85.025	90.285	94.585	94.735	94.935	96.580
	Dividend ($)	0.738	0.738	0.738	0.738	0.738	0.738
	Mo. Avg. Div.	3.47%	3.27%	3.12%	3.11%	3.11%	3.05%
	6 mos. Avg.	3.19%					
PNM Resources, Inc.	High Price ($)	43.200	44.710	47.920	47.420	48.350	52.100
	Low Price ($)	39.710	41.140	43.430	44.280	45.570	47.090
	Avg. Price ($)	41.455	42.925	45.675	45.850	46.960	49.595
	Dividend ($)	0.290	0.290	0.290	0.290	0.290	0.290
	Mo. Avg. Div.	2.80%	2.70%	2.54%	2.53%	2.47%	2.34%
	6 mos. Avg.	2.56%					

AEP TEXAS PROXY GROUP
AVERAGE PRICE, DIVIDEND AND DIVIDEND YIELD

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
Portland General Electric Co.	High Price ($)	48.490	50.450	52.600	52.550	53.930	55.980
	Low Price ($)	44.030	47.050	49.650	49.790	51.660	52.720
	Avg. Price ($)	46.260	48.750	51.125	51.170	52.795	54.350
	Dividend ($)	0.363	0.363	0.363	0.363	0.363	0.385
	Mo. Avg. Div.	3.13%	2.97%	2.84%	2.83%	2.75%	2.83%
	6 mos. Avg.	2.89%					
Southern Company	High Price ($)	48.680	50.540	52.650	53.290	54.770	56.540
	Low Price ($)	43.260	47.810	49.350	50.890	52.160	53.150
	Avg. Price ($)	45.970	49.175	51.000	52.090	53.465	54.845
	Dividend ($)	0.600	0.600	0.600	0.600	0.620	0.620
	Mo. Avg. Div.	5.22%	4.88%	4.71%	4.61%	4.64%	4.52%
	6 mos. Avg.	4.76%					
WEC Energy Group, Inc.	High Price ($)	73.510	76.670	80.050	79.030	83.010	85.700
	Low Price ($)	67.210	71.720	75.320	75.880	76.610	79.460
	Avg. Price ($)	70.360	74.195	77.685	77.455	79.810	82.580
	Dividend ($)	0.553	0.590	0.590	0.590	0.590	0.590
	Mo. Avg. Div.	3.14%	3.18%	3.04%	3.05%	2.96%	2.86%
	6 mos. Avg.	3.04%					
Xcel Energy	High Price ($)	52.580	55.360	57.510	56.710	59.620	61.970
	Low Price ($)	47.700	51.530	54.290	54.460	55.260	56.370
	Avg. Price ($)	50.140	53.445	55.900	55.585	57.440	59.170
	Dividend ($)	0.380	0.380	0.405	0.405	0.405	0.405
	Mo. Avg. Div.	3.03%	2.84%	2.90%	2.91%	2.82%	2.74%
	6 mos. Avg.	2.87%					
Monthly Avg. Dividend Yield		3.35%	3.24%	3.15%	3.14%	3.10%	3.03%
6-month Avg. Dividend Yield		3.17%					

Source: Yahoo! Finance

AEP TEXAS PROXY GROUP
DCF Growth Rate Analysis

Company	(1) Value Line DPS	(2) Value Line EPS	(3) Zacks	(4) Yahoo! Finance
ALLETE, Inc.	5.00%	5.00%	7.20%	6.00%
Alliant Energy Corporation	5.50%	6.50%	5.40%	4.80%
Ameren Corp.	6.00%	6.50%	6.20%	4.90%
Avangrid, Inc.	3.00%	10.00%	7.90%	6.80%
Black Hills Corporation	6.50%	6.00%	4.80%	3.63%
CMS Energy Corporation	7.00%	7.00%	6.40%	7.08%
Consolidated Edison	3.50%	3.00%	2.00%	3.41%
DTE Energy Company	6.00%	5.50%	6.00%	4.05%
Duke Energy	3.00%	6.00%	4.80%	7.13%
Evergy, Inc.	NMF	NMF	6.60%	6.15%
Eversource Energy	5.50%	5.50%	5.60%	5.63%
Hawaiian Electric	3.00%	4.50%	5.60%	6.10%
NextEra Energy, Inc.	10.00%	10.00%	7.90%	8.23%
Northwestern Corporation	4.50%	3.00%	3.00%	3.51%
OGE Energy Corp.	7.50%	6.50%	4.60%	3.80%
Otter Tail Corporation	4.00%	5.00%	7.00%	9.00%
Pinnacle West Capital Corp.	6.00%	5.00%	5.00%	5.01%
PNM Resources, Inc.	7.00%	8.50%	5.20%	6.15%
Portland General Electric Company	6.50%	4.50%	4.90%	5.20%
Southern Company	3.00%	3.50%	4.50%	2.17%
WEC Energy Group	6.00%	6.00%	5.90%	5.82%
Xcel Energy Inc.	6.00%	5.50%	5.60%	6.24%
Averages excluding negatives	5.45%	5.86%	5.55%	5.49%
Median Values excluding negatives	6.00%	5.50%	5.60%	5.73%

Sources: Value Line Investment Survey, April 26, May 17, and June 14, 2019
Yahoo! Finance growth rates retrieved June 26, 2019
Zacks growth rates retrieved June 26, 2019
NMF = No meaningful figure

