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 NATURAL GAS RATES; 2) APPROVAL OF NEW TARIFFS, AND 3) ALL OTHER REQUIRED APPROVALS, WAIVERS, AND RELIEF	)	CASE NO. 2021-00190

ATTORNEY GENERAL'S RESPONSES TO DATA REQUESTS OF THE KENTUCKY PUBLIC SERVICE COMMISSION STAFF

The intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention ("AG"), submits the following responses to data requests of the Kentucky Public Service Commission Staff in the above-styled matters.

Respectfully submitted,

DANIEL CAMERON
ATTORNEY GENERAL

____
LAWRENCE W. COOK
J. MICHAEL WEST
ANGELA M. GOAD
JOHN G. HORNE II
ASSISTANT ATTORNEYS GENERAL
1024 CAPITAL CENTER DR., STE. 200
FRANKFORT, KY 40601
(502) 696-5453
FAX: (502) 564-2698
Larry.Cook@ky.gov
Michael.West@ky.gov
Angela.Goad@ky.gov
John.Horne@ky.gov

<u>Certificate of Service and Filing</u>

Pursuant to the Commission's Orders in Case No. 2020-00085, and in accord with all other applicable law, Counsel certifies that an electronic copy of the forgoing was served and filed by e-mail to the parties of record. Counsel further certifies that the responses set forth herein are true and accurate to the best of their knowledge, information, and belief formed after a reasonable inquiry.

This 1st day of October, 2021

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Assistant Attorney General

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 1
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Refer to the Direct Testimony of Lane Kollen (Kollen Testimony), pages 4–5. Mr. Kollen questions Duke Energy Kentucky, Inc.'s (Duke Kentucky) assumptions and consistency with historical revenues and expenses. Other than the examples given with the capital structure components, provide other examples where Mr. Kollen believes the assumptions are unreasonable and inconsistent with historical patterns.

RESPONSE:
Refer to the Direct Testimony of Mr. Kollen at pages 9-12 concerning the discussion of commercial gas transportation revenues.

Refer to the Direct Testimony of Mr. Kollen at pages 12-16 concerning the discussion of developmental Customer Connect O&M expense.

Refer to the Direct Testimony of Mr. Kollen at pages 16-18 concerning the discussion of projected payroll taxes applied to projected incentive compensation.

WITNESS / RESPONDENT RESPONSIBLE:
LANE KOLLEN

QUESTION No. 2
Page 1 of 1

Refer to the Kollen Testimony, page 34. Provide support for Mr. Kollen's assertion that Duke Kentucky's $50 million increase in common equity in September 2021 will be used to reduce money pool borrowings.

RESPONSE:

Refer to footnote 31 at page 34, which cites the response to AG 1-47. That response, duplicated as Exhibit___(LK-14), provides the Company's projection of each capital structure component by month including that of August 2021 and September 2021. The Company's projected changes during September provide the basis for Mr. Kollen's statement.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 3

Refer to the Direct Testimony of Richard A. Baudino (Baudino Testimony), in general.

a. Provide Exhibits RAB-2-6 in Excel spreadsheet format with all formulas, columns, and rows unprotected and fully accessible.
b. For each of the return on equity (ROE) methods employed, provide a separate discussion of the assumptions required and why each assumption can reasonably be assumed. If assumptions cannot be reasonably assumed, explain why not.

RESPONSE:

a. Please refer to the attached spreadsheet.

b. Mr. Baudino provided a general explanation of the assumptions for the constant growth version of the Discounted Cash Flow ("DCF") model on page 16 and 17 of his Direct Testimony. One additional assumption of this model is that dividends, earnings, and book value all grow at the same rate over time. In his book *New Regulatory Finance*, page 252, Dr. Roger Morin presented four crucial assumptions embodied in the General DCF model as follows:

1. Investors evaluate common stocks in the classical valuation framework and trade securities rationally at prices reflecting their perceptions of value.
2. Investors discount the expected cash flows at the same rate, K, in every future period.
3. The discount rate, K, obtained from the fundamental DCF equation corresponds to the specific stream of future cash flows alone, and no other.
4. Dividends, rather than earnings, constitute the source of value to the investor.

Dr. Morin also listed additional assumptions for the standard DCF model as follows on pages 255 - 258:

1. The discount rate, K, must exceed the growth rate, g.

2. The dividend growth rate is constant in every year to infinity.

3. Investors require the same return, K, every year.

4. No external financing.

QUESTION No. 3
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Mr. Baudino also provided an overview of the Capital Asset Pricing Model ("CAPM") foundation and assumptions on pages 21 through 23 of his Direct Testimony. On pages 147 - 148, Dr. Morin noted that the CAPM has two general assumptions that, in his view, overshadow the others:

1. Capital markets are competitive and efficient, and information is freely available to all investors.
2. Investors are rational profit-maximizers who pursue their monetary self-interests and demand higher returns for higher risks.

