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

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

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

---

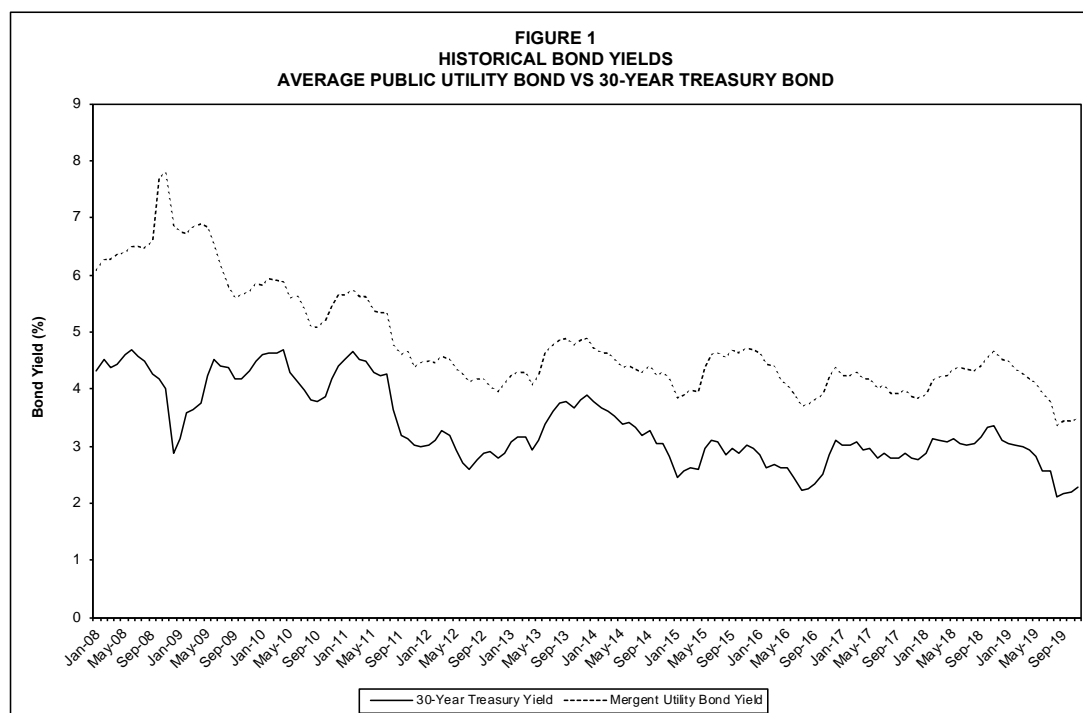2   (https://www.federalreserve.gov/monetarypolicy.htm)

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.

[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.

Figure 2
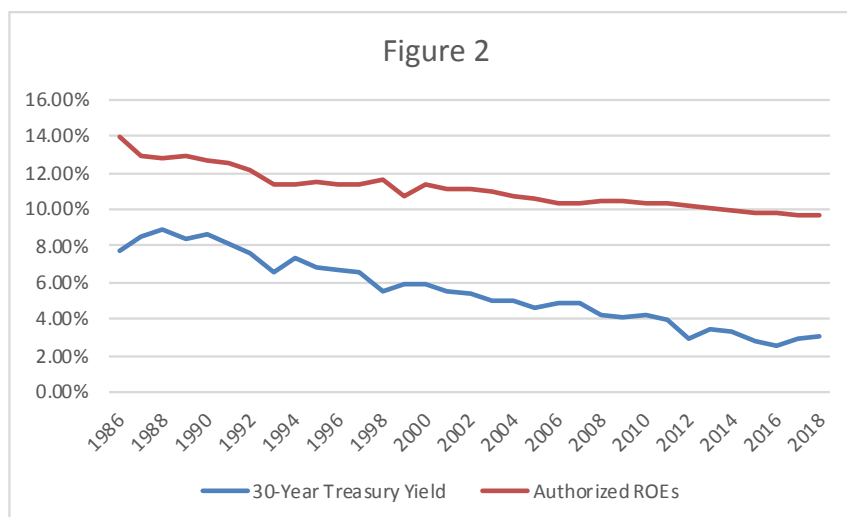
1

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

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:

$$15 \qquad k = {}^{D_1}\!/_{P_0} + g$$

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

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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

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

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

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:

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

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

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

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.

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```
                        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

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1   Dr. Morin also rejected the use of 1 + ½ *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

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

J. Kennedy and Associates, Inc.

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?**
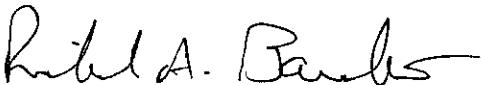
22 A.   Yes.

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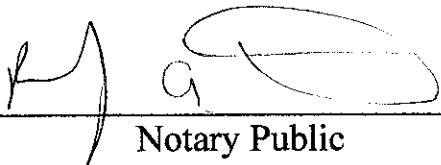
STATE OF GEORGIA   )

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

Sworn to and subscribed before me on this
13th day of December 2019.

_____
Notary Public
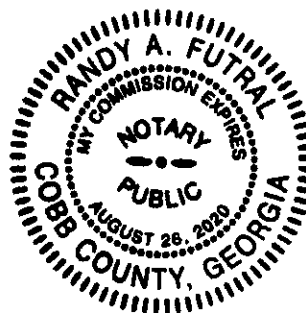
COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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
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 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 HeallthCare 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
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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

J. KENNEDY AND ASSOCIATES, INC.

**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

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

Line No.		
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%**