AEP TEXAS 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	3.17%	3.17%	3.17%	3.17%	3.17%
Average Growth Rate	5.45%	5.86%	5.55%	5.49%	5.59%
Expected Div. Yield	3.25%	3.26%	3.26%	3.25%	3.26%
DCF Return on Equity	*8.70%*	*9.12%*	*8.81%*	*8.74%*	*8.85%*
Method 2:					
Dividend Yield	3.17%	3.17%	3.17%	3.17%	3.17%
Median Growth Rate	6.00%	5.50%	5.60%	5.73%	5.71%
Expected Div. Yield	3.26%	3.25%	3.26%	3.26%	3.26%
DCF Return on Equity	*9.26%*	*8.75%*	*8.86%*	*8.99%*	*8.97%*

AEP TEXAS PROXY GROUP
Capital Asset Pricing Model Analysis

30-Year Treasury Bond, Value Line Beta

Line No.		Value Line
1	Market Required Return Estimate	11.79%
2	Risk-free Rate of Return, 30-Year Treasury Bond	
3	Average of Last Six Months	2.90%
4	Risk Premium	
5	(Line 1 minus Line 3)	8.90%
6	Comparison Group Beta	0.59
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	5.21%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	8.11%

5-Year Treasury Bond, Value Line Beta

1	Market Required Return Estimate	11.79%
2	Risk-free Rate of Return, 5-Year Treasury Bond	
3	Average of Last Six Months	2.29%
4	Risk Premium	
5	(Line 1 minus Line 3)	9.50%
6	Comparison Group Beta	0.59
7	Comparison Group Beta * Risk Premium	
8	(Line 5 * Line 6)	5.57%
9	CAPM Return on Equity	
10	(Line 3 plus Line 8)	7.86%

AEP TEXAS PROXY GROUP
Capital Asset Pricing Model Analysis

Supporting Data for CAPM Analyses

30 Year Treasury Bond Data		5 Year Treasury Bond Data	
	Avg. Yield		Avg. Yield
January-19	3.04%	January-19	2.54%
February-19	3.02%	February-19	2.49%
March-19	2.98%	March-19	2.37%
April-19	2.94%	April-19	2.33%
May-19	2.82%	May-19	2.19%
June-19	2.57%	June-19	1.83%
6 month average	2.90%	6 month average	2.29%

Source: www.federalreserve.gov/datadownload/

Value Line Market Return Data:		Comparison Group Betas:	Value Line
Forecasted Data:		ALLETE, Inc.	0.65
		Alliant Energy Corporation	0.60
Value Line Median Growth Rates:		Ameren Corp.	0.60
Earnings	11.00%	Avangrid, Inc.	0.40
Book Value	8.00%	Black Hills Corporation	0.80
Average	9.50%	CMS Energy Corporation	0.55
Average Dividend Yield	1.04%	Consolidated Edison	0.45
Estimated Market Return	10.59%	DTE Energy Company	0.55
		Duke Energy	0.50
Value Line Projected 3-5 Yr.		Evergy, Inc.	NMF
Median Annual Total Return	13.00%	Eversource Energy	0.60
		Hawaiian Electric	0.60
Average of Projected Mkt.		NextEra Energy, Inc.	0.60
Returns	11.79%	Northwestern Corporation	0.60
		OGE Energy Corp.	0.80
Source: Value Line Investment Survey		Otter Tail Corporation	0.70
for Windows retrieved June 25, 2019		Pinnacle West Capital Corp.	0.55
		PNM Resources, Inc.	0.65
		Portland General Electric Company	0.60
		Southern Company	0.50
		WEC Energy Group	0.50
		Xcel Energy Inc.	0.50
		Average	0.59
		Source: Value Line Investment Survey	

AEP TEXAS
Capital Asset Pricing Model Analysis
Historic Market Premium

	Arithmetic Mean	Adjusted Arithmetic Mean
Long-Term Annual Return on Stocks	11.90%	
Long-Term Annual Income Return on Long-Term Treas. Bonds	5.00%	
Historical Market Risk Premium	6.90%	6.14%
Comparison Group Beta, Value Line	0.59	0.59
Beta * Market Premium	4.04%	3.60%
Current 30-Year Treasury Bond Yield	2.90%	2.90%
CAPM Cost of Equity, Value Line Beta	**6.94%**	**6.49%**

Source: *2019 SBBI Yearbook, Stocks, Bonds, Bills, and Inflation*, Duff and Phelps; pp. 6-17, 10-31

Proxy Group 2018 Common Equity Ratios

ALLETE, Inc.	60.1%
Alliant Energy Corporation	46.7%
Ameren Corporation	48.8%
Avangrid, Inc.	73.8%
Black Hills Corporation	42.5%
CMS Energy Corporation	30.7%
Consolidated Edison, Inc.	48.9%
DTE Energy Company	45.8%
Duke Energy Corporation	46.2%
Evergy, Inc	60.0%
Eversource Energy	46.9%
Hawaiian Electric Industries, Inc.	51.7%
NextEra Energy, Inc.	56.0%
NorthWestern Corporation	47.8%
OGE Energy Corp.	58.0%
Otter Tail Corporation	55.3%
Pinnacle West Capital Corporation	53.0%
PNM Resources, Inc.	38.6%
Portland General Electric Company	53.5%
Southern Company	37.6%
WEC Energy Group, Inc.	49.4%
Xcel Energy Inc.	43.6%
Average	49.8%

Source: Value Line Investment Survey