Please refer to Chapter 5 and Appendix 5-A of *New Regulatory Finance* for a thorough discussion of the additional assumptions underlying the CAPM.

The assumptions underlying the DCF and CAPM support these models, which have been accepted in regulatory jurisdictions throughout the United States. Their assumptions are not always met in practice in the real world. Nonetheless, these models are still useful in attempting to estimate the investor required ROE. As Mr. Baudino also pointed out in his Direct Testimony, the CAPM has shortcomings that make it less reliable for estimating the investor required ROE.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 4
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Refer to the Baudino Testimony, page 16, line 2–4. Explain why the capital asset pricing model (CAPM) analysis produces less reliable estimates of ROE.

RESPONSE:

Mr. Baudino explained his concerns regarding the CAPM on page 23, line 20 through page 25, line 8. The variability and wide range of CAPM results is illustrated in the wide range of results presented by Mr. D'Ascendis and Mr. Baudino. Mr. D'Ascendis' results ranged from 11.51% - 11.73%. Mr. Baudino's CAPM results ranged from 7.58% - 9.07%.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 5
Page 1 of 1

Refer to the Baudino Testimony, page 18, lines 1–6.

a. Explain whether a proxy group of seven regulated gas distribution utilities represents a large enough representative sample on which to derive statistically significant ROE estimates.
b. In addition to using gas utilities, explain whether using water utilities as additional proxy companies would be appropriate in the DCF and CAPM analyses.

RESPONSE:

a. In this case, it is Mr. Baudino's conclusion that the proxy group of seven gas distribution companies represents a large enough sample to reasonably estimate the required ROE for the proxy group and for Duke Energy Kentucky.

b. Mr. Baudino would not advise including water utilities in a proxy group of gas distribution companies given the different markets in which water utilities operate and the attendant different business risks faced by water utilities.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 6
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Refer to the Baudino Testimony, page 18, lines 9–11. Explain why six months would be the most reasonable period over which to estimate dividend yields.

RESPONSE:

Six months is a reasonable period over which to measure the current dividend yield for the proxy group. This length of time is not overly long compared to one year, in which stock prices earlier in the period may no longer reflect current investor requirements. However, six months is a reasonable period over which to smooth out any extreme fluctuations that may occur in stock prices, making shorter periods such as one or three months unreflective of longer term expectations of investors.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 7
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Refer to the Baudino Testimony, page 18, lines 16–20. Explain why the "historical risk premium of stock returns over the long term government bond returns has been significantly influenced upward by substantial growth in the P/E ratio" is important and why Duff and Phelps subtracted out the P/E ratio for stocks from the historical risk premium.

RESPONSE:

Mr. Baudino discussed this issue on page 26, lines 16 - 20 of his Direct Testimony. It is important to consider removal of the increase in the P/E ratio from historical risk premiums on the basis that continued expansion of the P/E ratio cannot be predicted to continue indefinitely. Duff and Phelps cited the work of Roger Ibbotson and Peng Chen in this area in the development and quantification of the supply-side equity risk premium.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 8
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Refer to the Baudino Testimony, page 26, lines 8–13, and page 27, lines 3– 7. Explain the reasoning for using 20-year Treasury bonds to determine the historical market risk premium, but 30-year Treasury bonds were used as the risk free rate.

RESPONSE:

Duff and Phelps uses a 20-Year Treasury Bond, rather than the 30-Year Treasury Bond, in its analyses of annual total returns, income returns, and capital appreciation returns for its Basic U.S. Asset Classes. Had a 30-Year Treasury Bond been used, then the risk premium compared to large company stocks would have been slightly lower since the 30-Year yield is higher than the 20-Year yield.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 9
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Refer to the Baudino testimony, page 27, lines 9–12. Provide the Duff and Phelps methodology for obtaining its normalized risk free rate.

RESPONSE:

The Duff and Phelps methodology considers a range of estimates for the long-term real risk free rate as well as a range of expected inflation forecasts. In a simple build-up method, the range of values for the long-term real risk-free rate is added to a range of inflation forecasts to obtain a range for the long-term normalized risk-free rate. Duff and Phelps' current recommended normalized risk-free rate of 2.5% is near the midpoint of the current range of estimates for the long-term normalized risk-free rate.

WITNESS / RESPONDENT RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION No. 10
Page 1 of 1

Refer to the Baudino Testimony, Exhibit RAB-5, page 1. Provide an explanation for the column "Adjusted Arithmetic Mean."

RESPONSE:

The adjusted arithmetic mean is the supply-side equity risk premium discussed by Mr. Baudino on page 26 of his Direct Testimony. This equity risk premium has the extra return from inflation in the P/E ratio removed.